Geochemistry Data Report for 2018 Scotian Slope Coring Program

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1 Interpretation Report

1.1 Executive Summary

One of the objectives of the Nova Scotia Department of Energy (NSDoE) and Geological Survey of Canada (GSC) cruise on the Scotian Slope that took place in May-June 2018 was to follow-up on the 2015 and 2016 investigations of natural petroleum seeps in this area. This cruise again used the CCGS Hudson. Because an Autonomous Underwater Vehicle (AUV) was used on this cruise and space on the ship was limited, gravity rather than piston cores were collected. Core locations were selected based on seismic available to the NSDoE and data collected onboard, including by the AUV. Only ten gravity cores were available for geochemical sampling. Eleven headspace and thirty-five sediment samples were collected from these cores.

Site 7 was at the same approximate location as 2016 site 41 where a thermogenic gas hydrate was found as well as strong evidence for subsurface petroleum seepage. These results were confirmed by the data collected at 2018 site 7 which also found a shallow thermogenic gas hydrate and evidence for abundant thermogenic hydrocarbons in sediment samples. The presence of oil-associated gas and higher molecular weight hydrocarbons suggests they were generated from an oil-prone source rock. Microbiological and visual evidence has confirmed the geochemical evidence of subsurface petroleum seepage in this area. However, no evidence for a seep was shown by samples collected at site 6 that had a surface location only 380 m from site 7. This confirms the results of earlier workers who found that geochemical indications of seeps are generally only found very close to where the hydrocarbons vent.

The only other 2018 site to show possible evidence for being in proximity to a hydrocarbon seep is site 21. While the two deeper sediment samples from this location show elevated amounts of C_{15}-C_{20} n-alkanes and more mature biomarker distributions, headspace gas samples, diamondoid concentrations, and data from the two shallower sediment samples, as well as from site 22 located only about 100 m away, do not support the presence of a high enough abundance of thermogenic hydrocarbons to indicate a petroleum seep near this location. However, it cannot be ruled out.

1.2 Introduction

Naturally occurring hydrocarbon seeps can provide evidence of working petroleum systems in areas that have not been drilled. They can be detected by satellite imagery and surface cores. Satellite evidence is often subjective and hence is usually followed up with surface core sampling to provide stronger evidence of actual occurrence. Geochemical analysis of the core samples can differentiate biogenic and thermogenic hydrocarbons and, if the latter are present, potentially identify possible petroleum systems including the age and type of source rock. The geochemical work on samples from this cruise is being done in collaboration with microbiological investigations of the cores for petroleum seepage at the University of Calgary by Hubert and co-workers.

This report presents the geochemical data obtained from the May-June 2018, off-shore Nova Scotia piston-coring cruise, that was organized by the Nova Scotia Department of Energy. The 2018 cruise revisited sites that had been found to be interesting from the 2015 and 2016 cruises with an Autonomous Underwater vehicle (AUV). This cruise, like the previous ones on the Scotian Slope, used the Canadian Coast Guard Ship (CCGS) Hudson. Unfortunately, a lower number of sites were cored than expected resulting in only a small number of samples being taken. This was due to a combination of the collaborative nature of the cruise and decisions made by the Captain of the Hudson due to weather. As for the 2015 and 2016 cruises (Fowler and Webb, 2015, 2017), the primary geochemical objective was to look for evidence of a working petroleum system on the deep water Scotian Slope and, if this was successful, determine whether an oil or gas prone source rock was present, as well as determine if any other characteristics of this source rock could be identified such as its age or depositional environment.

In 2018, only ten gravity cores were opened onboard the Hudson, from which 33 frozen sediment samples were taken for possible extract analysis and 11 sediment samples in isojars for headspace analysis. 2 isojar samples were also analyzed as sediment after headspace analysis was complete. An additional three cores were collected that were transported sealed to the GSC-Atlantic (GSC-A) for their scientific purposes. A total of four box cores were also taken from which no geochemical samples were collected.

From a geochemical perspective, the most significant site sampled in 2018 was site 7. This is at the approximate same position as 2016 site 41 that showed the best evidence for sub-surface petroleum seepage of the locations cored in 2015 and 2016, including thermogenic gas hydrate. 2018 site 6 showed no evidence of hydrocarbons and is within 0.5 km of 2018-07 and 2016-41 based on surface location although this may not be reflected in the sea bottom position. In 2500 m water depth a core can be up to 500 m from its target by deviating just 5° from the vertical.

Sites 13 to 19 are close to 2016 sites 48 and 49 where biogenic gas hydrates were found but which showed no evidence for a significant thermogenic component. Sites 21 and 23 are in the vicinity of the Cheshire L-97 well drilled by Shell in 2015-2016 and 2016 site 30.

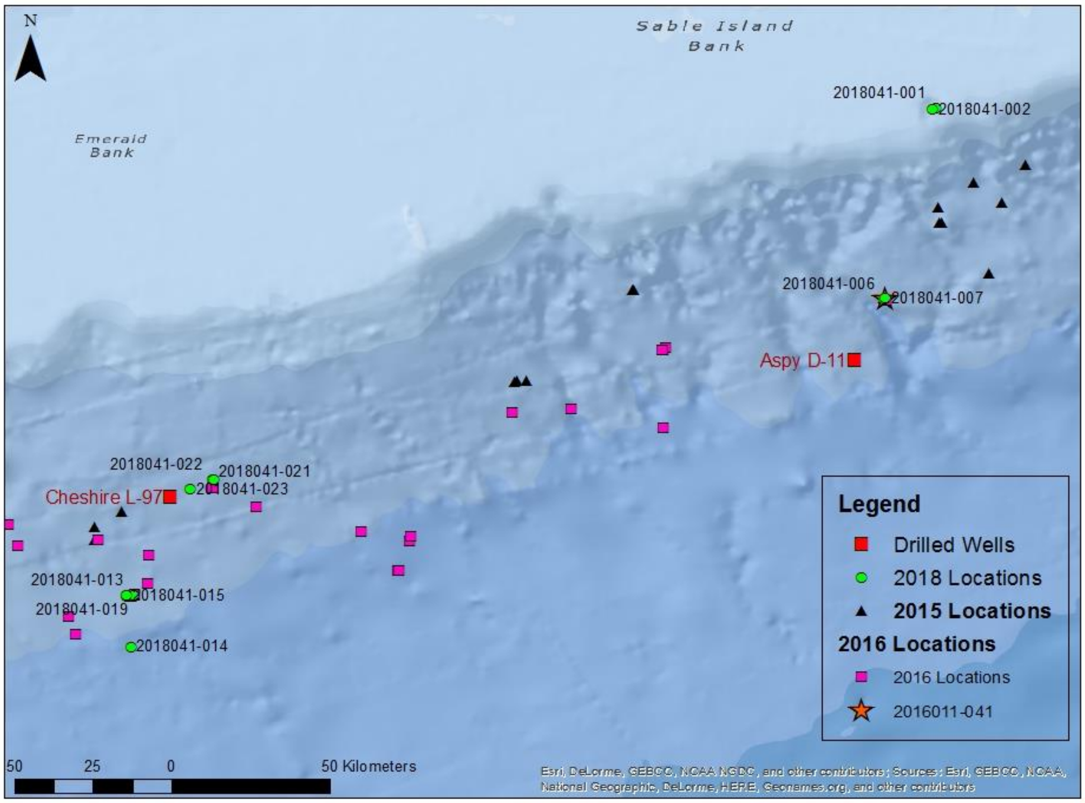


Figure 1. Location map of 2018 gravity core locations, as well as those of 2015 and 2016 piston coring sites and wells in the vicinity of this part of the Scotian Slope, offshore Nova Scotia.

Recovered gravity cores were up to 7.2 m long but generally significantly less was obtained. Cores were inspected for indications of obvious hydrocarbon staining or odour, and sandier horizons. Examples of samples are shown in Figure 2**.** A sample was collected immediately near the base of each core for the headspace gas sample. This was put into a 500 ml isojar and flushed with nitrogen before sealing. If obvious signs of gas, including gas cracks, bubbling or a strong odour were evident, more headspace gas samples were taken. On this cruise, only core 2018-007 exhibited obvious evidence of the presence of gas. Multiple sediment samples were collected from each core for extraction, ranging from the deepest portion to generally within about a metre of the top of the core. A depth of one metre marks the assumed end of the oxic zone within the sediment. However, the most crucial core from the 2018 cruise from a geochemical perspective, that from site 7, obtained significantly less than a metre of sediments. Therefore, out of necessity this core was sampled over a depth of 30-40 cm. As discussed later this still provided very interesting results. A summary of samples is included in Table 1. Replicate back-up samples were collected at each depth. Samples were wrapped in Al foil, placed in Ziploc bags and stored at -20°C to -30°C until analysis.

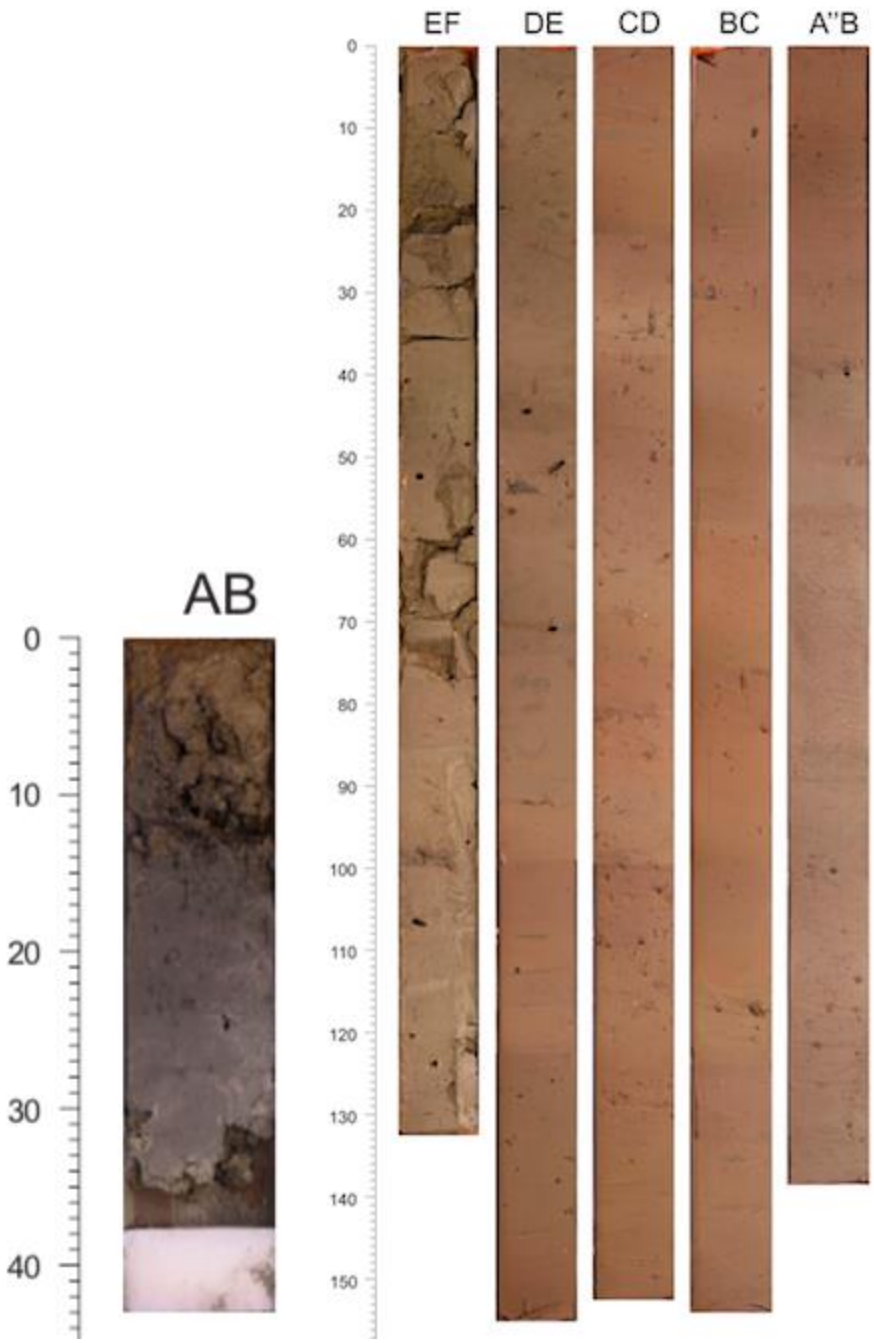


Figure 2. To the left is core 2018-007 (AB) where the darkened sediment colour is present and to the right is core 2018-021 where the more common red brown mud occurs throughout and bioturbation is observed in the upper part of the core

Gas samples were analysed for their composition and where there were sufficient hydrocarbons, isotopically. Thirty-five sediment samples were analysed for their Total Organic Carbon (TOC) content, by Rock-Eval, extracted and the total extract analysed by gas chromatography. A subset of nine total extracts was fractionated and analysed by Gas Chromatography – Mass Spectrometry (GC-MS). Six samples were analysed for diamondoids. Six samples were also analysed by GC-MS-MS. These included three from the 2018 cruise, two samples from 2016 and one from 2015. Details of the analytical methods can be found in the 'Experimental Procedures' section at the back of this report. Note sample NSO-1 is the laboratory standard.

1.3 Results

Headspace Gas Analyses

Results from the compositional analyses of headspace gases are shown in Table 8 and results from isotopic analyses in Table 9. The only site with high concentrations of hydrocarbon and non-hydrocarbon gases, including measurable quantities of C_2-C_5 gases was site 7 which may reflect the observation of gas hydrate in this core. Approximately 5ppm of H_2S was measured onsite with a handheld detector close to core 7. 5ppm is considered the safe working limit for H_2S onboard the Hudson and therefore this core was sampled directly from the whole core liner without first being split. This means the replicate samples will have some variability. The $\delta^{13}C$ values of methane from the two site 7 samples are -59 and -51‰ suggesting this has a largely thermogenic origin. On a Bernard diagram (Figure 3), and a plot of δD-methane versus $\delta^{13}C$-methane (Figure 4), the 2018 site 7 samples unsurprisingly plot close to those from 2016 site 41, suggesting oil-associated gas, based on the fields suggested by Whiticar (1994). Recently Milkov and Etiope (2018) have proposed revised diagrams for natural gas based on considerably more samples than those used by earlier workers when the diagrams were originally proposed. The site 7 samples plot in the oil associated gas areas of the $\delta^{13}C$-C_1 versus $C_1/(C_2+C_3)$ and $\delta^{13}C$-C_1 versus δ^2H-C_1 plots of Milkov and Etiope (2018), which are equivalent to Figures 3 and 4. The ethane (~$\delta^{13}C$ of -28‰) and propane (~$\delta^{13}C$ of -23.5‰) at site 7 are isotopically heavy. Based on other gas characteristics, this is likely due to biodegradation/oxidation of these gases rather than these gases having a highly mature source.

Site 15 was the only other 2018 site with a significant quantity of methane detected. The $\delta^{13}C$ of this methane was -105 ‰ indicating it has a biogenic origin.

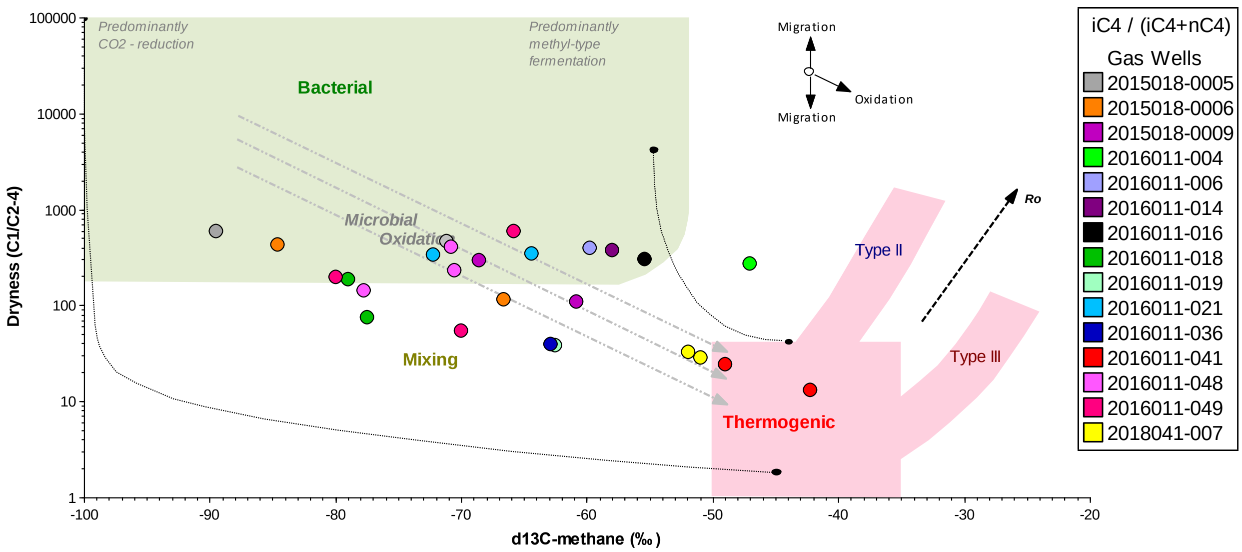


Figure 3. Bernard Diagram of δ^{13}C methane versus gas dryness. Modified after Bernard et al. (1978); Whiticar, 1994).

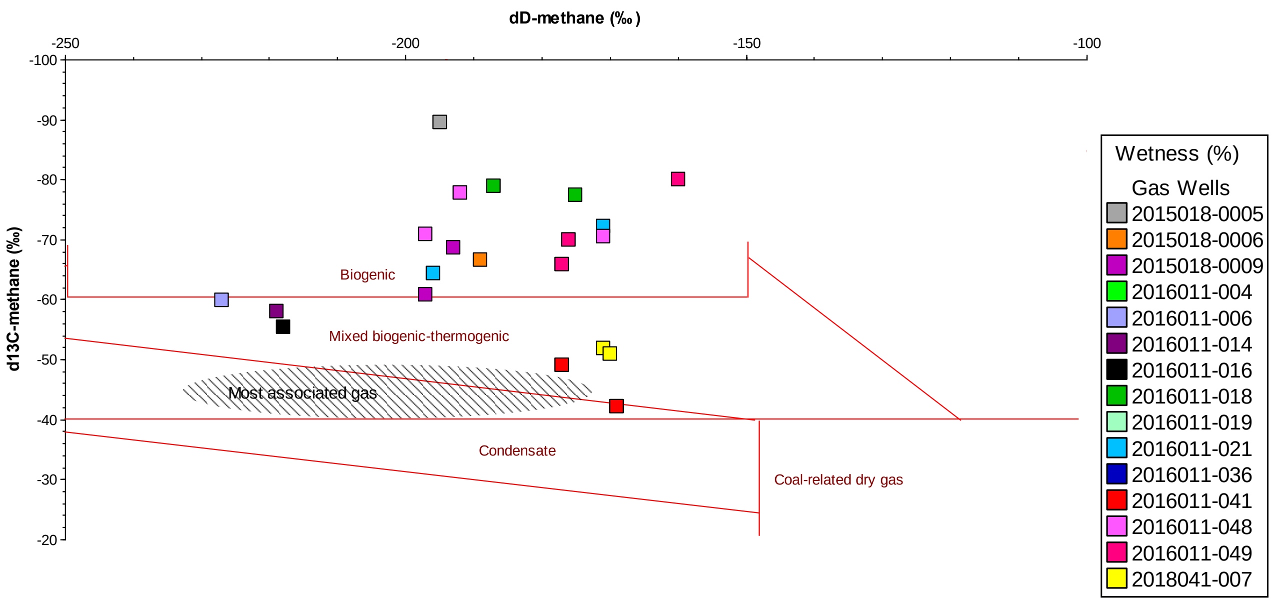


Figure 4. Plot of δD methane versus δ13C methane to show gas origins

Analysis of Sediment Samples

Sediment samples from each of the cores collected in 2018 were analysed. Three samples from sites 6 and 7 were analysed because of their proximity to 2016 site 41. It should be noted that because of the low amount of core obtained from site 7, less than 0.5 m, the three samples are from adjacent parts of the core at 0.32-0.34 m, 0.34-0.38 m, 0.38-0.43 m. Gas hydrate with a slivered appearance was observed on deck at the base of the core (C. Campbell, pers. comm.), although it had fully dissolved before it could be sampled. The clay-like, light coloured sediment found to be associated with hydrates was present, as was the cottage cheese like sediment texture associated with moving gas. Each of the sediment samples was analysed for its total organic carbon (TOC) content, by Rock-Eval, and extracted. The extracted organic matter (EOM) was analysed by gas chromatography (GC).

TOC and Rock-Eval analyses

The sediment samples all have low TOC contents (Table 6), ranging from 0.12 to 0.69%. Site 7 had some of the lowest TOC contents, ranging from 0.28 to 0.30%. The sample with the highest TOC content was from site 23 1.30-1.35 m with 0.69%.

Rock-Eval analysis was performed on the 2018 samples to see if it could be used as an indicator in these core samples of possible subsurface petroleum staining (Table 8). The HI values for this sample set were all low ranging from 44 to 118 mg HC/g TOC, with most being between 45 and 70 mg HC/g TOC. The sample with much the highest HI of 118 was from site 7 0.32-0.34 but the other two site 7 samples had values (71 and 63) that were not anomalous compared to those from other sites. Production Index (PI) which is S1/(S1+S2) is a measure of the 'free' hydrocarbons (S1) relative to those generated upon anhydrous pyrolysis from the kerogen in the sample (S2). In conventional geochemical studies, it is commonly used as an indicator of staining. PI shows a range from 0.17 to 0.30 for the 2018 core samples. In source rock studies such values would be a possible indication of staining. For the 2018 cruise samples it is probably a reflection of their low S2 values. Site 7 which, as discussed later, is the only site to show strong evidence of staining, had PI values of 0.20 to 0.26 and did not stand out from those sites which show no evidence of petroleum seepage. There was little correlation between S1 and the amount EOM per kg of rock.

Based on this limited data set, Rock-Eval type analysis does not offer an alternative cheaper way of geochemically determining subsurface petroleum seepage into near-surface sediments.

Extraction

Table 10 shows results from the extraction and fractionation of samples. The amounts of EOM obtained from the 2018 samples is generally very low ranging from 2.4 mg (site 17 1.26-1.31 m) to 17.6 mg (site 14 4.88-4.93 m). In terms of EOM (mg/kg rock) or ppm, the range is 39 (site 13 4.62-4.49 m and site 17 1.26-1.31 m) to 293 (site 14 4.88-4.93 m). There is little correlation with the Rock-Eval S1 parameter. There is also no correlation with indications of petroleum seepage. Site 7 shows EOM (mg/kg rock) values of 104-131 which, although among the highest, are less than samples from sites 14, 17, 21 and 23 which show no or little evidence of thermogenic hydrocarbons. They are also less than most of the 2016 site 41 samples (104-361) which were sampled from deeper depths than was possible at 2018 site 7.

A subset of nine samples were fractionated for more detailed analyses. The gross composition of the EOM obtained from the 2018 sediment samples is generally similar. Hydrocarbons comprise 55.1 to 73.1% of the extract, saturated hydrocarbons 41.7-58.2% with the saturated/aromatic ratio 2.14-3.99. Site 7 samples all have a similar gross EOM composition with hydrocarbons ranging from 55.1 to 58.4%, saturated hydrocarbons from 41.7 to 44.2% and a saturated/aromatic hydrocarbon ratio of 2.54 to 3.33.These are in the same range as recorded for 2016 site 41 samples although the 2.08-2.13 m sample from 2016, that showed the strongest evidence for seepage, had a much higher extract yield (361 ppm), % hydrocarbons (63.9%) and saturated/aromatic ratio (4.42) than any of the 2018 samples.

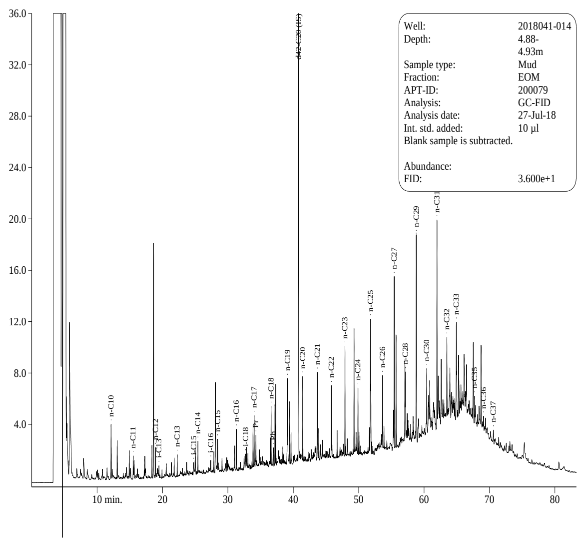
EOM-GC Chromatograms

Most of the 2018 gravity core samples show GC-EOMs that are dominated by C_{21}-C_{33} n-alkanes with a pronounced odd carbon number predominance and a large unresolved complex mixture (UCM) hump under the C_{29}-C_{35} n-alkanes (e.g. Figure 5). This is typical of sediments having a dominant recent higher land plant contribution. C_{15}-C_{20} N-alkanes are in much lower abundance compared to their higher homologues in these samples. These samples do not show a thermogenic hydrocarbon contribution.

Samples from site 7 have much higher amounts of C_{15}-C_{20} n-alkanes relative to the C_{21}-C_{33} n-alkanes than most other 2018 samples (Figure 5b). This is also indicated by the n-C_{17}/(n-C_{17}+n-C_{27}) ratio in Table 2 which is higher than for most of the other samples. The site 7 samples also show a pronounced UCM hump in the C_{15}-C_{20} region on which the n-alkanes peaks are superimposed. This is most pronounced in the 0.34-0.38 m sample (Figure 6). It suggests there has been biodegradation of these n-alkanes. Preferential biodegradation of the n-alkanes relative to the isoprenoids is supported by the site 7 samples having the highest values for the pristane/n-C_{17} (pr/C_{17}) and phytane/n-C_{18} (ph/C_{18}) parameters (Table 2).

There are some samples that show higher amounts of C_{15}-C_{20} n-alkanes besides the site 7 samples Figure 7). These samples are from locations where other depths do not show this feature. The depths at these locations are similar; site 15 (4.66-4.71 m), site 17 (4.01-4.06 m), and site 21 (4.51-4.56 m). Unlike the site 7 samples, these samples do not show a UCM under the C_{15}-C_{20} n-alkanes.

a)



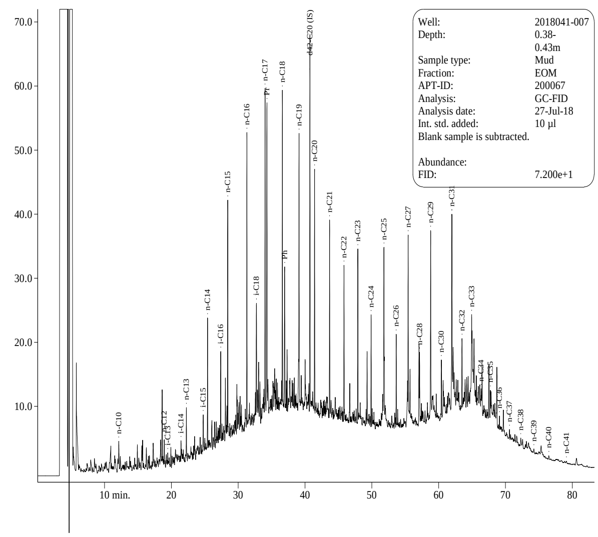


Figure 5a) An EOM gas chromatogram from Site 14 4.88-4.93m, **b)** A EOM gas chromatogram from Site 7 0.38-0.43m

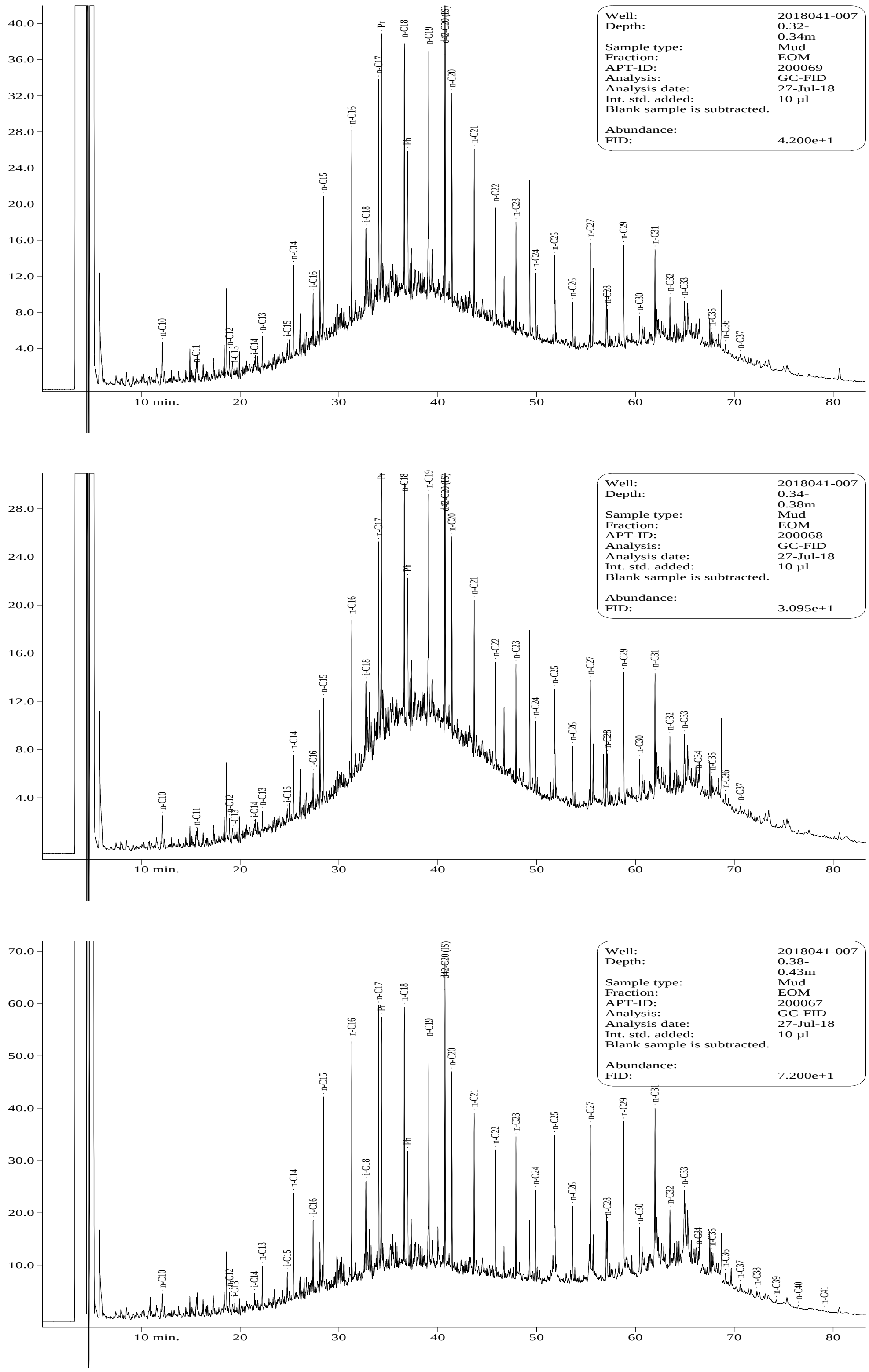


Fig. 6 EOM gas chromatograms of the three Site 7 samples. From top to bottom, they are from depths of 0.32-0.34 m, 0.34-0.38 m and 0.38-0.43 m.

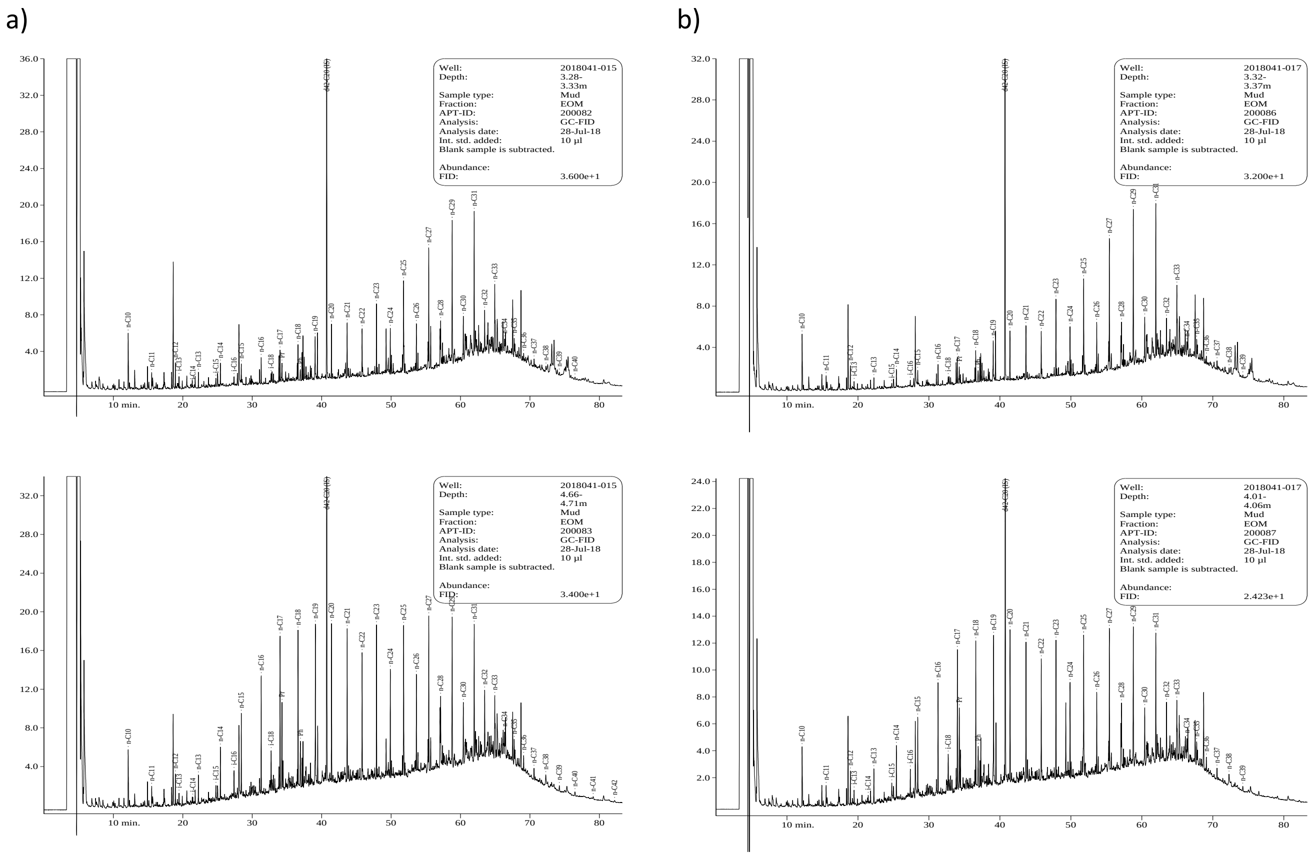


Fig 7a) EOM gas chromatograms of Site 15 3.28 and 4.66 m samples and **b)** Site 17 3.27m and 4.01 m

GC-MS Analyses for selected saturated and aromatic compounds

GC-MS analyses were done on a subset of the samples with the data shown in Tables 3 and 4.

The site 14 4.88 m sample is dominated by biologically inherited hopane and sterane isomers indicative of recent terrestrial plant material and can be taken as an example of a background sample with no or very little thermogenic component. The m/z 191 chromatogram (Figure 8a) has the C_{31} 17α(H) 22R hopane in much higher abundance than its 22S isomer and the C_{30} 17α(H)-hopane. The thermally immature C_{30} 17β(H) and C_{31} 17β(H) hopanes are also prominent in the m/z 191 mass chromatogram. This sample has very low amount of tricyclic terpanes and rearranged hopanes. As shown by the m/z 217 mass chromatogram (Figure 8b), the sterane distribution is dominated by the biologically inherited 5α(H),14α(H),17α(H) 20R isomers (aaaR) with the more thermally stable aaaS and abb isomers in much lower abundance. There is a predominance of C_{29} over C_{27} steranes and diasteranes are in very low abundance relative to the regular steranes.

In contrast to the site 14 sample, the m/z 191 chromatograms of the site 7 samples (Figure 9a) show the C_{30} 17α(H)-hopane higher than the C_{31} 17α(H) 22R and C_{30} 17β,21β(H)-hopanes. Tricyclic terpanes and rearranged hopanes are also in higher relative abundance (Table 3). Compared to the site 14 sample, the site 7 m/z 217 chromatograms (Fig 9b) show a higher abundance of short-chain steranes, diasteranes, bb and aa 20S steranes relative to the C_{29} aaaR sterane. There is also a lower proportion of C_{29} compared to C_{27} and C_{28} steranes (Table 3). Hence, site 7 samples show a greater thermogenic component suggesting that they may be situated near a source of these compounds, such as where subsurface petroleum seepage is occurring.

The other 2018 samples analysed by GC-MS show intermediate characteristics that are closer to those of site 14. This is illustrated on a cross-plot of the % 27dbS parameter (an indicator of the relative amount of diasteranes relative to regular steranes) and C_{30} 17α(H)/C_{31} 17α(H) 22R hopane (lower values indicating recent terrestrial contribution) (Figure 10a.). Most of the samples appear to plot on a trend that shows increasing diasteranes with increasing relative abundance of the C_{30} 17α(H)-hopane relative to the C_{31} 17α(H) 22R hopane. This is the trend that would be expected with increasing maturity. However, site 7 samples plot off the trend by showing a higher amount of diasteranes relative to the C_{30}/C_{31} hopane ratio. Site 21 samples show greater amounts of C_{30} hopane relative to the C_{31} 22R hopane than the site 7 samples. As discussed later there is some evidence for a thermogenic component at site 21, but it is not as strong as at site 7.

Plotting samples from previous year's cruises on to the same cross-plot (Figure 10b) supports the presence of two trends, one with most of those samples showing evidence of oil seepage (those that show a higher relative abundance of diasteranes) and one with the remaining samples. Some of these latter samples, such as samples from site 2016-32, are thought to have a petrogenic hydrocarbon contribution so this plot is not a perfect way of separating samples showing evidence for petroleum seepage from those that do not.

a) b)

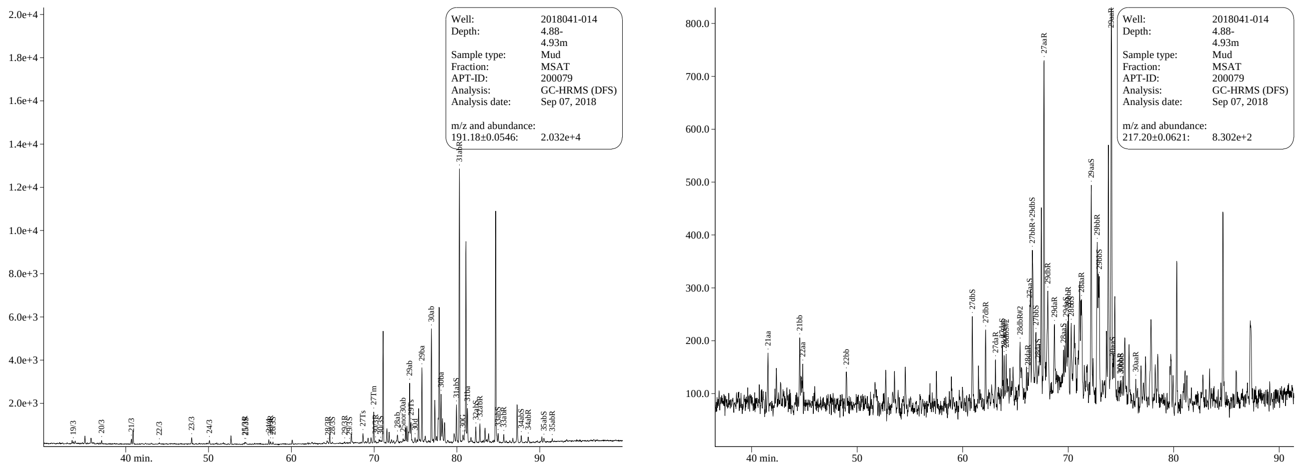


Figure 8a) m/z 191 and **b**) m/z 217 mass chromatograms for site 14 4.88-4.93 m sample.

a) b)

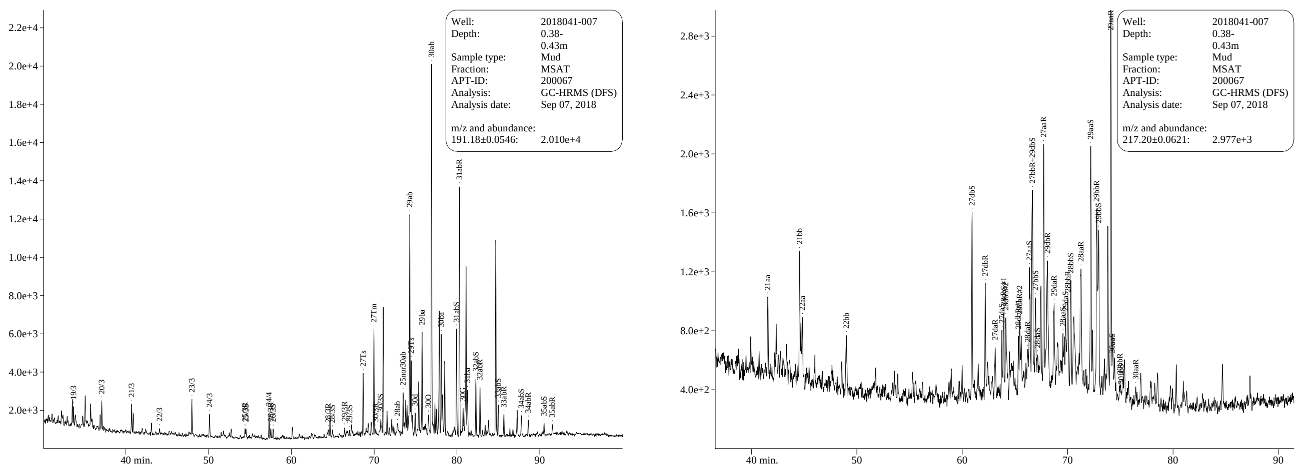
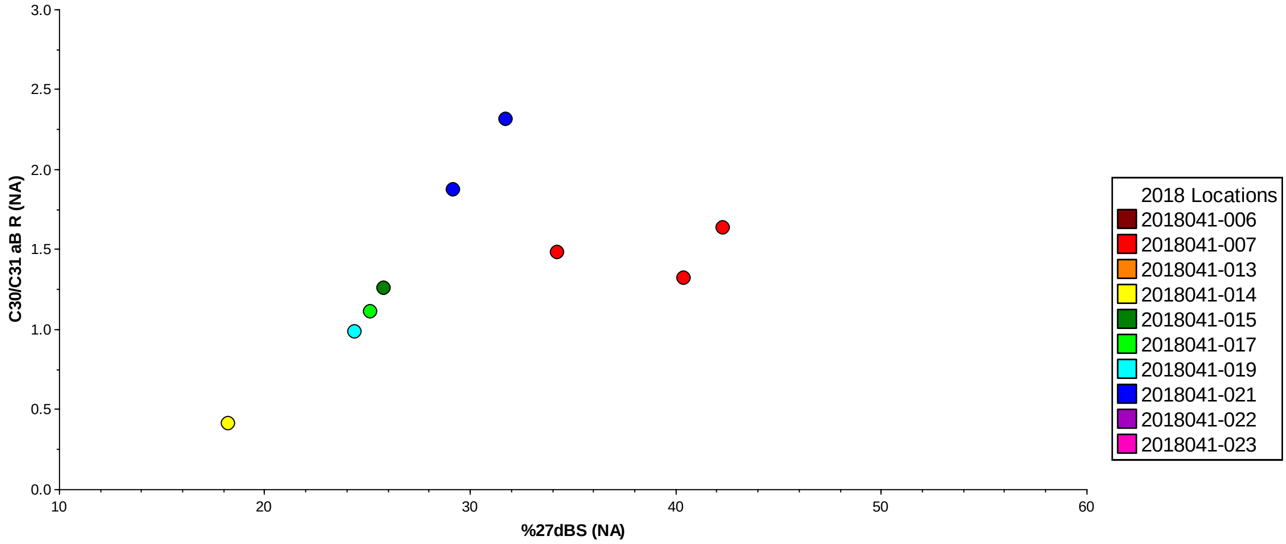


Figure 9a) m/z 191 and **b**) m/z 217 mass chromatograms for site 7 0.32-0.34 m sample.

a)



b)

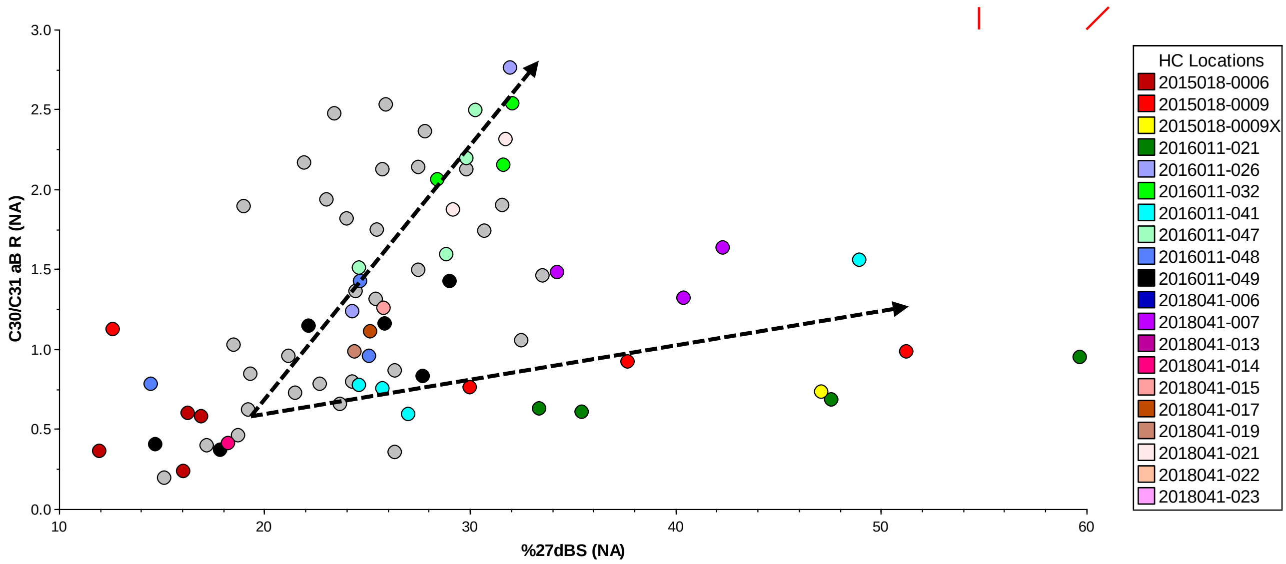


Figure 10 Crossplots of % 27dbS parameter vs C30 a/C31a 22R hopane; **a**) 2018 samples, **b**) all samples.

Site 7 is not easily distinguished from the other 2018 samples using the aromatic parameters in Table 4. For example, it does not show a significantly different maturity from the other samples as indicated by aromatic sterane cracking ratios (Crack 1 and 2, MSAro1 parameters) or the distributions of methyldibenzothiophenes and methylphenanthrenes (MSAro2 and 3). Site 7 samples have significantly higher values than other samples for the MSAro 4 and 5 parameters which are based on methylnaphthalenes and dimethylnaphthalenes. The latter can suggest higher maturity, but it is hard to explain why only parameters based on naphthalenes should distinguish the site 7 from other 2018 samples. Additionally, many samples in previous years had similar or higher values for these parameters which did not show evidence of petrogenic hydrocarbons. There are differences in the m/z 231 and 253 mass chromatograms between the site 7 and other samples because of the lower relative abundance of C_{28} triaromatic and C_{29} monoaromatic steranes relative to their lower molecular weight homologues (Figure 11). This reflects the lower amounts of C_{29} relative to C_{27} and C_{28} steranes in the saturate fraction and suggests the source of the petrogenic hydrocarbons at site 7 had a greater marine algal input.

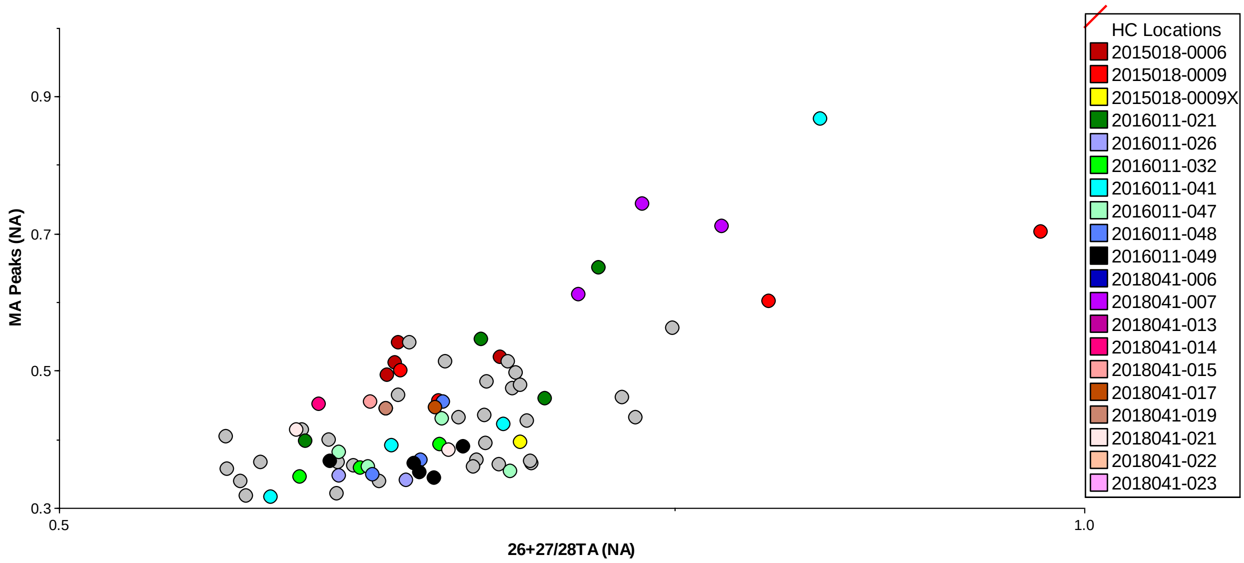


Figure 11. Cross-plot of the peaks attributed to RC26TA and SC27TA/RCTA28 versus βSC28MA and βSC28DMA and αRC27DMA/βSC29MA and βSC29DMA. Explanation of the compound abbreviations is provided after Table 15 in the report. This figure is a simplified $(C_{26}+C_{27})/C_{28}$ triaromatic steranes versus $(C_{27}+C_{28})/C_{29}$ monoaromatic steranes cross-plot using just four peak areas in the m/z 231 and m/z 253 chromatograms respectively. Samples in top right-hand side of plot are those with a lower contribution of C_{29} relative to C_{27} and C_{28} steroidal precursors.

GC-MS-MS Analyses

The most commonly used GC-MS method for detection of biomarkers such as hopanes and steranes in geological samples is to monitor a characteristic fragment ion such as m/z 191 for hopanes and m/z 217 for steranes. This is selected ion monitoring (SIM) and is the method that has been used to date for the offshore Nova Scotia piston core sample analyses. Instead of monitoring a particular ion, GC-MS-MS monitors a parent-daughter ion transition. For example, the m/z 400 -> m/z 217 transition which is specific to C_{29} steranes. This greater specificity eliminates co-eluting peaks and hence allows more accurate quantification of compounds.

For this report, GC-MS-MS analyses of six samples were undertaken. Three of the samples were from the 2018 cruise, site 7 0.32-0.34 m, site 14 4.88-4.93 m and site 21 4.51-4.56 m. Based on other data, the site 14 sample was chosen to represent a sample with just a background recent organic matter contribution, the site 7 sample because it shows strong evidence for petrogenic hydrocarbons and the site 21 sample as there was a possibility that it has a petrogenic component. Three samples from earlier Scotian Slope piston coring cruises that were thought to show evidence for petrogenic hydrocarbons were also chosen for GC-MS-MS analysis as this type of analysis had not been employed previously on these samples. These samples are 2015 site 9 2.00-2.06 m and 2016 site 21 2.30-2.35 m and 2016 site 41 2.27-2.32 m.

The objectives of using GC-MS-MS was to see if it showed more clearly the presence of thermogenic hydrocarbons than using GC-MS which has been used routinely in these investigations. For example, are differences in the degree of sterane isomerisation between C_{27} and C_{29} steranes more clearly evident, or what does the hopane distribution look like without interference from hopenes and land plant triterpenoids.

Table 6 provides age related parameters based on C_{26} and C_{30} steranes that are measured using GC-MS-MS. The C_{30} iso/n parameter is used mostly for distinguishing oils from Precambrian and Lower Paleozoic source rocks (e.g. Peters et al., 2005) and is not relevant for these samples. These compounds are in very low concentration in these samples anyway and hard to quantify accurately. The NCR (24-norcholestane ratio) and NDR (24-nordiacholestane ratio) parameters were suggested to be age-dependant by Holba et al. (1998). This was based on the assumption that 24-norcholestanes are derived from diatoms and their abundance increases relative to 27-norcholestanes after the Cretaceous because of the increased importance of diatoms after this time. The norcholestanes, especially with an unrearranged structure were in very low concentrations in these samples. Holba et al. (1998) noted that if regular 24-norcholestanes are in low concentrations, NCR can be inflated by co-eluting compounds and, consequently, the NDR is likely to be more accurate. All the samples show a NDR less than 0.25 which is thought to typify oils with pre-Cretaceous source rocks.

The table below (Figure 12) shows some ratios calculated using the GC-MS-MS data. These have been calculated similarly to the ratios in Table 4. Note that values for the same ratio calculated using GC-MS data will differ because of the different detection methodology as a transition rather than a single ion is being monitored.

Sample	Depth (m)	27%20S	27%bb	29%20S	29%bb	%27dbS	%29dbS	31%22S	%27Ts	%29Ts	%30D
2018-7	0.32	45.02	37.32	37.15	46.98	60.39	45.80	32.75	50.23	30.93	7.44
2018-14	4.88	43.54	29.02	37.62	36.66	41.72	40.94	17.20	40.40	24.93	6.57
2018-21	4.51	41.74	30.77	38.31	38.30	43.71	34.71	43.80	44.45	29.25	6.38
Blank		53.70	42.36	45.15	53.86	48.15	47.63	59.21	58.97	34.04	10.26
2015-9	2	53.69	47.40	48.76	53.65	58.84	48.37	46.22	60.81	31.47	8.54
2016-41	2.27	46.95	39.86	42.15	50.46	57.60	54.57	46.33	53.11	28.35	8.66
2016-21	2.3	48.65	48.82	37.57	46.96	51.75	43.78	48.49	61.15	29.04	8.23

Figure 12. Table of ratio calculated using GC-MS-MS data. Ratio are equivalent to those in Table 4.

A premise for doing GC-MS-MS analyses was that it was hoped that they would show differences between the C_{27} and C_{29} steranes isomerization parameters. This was based on the assumption that C_{27} steranes should show a greater influence from the thermogenic hydrocarbons present in the cored samples and hence have more mature distributions than C_{29} steranes presumed to be mostly derived from the recent input of higher land plant material. As shown in the table, this is the case for the %20S ratio where all the samples show higher values for C_{27} steranes compared to C_{29} steranes, including the 2018 site 14 sample. However, the difference is less than 10% for all the samples. Most of the samples show a 27%bb ratio that is less than that the C29%bb ratio, implying a lower maturity for the C_{27} steranes than for the C_{29} steranes. The samples showing evidence of petroleum seepage show much higher amounts of C_{27} diasteranes relative to regular steranes than for the C_{29} steranes. This is not the case for 2018-14, the background sample, which shows almost the same value for C_{27} and C_{29} steranes. Surprisingly the 2016-41 sample, that shows very good evidence for thermogenic hydrocarbons derived from petroleum seepage, shows only slightly higher amounts of C_{27} diasteranes relative to their rearranged counterparts than the C_{29} steranes.

Using GC-MS-MS, the 2018 site 7 sample is the only one in which oleanane was detected, and which has the degraded plant triterpenoids 10β-de-A-oleanane and 10β-de-A-lupane in high abundance. The presence of these compounds suggests a higher angiosperm contribution at this site than the others. This is not linked to the suspected petrogenic hydrocarbons at this location as angiosperms did not evolve until the Late Cretaceous and potential source rocks are likely to be Jurassic or older. It is related to the recent higher land plant input and may be a function of preservation of the precursors of these compounds. This is because sites 2018-7 and 2016-41 also have much the highest concentrations of diterpenoids derived from gymnosperms such as beyerane and β-phyllocladane within the samples analysed by GC-MS-MS. As other biomarker data indicates that all the core sites have received higher land plant input, they all might be expected to have a contribution from gymnosperms and angiosperms. The presence of these compounds in the 2016 site 41/2018 site 7 area might be because of the better preservation of their precursors in this area.

Overall, GC-MS-MS did not add useful supporting data to that obtained from GC-MS-SIM for indicating the presence of subsurface petroleum seepage.

Diamondoid Analyses

Diamondoids were analysed in six of the 2018 core sediment extracts. These were three samples from site 7, and one each from sites 14, 15 and 21. The raw data is in Table 19 of this report and calculated data is shown in Figure 13 below.

Amongst the 2018 samples, those from site 7 have much the highest concentrations of diamondoids, ranging from 547 to 1174 ppm compared to 17 to 141 ppm for the other three samples. The site 7 sample that shows the strongest evidence in its biomarker distributions for a thermogenic contribution (0.32-0.34 m) is the one with the highest concentration of diamondoids. The only samples with diamondoid abundances similar to 2018 site 7 in previous years analyses were from 2015 site 9 when analysed in 2015 and 2016 site 41. These are all sites where there is good evidence for subsurface petroleum seepage. The large variation over a few centimetres between the site 7 samples indicates how sensitive diamondoid concentrations can be on where the core sample is taken. This was evident in the big difference in diamondoid concentrations between the two 2015 site 9 2.0-2.06 m samples that were analysed in different years (2015 and 2016) from different halves of the core.

The 2018 site 14 sample was picked to show the background diamondoid concentration as it shows no evidence for thermogenic hydrocarbon component. It has the lowest concentration of diamondoids of any Scotian Slope sample analysed to date, with just 14 ppm. 2018 sites 15 and 21 have 107 and 141 ppm diamondoids respectively. Similar values have been obtained from samples that show and do not show evidence of subsurface petroleum seepage.

Methyladamantane Index (MAI) and methyldiamantane index (MDI), the diamondoid maturity parameters suggested by Chen et al. (1996) are mostly very similar for all the 2018 samples (Figure 13). The site 14 sample shows a lower MDI than the others (0.34 versus 0.41 to 0.45) and the range for the MAI is 0.73 to 0.76. These are broadly similar values for to those of samples from previous years. The MDI and MAI values do not seem to be affected by the presence of petrogenic hydrocarbons in these Scotian Slope recent sediment samples.

Well	Upper Depth	Lower Depth	Total all Diamondoids	Total Adamantanes	Total Diamantanes	3- + 4- Methyl-diamantanes	Methyl-adamantane index (MA)	Methyl-diamantane Index (MD)
	m	m	ppm	ppm	ppm	ppm		
2015018-0009	2	2.06	1145	1080	19	5.88	0.78	0.47
2015018-0009	2.97	3.02	186	171	10	3.20	0.77	0.48
2015018-0009	2	2.06	62	57	3	0.74	0.81	0.33
2016011-005	6.09	6.14	44	40	3	0.71	0.80	0.42
2016011-021	1.48	1.55	126	116	8	2.18	0.71	0.35
2016011-021	2.5	2.55	19	18	1	0.25	0.86	0.48
2016011-026	7.79	7.84	194	182	9	2.80	0.75	0.43
2016011-032	2.6	2.65	202	188	11	3.46	0.76	0.42
2016011-041	2.08	2.13	782	726	29	9.03	0.81	0.45
2016011-047	4.59	4.64	35	32	3	0.74	0.81	0.49
2016011-048	1.64	1.7	191	180	7	2.40	0.83	0.51
2016011-049	4.03	4.09	21	19	1	0.32	0.79	0.44
2018041-007	0.38	0.43	547	527	14	3.80	0.75	0.41
2018041-007	0.34	0.38	803	779	17	4.50	0.73	0.45
2018041-007	0.32	0.34	1174	1143	19	5.21	0.73	0.45
2018041-014	4.88	4.93	17	15	1	0.27	0.73	0.34
2018041-015	4.66	4.71	107	99	6	1.77	0.76	0.41
2018041-021	6.72	6.77	141	132	7	2.21	0.75	0.45

Figure 13. Diamondoid data from all Scotian Slope core samples collected on NS DoE cruises that have been analysed for these compounds.

Carbon Isotopes of Saturated and Aromatic Fractions

The same six 2018 core samples that were analysed for diamondoids also had the carbon isotopic composition of their saturate and aromatic fractions measured. The data is shown in Table 20. Figure 14 is a Sofer Plot of $\delta^{13}C_{saturates}$ versus $\delta^{13}C_{aromatics}$. Most samples plot in the same general area of this figure as the 2016 Scotian Slope piston coring samples and the TDI Brooks shown in the Play Fairway Atlas (Nova Scotia Energy Department, 2011). Two of the site 7 samples are isotopically heavier than previous Scotian Shelf piston core samples and the third site 7 sample is isotopically heavier than almost all other samples. All three are significantly isotopically heavier than the 2016 site 41 sample that is from the same general location. They also plot further into the marine field organic matter field originally defined by Sofer (1984) than the 2016 site 41 sample. The site 7 samples are still isotopically lighter than Scotian Shelf light oils and condensates (Powell and Snowdon, 1979:

Mukhopadhyay, 1991) which are thought to have an Upper Jurassic source rock (Fowler et al., 2016). This could suggest that all the Scotian Slope samples have a source rock older than the Upper Jurassic using the concept of there being a general trend of ^{13}C with decreasing age of source rocks (e.g. Andrusevich et al., 1998).

The 2018 site 14 sample, which shows very little evidence of any thermogenic hydrocarbon contribution, plots close to most other 2016 and 2018 samples. This suggests that a background contribution of organic matter is maybe controlling the carbon isotopic composition of the hydrocarbon fractions on the Scotian Slope. This background organic matter could be either be recent organic matter that is deposited with the sediments, or that of fossil organic matter within the sediment input. The carbon isotopic composition of an onshore Nova Scotia oil sourced from a Carboniferous lacustrine source rock has a carbon isotopic composition similar to the piston core samples ($\delta^{13}C_{sats}$ -31.5‰, δ^{13}_{arom} -30.7‰). If this is representative of outcropping Carboniferous organic-rich strata onshore Nova Scotia, then this data could be used to support that sedimentary organic matter is controlling the isotopic composition of hydrocarbons in Scotia Slope sediment samples. However, this seems unlikely as it is apparent from the EOM-GCs that in the absence of a petrogenic component, recent land plant derived hydrocarbons are dominant in these samples. Terrestrial organic matter is lighter than marine organic matter. Higher molecular weight n-alkanes are particularly light with $\delta^{13}C$ values between -29 and -33‰ being recorded for C_{25}-C_{33} n-alkanes in recent sediment samples from offshore Newfoundland which would be expected to be similar to those offshore Nova Scotia (Bieger, 1994; Park 1998). Hence, it seems likely that hydrocarbons derived from recent terrestrial-derived organic matter are influencing the isotopic signature of the Scotian Slope sediments and overwhelming any signature from the petrogenic hydrocarbons. The exception to this maybe the 2018 site 7 samples which are somewhat isotopically heavier, possibly reflecting a greater petrogenic contribution. However, it is surprising (and hard to explain) the result for the 2016 site 41 sample, which also shows strong evidence of petrogenic hydrocarbons and is the isotopically lightest sample of those analysed.

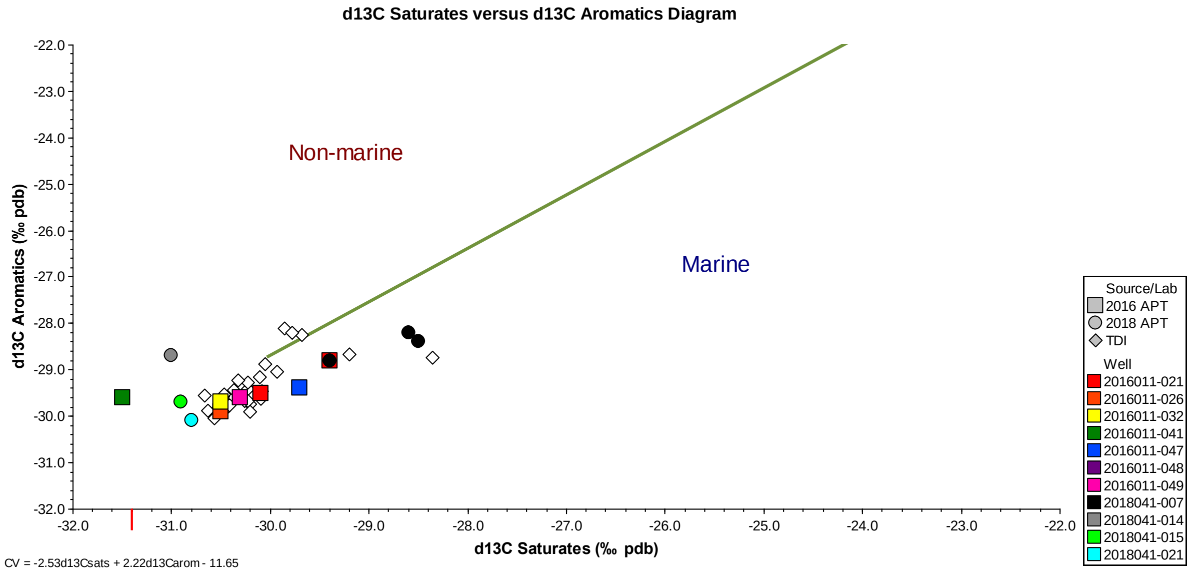


Figure 14. Sofer plot of $\delta^{13}C_{sats}$ versus $\delta^{13}C_{aromatics}$

1.4 Discussion

Sites 6 and 7

As indicated in Figure 15, 2018 sites 6 and 7 were located in the vicinity of 2016 site 41 which showed the strongest evidence for the presence of hydrocarbons from sub-surface seepage of petroleum amongst the sites cored in 2015 and 2016. Gas hydrates containing thermogenic gas were found at 2016 site 41 and were also noted at 2018 site 7 at less than a metre depth. There was no evidence for the presence of gas hydrates at 2018 site 6, either from elevated amounts of hydrocarbon gases or from the appearance of the sediment in the core. As demonstrated previously, 2018 site 7, whose sea surface position was the same as 2016 site 41 (technically 9 m apart), also shows strong evidence for petroleum seepage, from both gas and sediment extract data, as well as microbiological data (Hubert, Lee and Ferguson, pers comm.). This indicates the presence of a seep that includes both a gas and heavier liquid component, supporting the presence of a mature oil-prone source rock in this area. The 2018 site 7 core penetrated less than a metre of sediment and presumably the samples were collected from the zone of maximum disturbance (ZMD) defined by Abrams (1992) as the upper part of the sediment column where aerobic and anaerobic sulphate-reducers as well as pore water flushing can alter any hydrocarbon signatures, making the detection of seeping thermogenic hydrocarbons more difficult such as by lowering the level of hydrocarbon gases. The ZMD depth varies between different basins, being 2 m in the Marco Polo field in the Gulf of Mexico (Abrams and Dahdah, 2011) and about 6-7 m for Bering Strait sediments (Abrams, 1992). As there is obvious evidence for petrogenic hydrocarbons at 2018 site 7 at depths of 0.32-0.43 m then seepage volume and rate are overwhelming the alteration processes such as biodegradation which is evident in the

EOM-GCs. This is further evidence that site 7 penetrated sediments very close to the seep migration pathway to the surface.

The analysis of the 2018 site 7 samples has added little new information to that obtained from the 2016 site 41 samples for identifying the source rock of the thermogenic hydrocarbons at these sites. The NDR ratio measured using GC-MS-MS supports a pre-Cretaceous age. The relatively high abundance of diasteranes in the core sediment extracts suggests that the source rock does have a clastic component. The high concentration of these rearranged steranes and of the rearranged hopanes to their unrearranged counterparts suggests the source rock is at least in the middle of the oil window. This is supported by the relatively high abundance of diamondoids in the sediment extracts from these sites (547-1174 ppm). These diamondoid concentrations are significantly lower than those measured in light oils and condensates from the Scotian Shelf (4000-16000 ppm) but the numbers are not directly comparable as the diamondoids from a seeping petroleum would be diluted by hydrocarbons from recent organic matter sources as well as possible other sedimentary sources in the core samples. Diamondoids may also have preferentially accumulated in the sediment samples because of petroleum alteration processed such as biodegradation to which the diamondoids are more resistant than hydrocarbons.

In previous reports (e.g. Nova Scotia Energy Department, 2011; Fowler and Webb, 2017) the carbon isotopic composition of the saturate and aromatic fractions have been hard to interpret with regard to a source rock. This is because the $\delta^{13}C$ values measured in both the TDI Brooks 2000 study and the Nova Scotia Department of Energy piston coring cruises have been significantly lighter than those measured on Scotian Shelf light oils and condensates which are considered to have an Upper Jurassic source rock. In the Play Fairway Atlas (Nova Scotia Energy Department, 2011) this was taken to suggest that possibly a source rock older than the Upper Jurassic may be responsible for petrogenic hydrocarbons in Scotian Slope core sediments. As discussed previously, the isotopic values measured on most of the core samples could reflect the input of recent higher plant material to these sediments. The 2018 site 7 samples, especially from the two depths showing the most evidence for thermogenic hydrocarbons (0.32-0.34 and 0.34-0.38 m) do show heavier isotopic values, especially for saturate hydrocarbons, than other Scotian Slope sediments which may reflect a greater contribution of petrogenic hydrocarbons in these samples. If this is true, then the $\delta^{13}C_{sats}$ of -28.5 ‰, or somewhat heavier, would be in the range more commonly expected for Jurassic sourced oils (Andrusevich et al., 1998).

In contrast 2018 site 6, whose sea surface position is only about 380 m from site 7 (Figure 15), shows no evidence for a petrogenic hydrocarbon contribution. The head-space gas sample from this site contained very little hydrocarbons and the EOM-GCs have relatively low amounts of C_{15}-C_{20} n-alkanes. These results are similar to other samples in the area (Figure 15) such as 2015 sites 22 and 23 which are also about 350 m away from 2018 site 7 and 2016 site 41, and do not show evidence for hydrocarbons originating from petroleum seepage. They show no evidence of thermogenic gases and most of their EOM-GCs have low amounts of C_{15}-C_{20} n-alkanes relative to higher molecular weight land-plant derived n-alkanes, although the 5.48-5.53 m and 5.65-5.70 m samples from 2015 sites 22 and 23 respectively, do have somewhat higher amounts of C_{15}-C_{20} n-alkanes than other samples from these sites. Sample 2016 site 42, the sea surface location of which is about 750 away from 2016 site 41 and 2018 site 7 also shows no evidence for the presence of a petrogenic contribution. The sea surface location of these sites may be very different to the actual point where the core was collected. The water depth in this area is around 2300 to 2400 m, meaning that the sea bottom locations of the cores could easily be up to 500 m from the surface location with only a 5°deviation from the vertical.

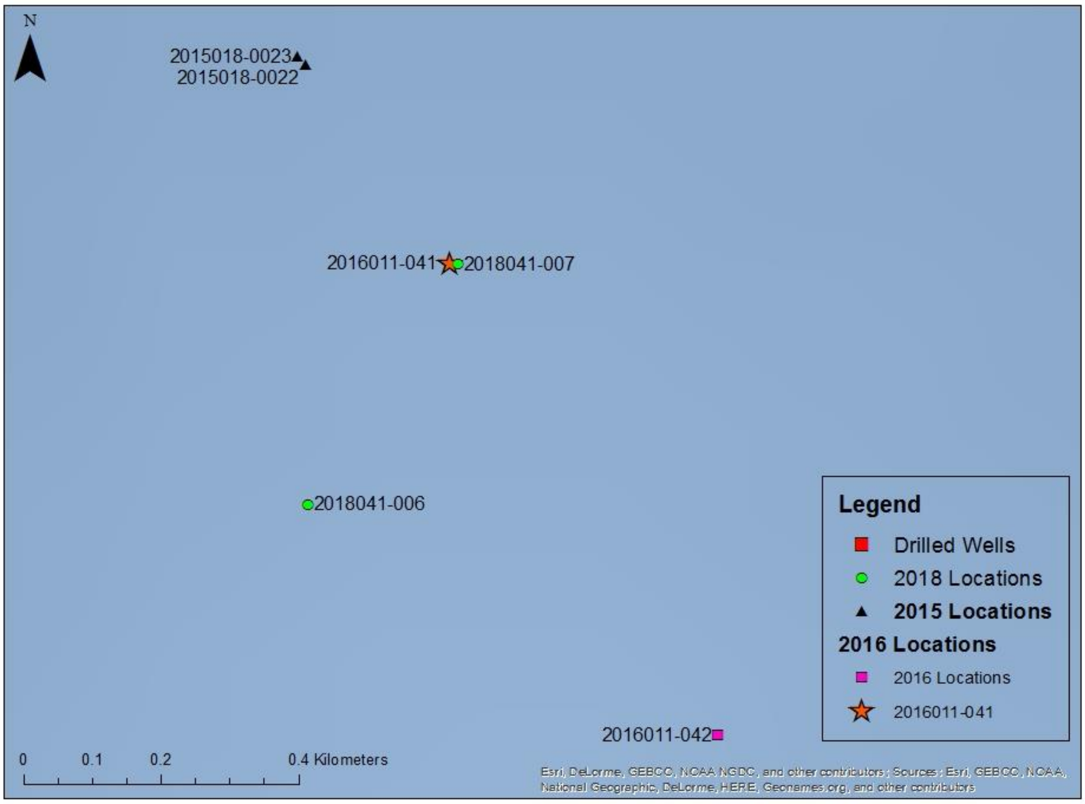


Figure 15. Detailed map of the area around sites 2016-41 and 2018-7.

Sites 13, 15, 17 and 19

Sites 13-19 (except site 14) are in the general vicinity of 2016 sites 48 and 49 where biogenic gas hydrates were found (Figure 16). Site 13 is about 430 m and Site 19 about 1.17 km from sites 48 and 49. No geochemical evidence was found to support petroleum seepage at these sites, but an enigmatic oil blob appeared during the collection of the 2016-49 core that was thought to be a possible oil slick (Fowler and Webb, 2017). Analyses done by AGI on a sample of the seep collected using the Gore Sorber suggested that it had the character of weathered oil.

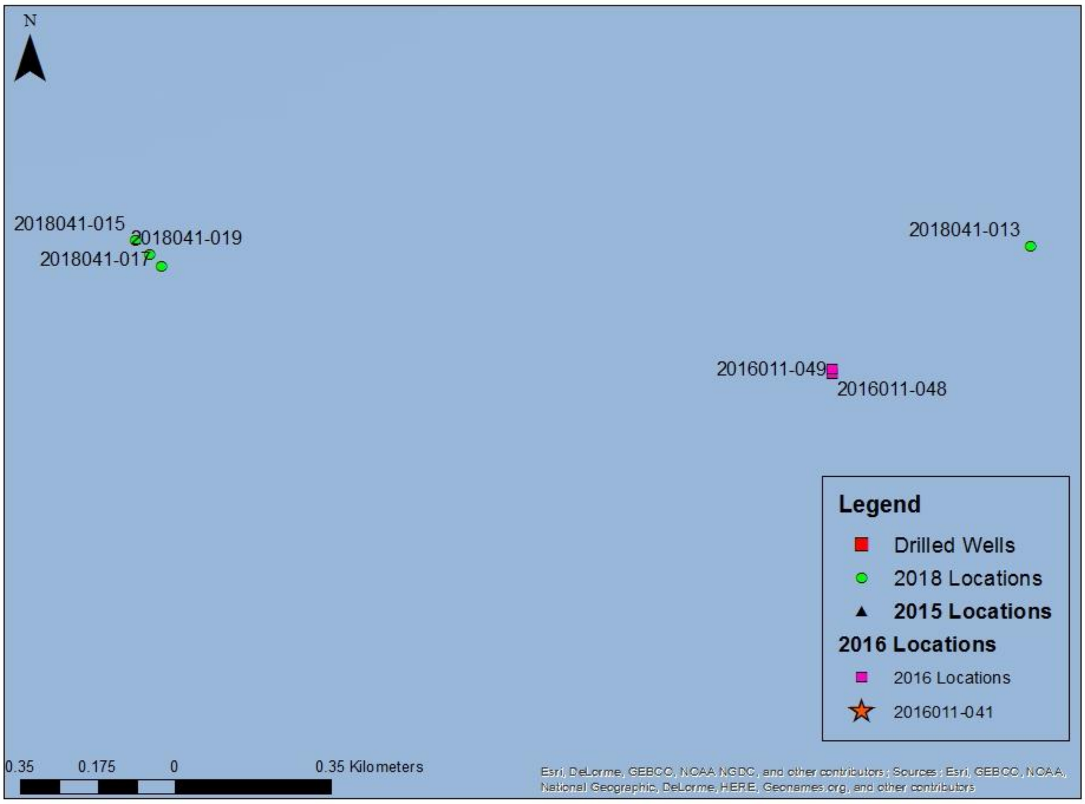


Figure 16. Detailed map of the area of 2016 sites 48 and 49, and 2018 sites 13, 15, 17 and 19.

No indications for the presence of gas hydrates were found in any of the 2018 cores taken in this area. None showed elevated amounts of hydrocarbon gases, except site 15 which was still much less than the gas concentrations at site 7. This gas at site 15 was biogenic methane. There was also no evidence from the appearance of the sediment in the 2018 cores, such as the cottage cheese texture. This is not related to the use of gravity cores in 2018 relative to piston cores in 2016 as the former penetrated depths at sites 13 to 19 (5.66 to 6.01 m) that are below where gas hydrates were found in

2016 (4.49-5.28 m). There are somewhat higher concentrations of C_{15}-C_{20} n-alkanes in the site 15 4.66-4.71 m and site 17 4.01-4.06 samples but not at other depths. There is no biomarker evidence for elevated levels of thermogenic hydrocarbons in these samples. Hence there is no supporting evidence from the 2018 core samples for the oil slick observed in 2016 originating from a subsurface seep in this area of the Scotian Slope.

Sites 21, 22 and 23

2018 site 23 was located about 5 km north west of the Shell Cheshire L-97 well drilled in 2015-2016 that was reported to be dry (Figure 17). Sites 21 and 22 were located a further 6 km north west of site 23 and about 2.5 km north of 2016 site 30. This latter site showed no evidence for the presence of subsurface petroleum seepage from either geochemistry (Fowler and Webb, 2017) or microbiology (Hubert, Lee and Ferguson, pers. comm). 2018 sites 22 and 23 show no evidence for petroleum seepage. There is no evidence for petrogenic hydrocarbons in the site 21 2.17-2.22 m and 3.17-3.22 m samples. The 4.51-4.56 m and 6.72-6.77 m samples do show a relatively high abundance of C_{15}-C_{20} n-alkanes that could suggest the presence of petroleum hydrocarbons. These samples also show possible biomarker evidence for the presence of elevated amounts of thermogenic hydrocarbons, but the evidence is not as convincing as that from site 7. For example, on Figure 10a they are distinguished from the other 2018 samples, including those from site 7, by their high C30 17α(H)/C31 17α(H) 22R hopane ratio. Although a high value for this ratio indicates a high thermogenic hydrocarbon component relative to that from recent higher land plants, as indicated by Figure 10b, this ratio does not seem to be as good an indicator of petroleum seepage as a high amount of diasteranes relative to rearranged steranes. The two site 21 samples also have higher amounts of rearranged hopanes (%27Ts and %29Ts, Table 4) similar to the 2018 site 7 samples and higher than most Scotian Shelf core samples from previous years cruises (Fowler and Webb, 2015; 2017). The proportion of C_{27} steranes relative to C_{28} and C_{29} steranes is also slightly higher (30.07-30.63%) than most Scotian Slope samples and similar to samples thought to contain petrogenic hydrocarbons. Aromatic cracking ratio suggest that the site 21 hydrocarbons could be slightly more mature than other 2018 samples, including those from site 7. However, while 2018 site 21 have some of the higher values within the total set of Scotian Shelf core samples, there are samples from sites showing no evidence of petroleum seepage with similar values. Other aromatic parameters do not support (or disprove) the presence of increased amounts of thermogenic hydrocarbons at this site. For example, the site 21 samples plot with the majority of Scotian Slope core samples on Figure 11 that show a higher proportion of C_{29} relative to C_{27} and C_{28} steroidal precursors than samples showing stronger evidence of petroleum seepage. Site 21 6.72-6.77 m sample had much lower concentrations of diamondoids than site 7 (141 ppm vs 547-1174 ppm) which might be additional evidence for the absence of a seep in this area, although the variation in measured diamondoid concentrations in some Scotian Slope cores such as 2015 site 9 and 2016 site 21 suggests that further analyses may be needed before ruling out the presence of petrogenic hydrocarbons at site 21 on the basis of low concentrations of diamondoids.

In summary, site 21 shows no evidence of thermogenic gases. Two shallower core sediment samples from this site show no indications of a petrogenic contribution in their EOM-GCs and did not have their biomarkers analysed by GC-MS. The two deeper samples do show EOM-GC evidence and some possible biomarker evidence for greater than background levels of thermogenic hydrocarbons. There is no evidence for increased amounts of thermogenic hydrocarbons at nearby site 22. Hence overall, it is considered that site 21 is unlikely to be close to a site of subsurface petroleum seepage but it cannot be ruled out. This is a site where microbiological results would be useful as supporting evidence for whether it is in proximity to a seep.

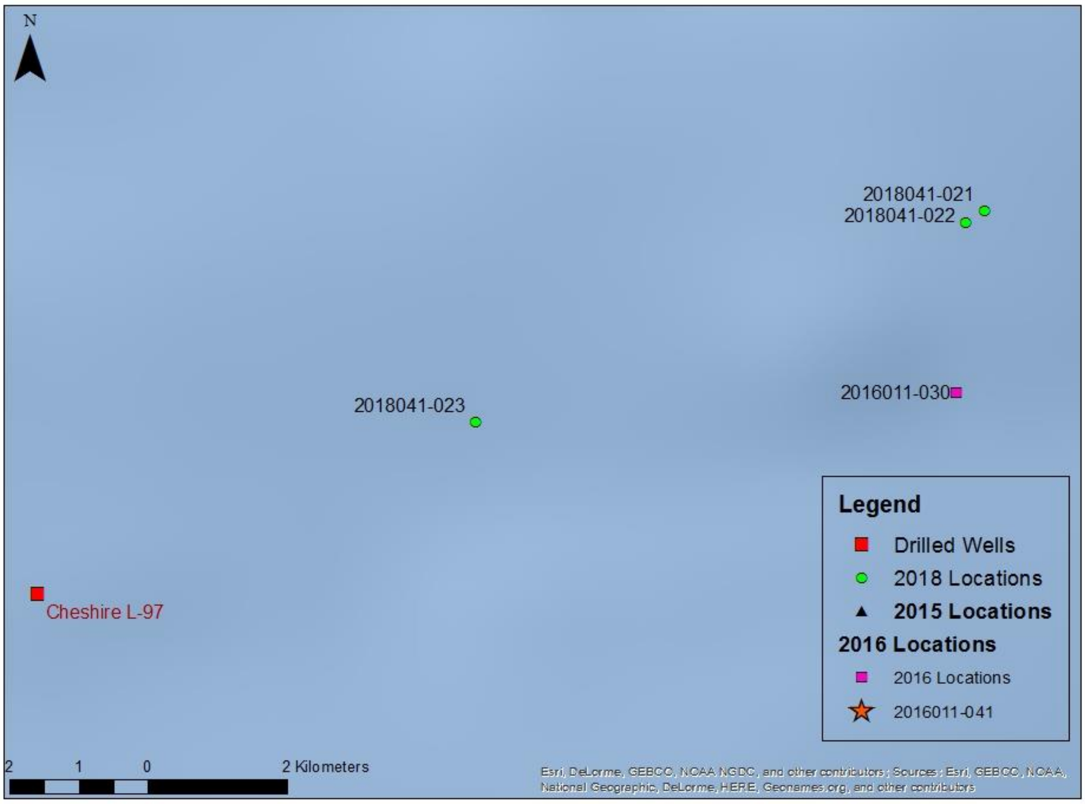


Figure 17. Detailed map showing 2018 sites 21-23, as well as the Cheshire L-97 well and 2016 site 30.

1.5 Summary

The 2018 offshore Nova Scotia cruise only collected ten gravity cores for geochemical sampling. Eleven headspace gas samples and thirty-five sediment samples were analysed. Site 7 was the same approximate location as 2016 site 41 where a thermogenic gas hydrate was found as well as strong evidence for subsurface petroleum seepage. These results were confirmed by the data collected at 2018 site 7 which also found a shallow thermogenic gas hydrate and evidence for abundant thermogenic hydrocarbons in sediment samples. Microbiological and visual evidence has confirmed the geochemical evidence of subsurface petroleum seepage in this area. The data confirms that a working petroleum system with an oil-prone source rock is in this area. No evidence for a seep was shown by samples collected at site 6 that had a sea surface location only 380 m from site 7. This confirms the results of earlier workers who found that geochemical indications of seeps are generally only found close to where the hydrocarbons vent.

The only other 2018 site to show possible evidence for being in proximity to a hydrocarbon seep is site 21. Headspace gas samples show no evidence of thermogenic gas and the two shallower sediment samples (2.17-2.22 m and 3.17-3.22 m) show no evidence for a thermogenic hydrocarbon contribution. The two deeper samples from 4.51-4.56 m and 6.72-6.77 m do show some geochemical features such as higher amounts of C_{15}-C_{20} n-alkanes in their EOM-GCs and some biomarker ratio that indicate these samples have a greater thermogenic component. However, not all biomarker ratios show this. Additionally, site 22, which is only about 100 m away, shows no indications for thermogenic hydrocarbons. Hence the presence of a seep in the vicinity of site 21 is still not proven.

1.6 References

Abrams, M.A. (1992) Geophysical and geochemical evidence for subsurface hydrocarbon leakage in the Bering Sea, Alaska. Marine and Petrol. Geol. vol. 9, 208-221.

Abrams, M.A, and Dahdah, N.F. (2011) Surface sediment hydrocarbons as indicators of subsurface hydrocarbons: Field calibration of existing and new surface geochemistry methods in the Marco Polo area, Gulf of Mexico. AAPG Bull. vol. 95, 1907-1935.

Andusevich, V.E., Engel, M.H., Zumberge, J.E. and Bothers, L.A. (1998) Secular, episodic changes in stable carbon isotope composition of crude oils. Geology, vol. 28, 847-850.

Bieger, I. (1994) Molecular and Isotopic Fingerprinting of Aliphatic Hydrocarbons in Conception Bay, Newfoundland. MSc Thesis, Memorial University of Newfoundland, St John's, Newfoundland.

Chen, J., Fu, J., Sheng, G., Liu, D. and Zhang, J. (1996) Diamondoid hydrocarbon ratios; novel maturity indices for highly mature oils. Org Geochem. vol. 25, 179-190.

Fowler, M. and Webb, J. (2015) Geochemistry Data Report of 2015 Offshore Nova Scotia Piston Coring Program. Report done for Nova Scotia Department of Energy/Offshore Energy Research Association, 309 pp.

Fowler, M. and Webb, J. (2017) Synthesis of Historical and New Geochemical Data. http://www.oera.ca/wp-content/uploads/2017/10/Sydney-Basin-Final-Complete-Report.pdf

Martin Fowler, Jamie Webb, Mark Obermajer, Frederic Monnier, Andy Mort, Matt Luheshi, and Adam MacDonald (2016). Petroleum Systems of the Scotian Basin, American Association of Petroleum Geologists Search and Discovery #10871.

Holba, A.G., Dzou, L.I.P. et al. 1998. Application of 24-norcholestanes for constraining source age of petroleum. Org. Geochem. vol. 29, 1269-1283.

Mukhopadhyay, P.K. (1991) Characterization and maturation of selected Cretaceous and Jurassic source rocks and crude oil. Geological Survey of Canada Open File 2621, 23p.

Nova Scotia Energy Department 2011. Play Fairway Analysis (PFA) offshore Nova Scotia, Canada. Published report. oera.ca/offshore-energy-research/geoscience/play-fairway-analysis

Park, Y.,L.,F. (1998) Molecular Characterization and Carbon Isotopic Ratio Analysis of Marine Hydrocarbons in Sediments from Trinity Bay, Newfoundland. MSc Thesis, Memorial University of Newfoundland, St John's, Newfoundland.

Peters, K.E., Walters, C.C. and Moldowan, J.M., 2005. The Biomarker Guide, II, Biomarkers and isotopes in petroleum systems and earth history. Cambridge Univ. Press.

Powell, T.G. and Snowdon, L.R. (1979) Geochemistry of crude oils and condensates from the Scotian Basin, offshore eastern Canada. Bull. Can. Petrol. Geol. vol. 27, 453-466.

Sofer, Z. (1984) Stable carbon isotope compositions of crude oils: application to source depositional environments and petroleum alteration. Amer. Assoc. Petrol. Geol. Bull. Vol. 68, 31-49.

2 Data Tables and Figures

Table 1. Location of Piston Coring Samples

Location	Sample	Latitude	Longitude	Water Depth (m)	Sample Type	Depth Top (m)	Depth Base (m)	Reasons/Notes
2018041-001		43.03333	-60.06706	526	Gravity Core-GC			Remained sealed for GSC-A
2018041-002		43.54879	-60.07575	419	GC			Remained sealed for GSC-A
2018041-003		43.00926	-60.20954	2362	Box Core			No samples taken
2018041-004		43.01075	-60.21490	2362	Box Core			No samples taken
2018041-005		43.00729	-60.21448	2408	Box Core			No samples taken
2018041-006	A'-A''	43.00733	-60.21366	2408	GC	4.51	4.56	
2018041-006	S01					1.32	1.37	Red brown mud with minor burrowing
2018041-006	S02					2.86	2.91	Med red brown mud
2018041-006	S03					3.83	3.88	Med red brown mud with dark grey bleb
2018041-007	A-A’	43.01048	-60.21169	2405	GC	0.38	0.43	Hydrate observed, dark grey cottage-cheese texture
2018041-007	A’-A”					0.34	0.38	Dark grey cottage-cheese texture
2018041-007	S01					0.32	0.34	Dark grey cottage-cheese texture sediment with thick medium grey clay present (typically associated with gas hydrate), 4ppm H2S
2018041-008		43.01495	-60.22131	2370	Camera station			
2018041-009		43.55376	-60.067	526	Box core			Push cores taken by GSC-A
2018041-010		42.7168	-58.12162	4228	GC			Remained sealed for GSC-A
2018041-011		42.168616	-62.35223		Camera station			
2018041-012					Camera station			

2018041-013	A'-A"	42.16228	-62.35568	2791	GC	5.96	6.01	
2018041-013	S01					1.95	2.00	Medium brown grey/red brown sediment with mottled texture, possible bioturbation
2018041-013	S02					4.26	4.31	Fine grained sandy dewatering layer, medium brown grey
2018041-013	S03					3.09	3.14	Dark grey sandy blebs concentrated at contact between red brown and grey brown mud
2018041-013	S04					4.62	4.67	Layers of dewatering sand and medium grey mud
2018041-013	S05					5.28	5.33	Black o-rich blebs in medium grey brown mud
2018041-014	A'-A"	42.015982	62.36279	2782	GC	5.66	5.71	
2018041-014	S01					4.19	4.27	Mottled black o-rich bands with small sandy layer in medium grey brown mud
2018041-014	S02					4.33	4.38	Thin sandy inter beds in medium grey brown mud
2018041-014	S03					4.88	4.93	Black o-rich irregular bands in medium grey brown mud
2018041-015	A'-A"	42.162406	-62.37383	2730	GC	5.91	5.96	
2018041-015	S01					2.85	2.90	Medium grey sand bleb in medium grey brown mud
2018041-015	S02					3.28	3.33	Medium grey brown mud with thin sandy interbeds
2018041-015	S03					4.66	4.71	Medium red brown mud with black o-rich banding

2018041-016					Camera station			
2018041-017	A'-A"	42.16188	-62.37331		GC	5.66	5.71	
2018041-017	S01					1.26	1.31	Medium red brown/grey brown mud and minor sand with mottled texture
2018041-017	S02					3.32	3.37	Medium red brown mud with thin sandy interbeds
2018041-017	S03					4.01	4.06	Black mottled o-rich bands in medium red brown mud
2018041-017	S04					5.49	5.54	Medium red brown mud with sandy layer
2018041-018				2749	Camera station			
2018041-019	A'-A"	42.162113	-62.37355	2744	GC	5.61	5.66	
2018041-019	S01					2.19	2.24	Medium red brown mud with minor sandy blebs
2018041-019	S02					2.94	2.99	Medium brown grey sandy dewatering layer in brown grey mud
2018041-019	S03					3.34	3.39	Wavy interbedded medium brown grey mud and sand
2018041-019	S04					5.49	5.54	Medium red brown mud with grey brown sandy mud layer and irregular o-rich black band
2018041-020					Camera station			
2018041-021	A'-A"	42.493595	-62.12641	2079	GC	7.25	7.30	

2018041-021	S01					3.17	3.22	Sandy bleb with smaller black o-rich blebs nearby, rip up clast of pale grey sediment typically associated with hydrate (pale green fluorescence)
2018041-021	S02					2.17	2.22	Thin sand layer in medium red brown mud, at base of mass transport deposit
2018041-021	S03					4.51	4.56	Small light grey bleb of hydrate-associated sediment (pale green fluorescence) in med red brown mud
2018041-021	S04					6.72	6.77	Dark grey/black mottled o-rich sediment in medium red brown mud, very stiff
2018041-022	A'-A"	42.492181	-62.12892	2083	GC	4.74	4.79	
2018041-022	S01					2.73	2.78	Large coarsening up dark grey fine to medium grained sand, one cobble
2018041-022	S02					3.65	3.70	Medium red brown mud with dark grey sand blebs
2018041-022	S03					4.14	4.19	Medium red brown mud with dark grey sand blebs
2018041-023	A'-A"	42.466221	-62.19235	2154	GC	3.50	3.55	
2018041-023	S01					1.30	1.35	Dark brown grey mud, nearby burrows
2018041-023	S02					2.72	2.77	Brown grey mud with small black o-rich blebs and

								sandy mud interval
2018041-023	S03					2.86	2.91	Dewatering sand bleb in dark brown grey mud

Table 2. Number of analyses performed

Analysis	Mud	Total
Leco TOC	35	35
TOC/Rock-Eval	35	35
Gas composition	11	11
Stable isotopes of gas	3	3
Extraction	35	35
Asphaltenes	9	9
MPLC	9	9
GC of EOM fraction	35	35
GC-MS of Saturated hydrocarbons	9	9
GC-MS of Aromatic hydrocarbons	9	9
GC-MS/MS	6	6
GC-MS of Diamandoids	6	6
Stable isotopes of fractions	6	6

Table 3. GC of EOM fractions (parameters)

Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	CPI 1	Pr/n-C17	Ph/n-C18	(Pr/n-C17)/ (Ph/n-C18))	Pr/Ph	n-C17/ (n-C17+n-C27)
2018041-006	Mud	1.32	1.37	200064	2.72	0.90	0.52	1.72	1.74	0.29
2018041-006	Mud	2.86	2.91	200065	2.61	0.74	0.45	1.64	1.70	0.37
2018041-006	Mud	3.83	3.88	200066	3.10	0.96	0.43	2.22	2.10	0.28
2018041-007	Mud	0.38	0.43	200067	2.94	1.35	0.73	1.86	1.93	0.60
2018041-007	Mud	0.34	0.38	200068	2.41	1.69	1.07	1.58	1.36	0.62
2018041-007	Mud	0.32	0.34	200069	2.47	1.77	0.95	1.86	1.64	0.67
2018041-013	Mud	1.95	2.00	200071	2.54	0.59	0.33	1.76	1.57	0.28
2018041-013	Mud	4.26	4.31	200072	2.67	0.96	0.51	1.86	1.43	0.16
2018041-013	Mud	3.09	3.14	200073	2.09	0.65	0.38	1.74	1.63	0.39
2018041-013	Mud	4.62	4.67	200074	2.71	0.78	0.52	1.49	1.38	0.23
2018041-013	Mud	5.28	5.33	200075	2.52	0.76	0.53	1.43	1.34	0.28
2018041-014	Mud	4.19	4.27	200077	2.63	0.72	0.55	1.33	1.13	0.21
2018041-014	Mud	4.33	4.38	200078	2.71	0.76	0.58	1.31	1.16	0.18
2018041-014	Mud	4.88	4.93	200079	2.54	0.76	0.41	1.85	1.65	0.22
2018041-015	Mud	2.85	2.90	200081	2.94	0.82	0.44	1.86	1.28	0.15
2018041-015	Mud	3.28	3.33	200082	2.84	0.75	0.48	1.57	1.48	0.21
2018041-015	Mud	4.66	4.71	200083	2.01	0.78	0.47	1.66	1.68	0.49
2018041-017	Mud	1.26	1.31	200085	2.53	0.70	0.39	1.77	1.56	0.28
2018041-017	Mud	3.32	3.37	200086	2.96	0.76	0.56	1.35	1.12	0.16
2018041-017	Mud	4.01	4.06	200087	2.14	0.80	0.46	1.73	1.74	0.49
2018041-017	Mud	5.49	5.54	200088	2.44	0.75	0.46	1.64	1.55	0.37
2018041-019	Mud	2.19	2.24	200090	2.21	0.66	0.42	1.55	1.63	0.40
2018041-019	Mud	2.94	2.99	200091	2.83	0.93	0.67	1.38	1.20	0.16
2018041-019	Mud	3.34	3.39	200092	2.89	0.76	0.67	1.14	0.97	0.16
2018041-019	Mud	5.49	5.56	200093	2.34	0.76	0.45	1.70	1.67	0.39
2018041-021	Mud	3.17	3.22	200095	2.17	1.19	1.00	1.19	0.99	0.23
2018041-021	Mud	2.17	2.22	200096	2.77	0.74	0.48	1.56	1.66	0.27
2018041-021	Mud	4.51	4.56	200097	1.64	0.62	0.39	1.60	1.55	0.54
2018041-021	Mud	6.72	6.77	200098	1.41	0.62	0.37	1.67	1.70	0.65
2018041-022	Mud	2.73	2.78	200100	2.61	0.63	0.40	1.57	1.60	0.35
2018041-022	Mud	3.65	3.70	200101	2.36	0.67	0.45	1.47	1.35	0.32

Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	CPI 1	Pr/n-C17	Ph/n-C18	(Pr/n-C17)/ (Ph/n-C18))	Pr/Ph	n-C17/ (n-C17+n-C27)
2018041-022	Mud	4.14	4.19	200102	2.20	0.60	0.43	1.40	1.26	0.37
2018041-023	Mud	1.30	1.35	200104	2.73	0.58	0.31	1.89	1.78	0.20
2018041-023	Mud	2.72	2.77	200105	2.64	0.86	0.59	1.45	1.06	0.13
2018041-023	Mud	2.86	2.91	200106	2.56	0.98	0.60	1.64	1.13	0.11
Blank Extraction	Blank			201900						1.00
2015018-0009	Mud	2.00	2.06	174218	2.49	6.52	2.39	2.72	1.17	0.08
2016011-041	Mud	2.27	2.32	174161	1.77	15.66	7.60	2.06	2.11	0.61
2016011-021	Mud	2.30	2.35	174093	2.34	1.70	3.02	0.56	0.73	0.35

Table 4. GCMS SIR of saturated compounds (parameters)

Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	%23:3	%28ab	%30D	%27Ts	%22S	%29Ts	%20S	%bb	%27dbS	%C27	%C29	28/29	24:4/23:3
2018041-007	Mud	0.38	0.43	200067	9.08	3.07	5.78	37.12	53.73	16.80	38.85	35.40	34.28	28.59	48.37	0.37	0.71
2018041-007	Mud	0.34	0.38	200068	9.85	3.95	5.56	39.53	53.40	17.33	37.53	37.59	40.37	28.24	47.24	0.42	0.69
2018041-007	Mud	0.32	0.34	200069	9.22	3.44	6.17	43.85	54.98	16.38	40.99	39.31	42.28	30.61	46.03	0.46	0.85
2018041-014	Mud	4.88	4.93	200079	5.54	6.88	4.22	23.84	45.69	15.17	35.49	31.82	18.27	27.59	52.98	0.32	0.75
2018041-015	Mud	4.66	4.71	200083	9.19	2.74	5.81	30.21	53.81	14.54	33.39	34.21	25.80	26.98	52.64	0.29	0.55
2018041-017	Mud	4.01	4.06	200087	9.62	3.59	5.70	25.98	54.23	13.90	39.16	34.71	25.18	25.44	54.26	0.29	0.49
2018041-019	Mud	5.49	5.56	200093	8.96	3.49	5.35	29.52	57.77	14.34	38.73	32.67	24.41	29.20	52.87	0.31	0.61
2018041-021	Mud	4.51	4.56	200097	9.39	3.24	5.96	39.40	54.49	17.35	43.20	33.87	29.20	30.63	52.94	0.26	0.67
2018041-021	Mud	6.72	6.77	200098	9.09	3.29	5.66	41.52	55.77	16.45	44.18	35.07	31.75	30.07	55.53	0.24	0.62
Blank Extraction	Blank			201900					100.00							1.02	
2015018-0009	Mud	2.00	2.06	174218	16.19	4.58	2.88	27.68	50.32	12.81	28.16	35.87	47.10	39.72	40.32	0.35	0.39
2016011-041	Mud	2.27	2.32	174161	21.79	4.34	5.94	36.58	54.94	16.65	37.98	39.80	48.95	32.30	45.67	0.42	0.36
2016011-021	Mud	2.30	2.35	174093	11.95	4.04	3.16	34.76	49.35	13.42	34.97	39.95	59.70	36.06	41.20	0.57	0.46

%23:3 23:3/(23:3+30αβ)*100
%28αβ 28αβ/(28αβ+30αβ)*100
%30D 30D/(30D+30αβ)*100
%27Ts 27Ts/(27Ts+27Tm)*100
%22S 32αβS/(32αβS+32αβR)*100
%29Ts 29Ts/(29Ts+30αβ)*100
%20S 29ααS/(29ααS+29ααR)*100
%ββ 29ββ(R+S)/(29ββ(R+S)+29αα(R+S))*100
%27dβS 27dβS/(27dβS+27αα(R+S))*100
%C27 27ββ(R+S)/(27ββ(R+S)+28ββ(R+S)+29ββ(R+S))*100
%C29 29ββ(R+S)/(27ββ(R+S)+28ββ(R+S)+29ββ(R+S))*100
28/29 (28αα(R+S)+28ββ(R+S))/(29αα(R+S)+29ββ(R+S))
24:4/23:3 24:4/23:3

Table 5. GCMS SIR of aromatic compounds (parameters)

Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	AROM2	Crack1	Crack2	MSAro1	MSAro2	MSAro3	MSAro4	MSAro5	MSAro6	MSAro7	MSAro8	MSAro9
2018041-007	Mud	0.38	0.43	200067	0.68	0.23	0.13	0.17	2.19	0.39	1.00	3.31	0.91	0.09	2.94	0.71
2018041-007	Mud	0.34	0.38	200068	0.64	0.25	0.14	0.23	2.16	0.39	1.08	4.31	1.07	0.08	2.11	0.68
2018041-007	Mud	0.32	0.34	200069	0.60	0.26	0.14	0.19	2.06	0.39	1.22	5.10	0.88	0.08	2.05	0.67
2018041-014	Mud	4.88	4.93	200079	0.68	0.20	0.12	0.15	2.57	0.42	0.66	2.12	0.87	0.10	1.06	0.71
2018041-015	Mud	4.66	4.71	200083	0.69	0.25	0.15	0.16	2.12	0.38	0.70	1.99	0.98	0.09	2.69	0.71
2018041-017	Mud	4.01	4.06	200087	0.70	0.26	0.15	0.17	2.10	0.40	0.73	1.99	0.88	0.11	2.26	0.71
2018041-019	Mud	5.49	5.56	200093	0.67	0.24	0.14	0.15	2.50	0.39	0.70	2.11	1.09	0.10	2.22	0.69
2018041-021	Mud	4.51	4.56	200097	0.68	0.26	0.16	0.18	2.55	0.40	0.88	1.99	1.70	0.11	3.07	0.72
2018041-021	Mud	6.72	6.77	200098	0.69	0.28	0.16	0.18	2.87	0.39	0.68	1.90	1.83	0.12	4.29	0.72
Blank Extraction	Blank			201900	1.00					0.35	0.86		1.21	0.10		
2015018-0009	Mud	2.00	2.06	174218	0.53	0.27	0.16	0.10	3.25	0.42	1.09	4.44	0.56	0.05	1.66	0.57
2016011-041	Mud	2.27	2.32	174161	0.59	0.38	0.21	0.37	2.73	0.38	1.50	6.73	0.75	0.11	1.78	0.69
2016011-021	Mud	2.30	2.35	174093	0.57	0.29	0.17	0.24	3.94	0.42	0.91	5.31	0.46	0.08	2.36	0.68

AROM2: $(C_{20}TA+C_{21}TA+SC_{26}TA+RC_{26}TA+SC_{27}TA+SC_{28}TA+RC_{27}TA+RC_{28}TA/(C_{20}TA+C_{21}TA+SC_{26}TA+RC_{26}TA+SC_{27}TA+SC_{28}TA+RC_{27}TA+RC_{28}TA+C_{21}MA+C_{22}MA+\beta SC_{27}MA+\beta RC_{27}MA+\beta RC_{27}DMA+\alpha SC_{27}MA+\beta SC_{28}MA+\beta SC_{28}DMA+\alpha RC_{27}DMA+\alpha SC_{27}DMA+\alpha RC_{27}MA+\alpha SC_{28}MA+\alpha SC_{29}MA+\alpha RC_{29}MA)$

Crack1: $(C_{20}TA)/(C_{20}TA+RC_{28}TA)$

Crack2: $(C_{20}TA+C_{21}TA)/(C_{20}TA+C_{21}TA+SC_{26}TA+RC_{26}TA+SC_{27}TA+SC_{28}TA+RC_{27}TA+RC_{28}TA)$

MSAro1: $(C_{21}MA+C_{22}MA)/(C_{21}MA+C_{22}MA+\beta SC_{27}MA+\beta RC_{27}MA+\beta RC_{27}DMA+\alpha SC_{27}MA+\beta SC_{28}MA+\beta SC_{28}DMA+\alpha RC_{27}DMA+\alpha SC_{27}DMA+\alpha RC_{27}MA+\alpha SC_{28}MA+\alpha SC_{29}MA+\alpha RC_{29}MA)$

MSAro2: 4-MDBT/1-MDBT

MSAro3: (2-MP+3-MP)/(1-MP+2-MP+3-MP+9-MP)

MSAro4: 2-MN/1-MN

MSAro5: (2,6-DMN+2,7-DMN)/1,5-DMN

MSAro6: 4-MDBT/DBT

MSAro7: DBT/P

MSAro8: 3-MP/Retene

MSAro9: $RC_{28}TA/(RC_{28}TA+\alpha RC_{28}MA+\beta RC_{29}MA+\beta RC_{29}DMA)$

Table 6. GCMS/MS of saturated compounds (parameters)

Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	NDR	NCR	21nor/27nor	iso-/n-
2018041-007	Mud	0.32	0.34	200069	0.229	0.258	0.134	
2018041-014	Mud	4.88	4.93	200079	0.132	0.232		0.168
2018041-021	Mud	4.51	4.56	200097	0.181	0.118		
Blank Extraction	Blank			201900		0.182	0.193	
2015018-0009	Mud	2.00	2.06	174218	0.138	0.218	0.334	0.215
2016011-041	Mud	2.27	2.32	174161	0.199	0.167	0.177	
2016011-021	Mud	2.30	2.35	174093	0.131	0.597	0.562	0.127

NDR (24nor27dβ(S+R)) / (24nor27dβ(S+R) + 27nor27dβ(S+R))
NCR 24nor27(αα+ββ) (S+R) / (24nor27(αα+ββ) (S+R) + 27nor27(αα+ββ) (S+R))
21nor/27nor 21nor27 / (27nor27(αα+ββ) (S+R))
iso-/n- i30αα(S+R) /30αα(S+R)

Table 7. Leco TOC data

Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	TOC (%)
2018041-006	Mud	1.32	1.37	200064	0.37
2018041-006	Mud	2.86	2.91	200065	0.44
2018041-006	Mud	3.83	3.88	200066	0.47
2018041-007	Mud	0.38	0.43	200067	0.30
2018041-007	Mud	0.34	0.38	200068	0.28
2018041-007	Mud	0.32	0.34	200069	0.30
2018041-013	Mud	1.95	2.00	200071	0.32
2018041-013	Mud	4.26	4.31	200072	0.24
2018041-013	Mud	3.09	3.14	200073	0.40
2018041-013	Mud	4.62	4.67	200074	0.26
2018041-013	Mud	5.28	5.33	200075	0.53
2018041-014	Mud	4.19	4.27	200077	0.53
2018041-014	Mud	4.33	4.38	200078	0.48
2018041-014	Mud	4.88	4.93	200079	0.52
2018041-015	Mud	2.85	2.90	200081	0.51
2018041-015	Mud	3.28	3.33	200082	0.30
2018041-015	Mud	4.66	4.71	200083	0.29
2018041-017	Mud	1.26	1.31	200085	0.38
2018041-017	Mud	3.32	3.37	200086	0.53
2018041-017	Mud	4.01	4.06	200087	0.32
2018041-017	Mud	5.49	5.54	200088	0.31
2018041-019	Mud	2.19	2.24	200090	0.29
2018041-019	Mud	2.94	2.99	200091	0.59
2018041-019	Mud	3.34	3.39	200092	0.51
2018041-019	Mud	5.49	5.56	200093	0.30
2018041-021	Mud	3.17	3.22	200095	0.28
2018041-021	Mud	2.17	2.22	200096	0.52
2018041-021	Mud	4.51	4.56	200097	0.27
2018041-021	Mud	6.72	6.77	200098	0.34
2018041-022	Mud	2.73	2.78	200100	0.12
2018041-022	Mud	3.65	3.70	200101	0.43

Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	TOC (%)
2018041-022	Mud	4.14	4.19	200102	0.24
2018041-023	Mud	1.30	1.35	200104	0.69
2018041-023	Mud	2.72	2.77	200105	0.53
2018041-023	Mud	2.86	2.91	200106	0.42
2016011-041	Mud	2.27	2.32	174161	0.36
2016011-021	Mud	2.30	2.35	174093	0.19

Table 8. TOC and Rock-Eval data

Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	S1 (mg/g)	S2 (mg/g)	S3 (mg/g)	Tmax (°C)	PP (mg/g)	PI (wt ratio)	HI (mg HC/ g TOC)	OI (mg CO2/ g TOC)	TOC (%)*
2018041-006	Mud	1.32	1.37	200064	0.11	0.27	0.16	424	0.38	0.29	72	43	0.37
2018041-006	Mud	2.86	2.91	200065	0.08	0.25	0.23	426	0.33	0.24	57	53	0.44
2018041-006	Mud	3.83	3.88	200066	0.08	0.31	0.24	425	0.39	0.21	66	51	0.47
2018041-007	Mud	0.38	0.43	200067	0.05	0.19	0.26	414	0.24	0.21	63	86	0.30
2018041-007	Mud	0.34	0.38	200068	0.07	0.20	0.23	398	0.27	0.26	71	82	0.28
2018041-007	Mud	0.32	0.34	200069	0.09	0.35	0.22	413	0.44	0.20	118	74	0.30
2018041-013	Mud	1.95	2.00	200071	0.09	0.22	0.12	364	0.31	0.29	69	37	0.32
2018041-013	Mud	4.26	4.31	200072	0.06	0.12	0.12	417	0.18	0.33	51	51	0.24
2018041-013	Mud	3.09	3.14	200073	0.07	0.23	0.19	390	0.30	0.23	58	48	0.40
2018041-013	Mud	4.62	4.67	200074	0.08	0.15	0.14	417	0.23	0.35	57	53	0.26
2018041-013	Mud	5.28	5.33	200075	0.10	0.33	0.23	429	0.43	0.23	63	44	0.53
2018041-014	Mud	4.19	4.27	200077	0.08	0.34	0.24	421	0.42	0.19	64	45	0.53
2018041-014	Mud	4.33	4.38	200078	0.06	0.27	0.22	420	0.33	0.18	56	46	0.48
2018041-014	Mud	4.88	4.93	200079	0.09	0.31	0.26	417	0.40	0.23	59	50	0.52
2018041-015	Mud	2.85	2.90	200081	0.10	0.33	0.19	422	0.43	0.23	65	37	0.51
2018041-015	Mud	3.28	3.33	200082	0.06	0.17	0.12	422	0.23	0.26	57	40	0.30
2018041-015	Mud	4.66	4.71	200083	0.05	0.16	0.20	430	0.21	0.24	56	70	0.29
2018041-017	Mud	1.26	1.31	200085	0.07	0.21	0.15	385	0.28	0.25	55	39	0.38
2018041-017	Mud	3.32	3.37	200086	0.07	0.34	0.20	430	0.41	0.17	64	38	0.53
2018041-017	Mud	4.01	4.06	200087	0.05	0.16	0.19	425	0.21	0.24	50	59	0.32
2018041-017	Mud	5.49	5.54	200088	0.06	0.18	0.16	427	0.24	0.25	57	51	0.31
2018041-019	Mud	2.19	2.24	200090	0.05	0.13	0.17	407	0.18	0.28	44	58	0.29
2018041-019	Mud	2.94	2.99	200091	0.06	0.29	0.21	425	0.35	0.17	49	36	0.59
2018041-019	Mud	3.34	3.39	200092	0.06	0.28	0.22	423	0.34	0.18	55	43	0.51
2018041-019	Mud	5.49	5.56	200093	0.04	0.16	0.14	426	0.20	0.20	54	47	0.30
2018041-021	Mud	3.17	3.22	200095	0.04	0.15	0.18	417	0.19	0.21	53	64	0.28
2018041-021	Mud	2.17	2.22	200096	0.07	0.32	0.21	426	0.39	0.18	61	40	0.52
2018041-021	Mud	4.51	4.56	200097	0.06	0.18	0.19	430	0.24	0.25	66	70	0.27
2018041-021	Mud	6.72	6.77	200098	0.07	0.23	0.19	433	0.30	0.23	67	56	0.34
2018041-022	Mud	2.73	2.78	200100	0.03	0.07	0.10	418	0.10	0.30	60	85	0.12
2018041-022	Mud	3.65	3.70	200101	0.06	0.22	0.20	431	0.28	0.21	52	47	0.43

Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	S1 (mg/g)	S2 (mg/g)	S3 (mg/g)	Tmax (°C)	PP (mg/g)	PI (wt ratio)	HI (mg HC/ g TOC)	OI (mg CO2/ g TOC)	TOC (%)*
2018041-022	Mud	4.14	4.19	200102	0.05	0.12	0.14	417	0.17	0.29	49	57	0.24
2018041-023	Mud	1.30	1.35	200104	0.13	0.51	0.26	406	0.64	0.20	74	38	0.69
2018041-023	Mud	2.72	2.77	200105	0.05	0.24	0.24	420	0.29	0.17	45	45	0.53
2018041-023	Mud	2.86	2.91	200106	0.04	0.19	0.18	422	0.23	0.17	45	42	0.42

*: Leco TOC

Table 9. Gas Composition (volume-%)

Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	C1 (%THCG)	C2 (%THCG)	C2= (%THCG)	C3 (%THCG)	C3= (%THCG)	iC4 (%THCG)	nC4 (%THCG)	C4= (%THCG)	neoC5 (%THCG)	iC5 (%THCG)	nC5 (%THCG)	C5= (%THCG)	C6+ (%THCG)	CO_2 (%THCG)	ppm THCG	H_2 (%Total)
2018041-006	Mud	4.51	4.56	200063	0.084	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.30	99.6	5217	0.0000
2018041-007	Mud	0.38	0.43	200067	87.9	1.30	0.0000	0.85	0.0000	0.33	0.21	0.0000	0.0057	0.27	0.10	0.0000	2.22	6.83	19589	0.0000
2018041-007	Mud	0.34	0.38	200068	78.4	1.43	0.0000	0.85	0.0000	0.28	0.22	0.0000	0.013	0.16	0.11	0.0000	1.95	16.6	9532	0.0000
2018041-013	Mud	5.96	6.01	200070	0.16	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.42	99.4	3714	0.0000
2018041-014	Mud	5.66	5.71	200076	0.18	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.27	99.6	5790	0.0000
2018041-015	Mud	5.91	5.96	200080	4.63	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.23	95.1	6252	0.0000
2018041-017	Mud	5.66	5.71	200084	0.53	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.23	99.2	6190	0.0000
2018041-019	Mud	5.61	5.66	200089	0.21	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.35	99.4	4260	0.0000
2018041-021	Mud	7.25	7.30	200094	0.060	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.13	99.8	10516	0.0000
2018041-022	Mud	4.74	4.79	200099	0.13	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.36	99.5	5095	0.0000
2018041-023	Mud	3.50	3.55	200103	0.069	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.17	99.8	7041	0.0000

NB: Quantification limit for CO_2 is 0.007%, all values < 0.007% is set to 0.

Table 9. continued, Gas Composition (volume-%)

Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	He (%Total)	N_2 (%Total)	O_2+Ar (%Total)	CO (%Total)	ppm Total	C1-nC4 (%THCG)	C2-nC4 (%THCG)	C5+ (%THCG)	Wetness	iC4/nC4
2018041-006	Mud	4.51	4.56	200063	0.0000	96.7	2.74	0.0000	970996	0.084	0.0000	0.30	0.0000	
2018041-007	Mud	0.38	0.43	200067	0.0000	79.7	18.2	0.0000	976904	90.6	2.69	2.60	2.97	1.58
2018041-007	Mud	0.34	0.38	200068	0.0000	97.5	1.55	0.0000	970182	81.2	2.79	2.24	3.44	1.24
2018041-013	Mud	5.96	6.01	200070	0.0000	79.2	20.4	0.0000	983664	0.16	0.0000	0.42	0.0000	
2018041-014	Mud	5.66	5.71	200076	0.0000	82.4	17.0	0.0000	978699	0.18	0.0000	0.27	0.0000	
2018041-015	Mud	5.91	5.96	200080	0.0000	96.6	2.78	0.0000	973466	4.63	0.0000	0.23	0.0000	
2018041-017	Mud	5.66	5.71	200084	0.0000	97.0	2.39	0.0000	971724	0.53	0.0000	0.23	0.0000	
2018041-019	Mud	5.61	5.66	200089	0.0000	96.8	2.78	0.0000	974697	0.21	0.0000	0.35	0.0000	
2018041-021	Mud	7.25	7.30	200094	0.0000	94.7	4.24	0.0000	966763	0.060	0.0000	0.13	0.0000	
2018041-022	Mud	4.74	4.79	200099	0.0000	78.9	20.6	0.0000	982669	0.13	0.0000	0.36	0.0000	
2018041-023	Mud	3.50	3.55	200103	0.0000	91.6	7.64	0.0000	969323	0.069	0.0000	0.17	0.0000	

Table 10. Gas Isotopes (δ¹³C (‰ VPDB), δD (‰ VSMOW))

Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	C1 $\delta^{13}C$	C2 $\delta^{13}C$	C3 $\delta^{13}C$	i-C4 $\delta^{13}C$	n-C4 $\delta^{13}C$	i-C5 $\delta^{13}C$	n-C5 $\delta^{13}C$	CO_2 $\delta^{13}C$	C1 δD
2018041-007	Mud	0.38	0.43	200067	-51.9	-28.4	-23.5	-26.9	-29.7			-20.7	-171
2018041-007	Mud	0.34	0.38	200068	-51.0	-27.5	-23.7	-24.2				-37.5	-170
2018041-015	Mud	5.91	5.96	200080	-105.2							-39.4	

Note that the sensitivity of the MS instrument used for isotope analysis is better than the TCD on GC used for quantification, allowing for $\delta^{13}C$ isotope measurements of CO_2 on samples containing < 0.007% CO_2 (TDC quantification limit) which are set to 0 in the tables.

Table 11. Extraction, Asphaltene precipitation and MPLC data

Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	Rock weight (g)	EOM (mg)	EOM (mg/kg Rock)	SAT (wt% of EOM/Oil)	ARO (wt% of EOM/Oil)	POL (wt% of EOM/Oil)	ASP (wt% of EOM/Oil)	HC (wt% of EOM/Oil)
2018041-006	Mud	1.32	1.37	200064	60.573	5.4	89					
2018041-006	Mud	2.86	2.91	200065	60.916	7.4	121					
2018041-006	Mud	3.83	3.88	200066	61.969	7.1	115					
2018041-007	Mud	0.38	0.43	200067	61.636	8.1	131	41.7	13.4	34.1	10.8	55.1
2018041-007	Mud	0.34	0.38	200068	61.519	6.4	104	41.9	16.5	30.5	11.1	58.4
2018041-007	Mud	0.32	0.34	200069	61.691	6.0	97	44.2	13.1	32.0	10.7	57.3
2018041-013	Mud	1.95	2.00	200071	60.304	2.9	48					
2018041-013	Mud	4.26	4.31	200072	60.970	4.2	69					
2018041-013	Mud	3.09	3.14	200073	61.400	4.2	68					
2018041-013	Mud	4.62	4.67	200074	61.464	2.4	39					
2018041-013	Mud	5.28	5.33	200075	60.639	16.9	279					
2018041-014	Mud	4.19	4.27	200077	60.483	9.3	154					
2018041-014	Mud	4.33	4.38	200078	60.572	4.7	78					
2018041-014	Mud	4.88	4.93	200079	60.043	17.6	293	53.9	11.7	28.2	6.1	65.7
2018041-015	Mud	2.85	2.90	200081	60.796	3.4	56					
2018041-015	Mud	3.28	3.33	200082	53.106	5.2	98					
2018041-015	Mud	4.66	4.71	200083	61.189	6.0	98	43.1	20.1	24.2	12.6	63.2
2018041-017	Mud	1.26	1.31	200085	61.243	2.4	39					
2018041-017	Mud	3.32	3.37	200086	60.418	3.2	53					
2018041-017	Mud	4.01	4.06	200087	60.530	10.1	167	58.2	14.9	19.1	7.8	73.1
2018041-017	Mud	5.49	5.54	200088	60.354	5.2	86					
2018041-019	Mud	2.19	2.24	200090	60.434	3.7	61					
2018041-019	Mud	2.94	2.99	200091	61.911	4.1	66					
2018041-019	Mud	3.34	3.39	200092	60.842	3.7	61					
2018041-019	Mud	5.49	5.56	200093	61.642	6.2	101	44.9	14.8	25.9	14.3	59.8
2018041-021	Mud	3.17	3.22	200095	60.879	4.7	77					
2018041-021	Mud	2.17	2.22	200096	56.049	5.2	93					
2018041-021	Mud	4.51	4.56	200097	61.258	4.8	78	45.3	11.8	29.0	13.9	57.2
2018041-021	Mud	6.72	6.77	200098	61.159	9.4	154	54.2	13.6	23.8	8.4	67.8
2018041-022	Mud	2.73	2.78	200100	60.413	2.9	48					
2018041-022	Mud	3.65	3.70	200101	60.339	4.4	73					

Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	Rock weight (g)	EOM (mg)	EOM (mg/kg Rock)	SAT (wt% of EOM/Oil)	ARO (wt% of EOM/Oil)	POL (wt% of EOM/Oil)	ASP (wt% of EOM/Oil)	HC (wt% of EOM/Oil)
2018041-022	Mud	4.14	4.19	200102	61.758	3.3	53					
2018041-023	Mud	1.30	1.35	200104	60.443	9.7	160					
2018041-023	Mud	2.72	2.77	200105	60.634	10.8	178					
2018041-023	Mud	2.86	2.91	200106	61.603	4.9	80					
2015018-0009	Mud	2.00	2.06	174218	60.453	2.0	33	8.8	9.9	81.3		18.7
2016011-041	Mud	2.27	2.32	174161	59.948	10.6	177	35.0	13.9	17.9	33.2	48.9
2016011-021	Mud	2.30	2.35	174093	59.929	10.8	180	23.4	20.9	14.9	40.8	44.3

Table 12. GC of EOM fractions (peak area)

Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	n-C10	n-C11	n-C12	i-C13	i-C14	n-C13	i-C15	n-C14	i-C16	n-C15	n-C16	i-C18	n-C17	Pr	n-C18	Ph
2018041-006	Mud	1.32	1.37	200064	1.47e2	4.70e1	5.20e1	6.90e1	8.00e0	3.90e1	2.50e1	5.10e1	2.60e1	5.40e1	6.50e1	3.40e1	8.90e1	8.00e1	8.80e1	4.60e1
2018041-006	Mud	2.86	2.91	200065	1.00e2	4.10e1	4.70e1	3.90e1	1.10e1	5.10e1	3.40e1	6.60e1	3.70e1	8.40e1	1.08e2	5.90e1	1.58e2	1.17e2	1.52e2	6.90e1
2018041-006	Mud	3.83	3.88	200066	1.50e2	4.50e1	6.00e1	4.70e1	1.20e1	5.00e1	3.50e1	6.20e1	3.90e1	6.20e1	8.60e1	4.30e1	1.10e2	1.06e2	1.17e2	5.00e1
2018041-007	Mud	0.38	0.43	200067	9.70e1	0.00e0	7.10e1	2.70e1	5.40e1	1.34e2	1.17e2	3.22e2	2.68e2	5.45e2	6.61e2	4.91e2	7.88e2	1.07e3	7.61e2	5.53e2
2018041-007	Mud	0.34	0.38	200068	5.10e1	1.00e0	4.70e1	1.10e1	1.10e1	2.80e1	2.10e1	9.30e1	6.80e1	1.31e2	1.87e2	1.93e2	2.76e2	4.66e2	3.20e2	3.43e2
2018041-007	Mud	0.32	0.34	200069	9.00e1	2.30e1	4.80e1	1.30e1	2.50e1	6.60e1	4.10e1	1.63e2	1.19e2	2.38e2	3.09e2	2.62e2	3.83e2	6.77e2	4.36e2	4.14e2
2018041-013	Mud	1.95	2.00	200071	1.27e2	4.30e1	4.40e1	3.10e1	4.00e0	3.10e1	1.80e1	3.50e1	1.60e1	3.30e1	4.10e1	1.80e1	4.30e1	2.50e1	4.80e1	1.60e1
2018041-013	Mud	4.26	4.31	200072	1.00e2	2.50e1	3.10e1	2.60e1	0.00e0	1.50e1	1.10e1	2.30e1	1.30e1	1.40e1	2.20e1	1.10e1	2.50e1	2.40e1	3.20e1	1.70e1
2018041-013	Mud	3.09	3.14	200073	7.90e1	2.90e1	3.50e1	2.00e1	7.00e0	3.10e1	2.50e1	5.40e1	2.60e1	6.70e1	7.70e1	3.70e1	8.80e1	5.80e1	9.40e1	3.50e1
2018041-013	Mud	4.62	4.67	200074	1.17e2	2.30e1	3.20e1	9.00e0	2.00e0	1.30e1	9.00e0	2.40e1	9.00e0	1.80e1	2.50e1	1.40e1	3.10e1	2.40e1	3.40e1	1.80e1
2018041-013	Mud	5.28	5.33	200075	9.00e1	3.40e1	3.80e1	2.40e1	7.00e0	3.20e1	2.40e1	5.30e1	2.80e1	5.80e1	7.90e1	4.40e1	1.04e2	7.90e1	1.12e2	5.90e1
2018041-014	Mud	4.19	4.27	200077	1.18e2	3.00e1	3.80e1	1.40e1	0.00e0	2.00e1	1.70e1	3.20e1	1.50e1	2.70e1	3.20e1	2.00e1	4.50e1	3.30e1	5.30e1	2.90e1
2018041-014	Mud	4.33	4.38	200078	1.22e2	2.60e1	4.00e1	1.40e1	0.00e0	1.80e1	1.80e1	2.60e1	1.00e1	2.30e1	3.10e1	2.10e1	4.20e1	3.20e1	4.80e1	2.80e1
2018041-014	Mud	4.88	4.93	200079	9.40e1	3.40e1	3.70e1	1.00e1	0.00e0	2.50e1	1.80e1	3.60e1	1.50e1	3.30e1	4.60e1	2.60e1	5.80e1	4.40e1	6.50e1	2.70e1
2018041-015	Mud	2.85	2.90	200081	1.32e2	2.60e1	4.20e1	1.90e1	0.00e0	1.40e1	7.00e0	2.30e1	1.10e1	1.30e1	2.00e1	1.30e1	2.10e1	1.70e1	3.00e1	1.30e1
2018041-015	Mud	3.28	3.33	200082	1.33e2	3.40e1	4.20e1	2.10e1	4.00e0	2.50e1	1.90e1	3.60e1	1.70e1	3.20e1	4.30e1	2.30e1	5.30e1	4.00e1	5.60e1	2.70e1
2018041-015	Mud	4.66	4.71	200083	1.32e2	3.90e1	4.80e1	2.40e1	1.10e1	4.30e1	3.30e1	7.80e1	5.50e1	1.22e2	1.76e2	1.02e2	2.42e2	1.88e2	2.39e2	1.12e2
2018041-017	Mud	1.26	1.31	200085	1.18e2	3.10e1	3.80e1	1.90e1	3.00e0	1.90e1	1.20e1	3.10e1	1.30e1	2.80e1	3.10e1	1.00e1	3.20e1	2.20e1	3.60e1	1.40e1
2018041-017	Mud	3.32	3.37	200086	1.23e2	2.80e1	3.60e1	1.20e1	0.00e0	1.60e1	9.00e0	2.60e1	1.30e1	2.00e1	3.10e1	1.70e1	3.80e1	2.90e1	4.60e1	2.60e1
2018041-017	Mud	4.01	4.06	200087	1.03e2	3.10e1	3.80e1	1.70e1	8.00e0	3.50e1	2.20e1	5.60e1	3.70e1	8.00e1	1.21e2	6.10e1	1.61e2	1.29e2	1.60e2	7.40e1
2018041-017	Mud	5.49	5.54	200088	1.24e2	4.00e1	5.10e1	1.90e1	9.00e0	5.60e1	3.80e1	5.90e1	3.50e1	7.60e1	1.01e2	5.30e1	1.38e2	1.04e2	1.47e2	6.70e1
2018041-019	Mud	2.19	2.24	200090	1.12e2	2.90e1	4.60e1	1.80e1	7.00e0	4.60e1	1.80e1	5.20e1	2.60e1	6.00e1	7.00e1	3.10e1	8.70e1	5.70e1	8.20e1	3.50e1
2018041-019	Mud	2.94	2.99	200091	1.32e2	3.30e1	4.40e1	1.70e1	0.00e0	1.50e1	1.30e1	2.70e1	1.40e1	1.90e1	2.90e1	1.60e1	3.10e1	2.90e1	3.60e1	2.40e1
2018041-019	Mud	3.34	3.39	200092	1.10e2	2.50e1	3.40e1	1.90e1	0.00e0	2.70e1	1.10e1	2.90e1	1.40e1	2.30e1	3.40e1	1.70e1	4.30e1	3.30e1	5.10e1	3.40e1
2018041-019	Mud	5.49	5.56	200093	1.21e2	4.10e1	4.60e1	2.80e1	1.20e1	3.90e1	3.10e1	6.40e1	3.60e1	8.30e1	1.16e2	6.80e1	1.68e2	1.27e2	1.70e2	7.60e1
2018041-021	Mud	3.17	3.22	200095	1.26e2	3.10e1	4.10e1	1.80e1	0.00e0	2.50e1	2.20e1	3.70e1	2.80e1	4.30e1	6.20e1	4.50e1	8.20e1	9.70e1	9.80e1	9.80e1
2018041-021	Mud	2.17	2.22	200096	1.31e2	3.90e1	4.40e1	2.20e1	0.00e0	4.20e1	2.20e1	4.00e1	1.80e1	4.30e1	5.30e1	2.40e1	7.10e1	5.30e1	6.70e1	3.20e1
2018041-021	Mud	4.51	4.56	200097	9.80e1	3.20e1	5.30e1	3.00e1	1.30e1	7.20e1	3.50e1	1.13e2	8.30e1	2.27e2	3.08e2	1.52e2	4.28e2	2.68e2	4.43e2	1.73e2
2018041-021	Mud	6.72	6.77	200098	1.12e2	4.60e1	6.70e1	4.60e1	2.00e1	1.06e2	4.60e1	1.76e2	1.26e2	3.21e2	4.15e2	2.09e2	5.70e2	3.55e2	5.60e2	2.09e2
2018041-022	Mud	2.73	2.78	200100	1.18e2	2.50e1	3.30e1	1.10e1	0.00e0	2.30e1	1.30e1	3.00e1	1.30e1	3.00e1	3.90e1	2.10e1	5.70e1	3.60e1	5.60e1	2.20e1
2018041-022	Mud	3.65	3.70	200101	1.19e2	3.80e1	4.10e1	2.50e1	6.00e0	5.40e1	2.30e1	5.40e1	2.90e1	6.20e1	8.20e1	4.00e1	1.05e2	7.00e1	1.14e2	5.20e1

Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	n-C10	n-C11	n-C12	i-C13	i-C14	n-C13	i-C15	n-C14	i-C16	n-C15	n-C16	i-C18	n-C17	Pr	n-C18	Ph
2018041-022	Mud	4.14	4.19	200102	1.60e2	4.80e1	5.20e1	2.60e1	8.00e0	4.30e1	2.50e1	6.40e1	3.10e1	7.30e1	9.20e1	4.50e1	1.17e2	7.00e1	1.30e2	5.60e1
2018041-023	Mud	1.30	1.35	200104	1.14e2	3.90e1	4.60e1	1.60e1	0.00e0	3.60e1	3.00e1	3.50e1	1.40e1	3.50e1	4.20e1	1.50e1	5.00e1	2.90e1	5.30e1	1.60e1
2018041-023	Mud	2.72	2.77	200105	1.42e2	3.40e1	3.90e1	0.00e0	0.00e0	2.50e1	0.00e0	3.60e1	0.00e0	2.90e1	4.20e1	1.60e1	5.20e1	4.50e1	7.20e1	4.20e1
2018041-023	Mud	2.86	2.91	200106	1.23e2	2.60e1	3.60e1	9.00e0	0.00e0	2.00e1	1.00e1	3.60e1	1.40e1	2.50e1	3.20e1	1.90e1	4.10e1	4.00e1	5.90e1	3.60e1
Blank Extraction	Blank			201900	1.77e2	2.40e1	4.00e1	0.00e0	0.00e0	2.00e0	0.00e0	1.40e1	0.00e0	0.00e0	4.00e0	0.00e0	7.00e0	0.00e0	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	5.30e1	0.00e0	3.50e1	0.00e0	2.20e1	1.20e1	5.00e0	4.00e0	2.70e1	1.00e1	2.30e1
2016011-041	Mud	2.27	2.32	174161	0.00e0	1.13e2	8.50e1	0.00e0	5.50e1	2.22e2	7.10e1	1.60e2	3.48e2	1.99e2	1.27e2	9.45e2	2.36e2	3.70e3	2.31e2	1.76e3
2016011-021	Mud	2.30	2.35	174093	0.00e0	1.40e1	7.60e1	5.00e0	2.40e1	1.40e2	3.00e1	5.60e1	3.40e1	3.80e1	2.50e1	1.00e1	3.40e1	5.70e1	2.60e1	7.90e1

Table 12. continued, GC of EOM fractions (peak area)

Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	n-C19	n-C20	n-C21	n-C22	n-C23	n-C24	n-C25	n-C26	n-C27	n-C28	n-C29	n-C30	n-C31	n-C32	n-C33	n-C34
2018041-006	Mud	1.32	1.37	200064	1.11e2	1.19e2	1.20e2	1.00e2	1.35e2	8.60e1	2.19e2	9.70e1	2.15e2	7.90e1	3.08e2	9.90e1	2.93e2	1.24e2	1.53e2	3.00e1
2018041-006	Mud	2.86	2.91	200065	2.09e2	1.80e2	1.84e2	1.48e2	1.83e2	1.22e2	2.70e2	1.22e2	2.69e2	1.04e2	3.16e2	1.01e2	3.28e2	1.27e2	1.67e2	4.30e1
2018041-006	Mud	3.83	3.88	200066	1.54e2	1.40e2	1.54e2	1.15e2	1.51e2	1.03e2	2.59e2	1.08e2	2.87e2	1.06e2	3.89e2	1.12e2	4.73e2	1.57e2	2.53e2	5.60e1
2018041-007	Mud	0.38	0.43	200067	7.39e2	5.78e2	4.94e2	3.63e2	4.12e2	2.64e2	5.18e2	2.34e2	5.18e2	1.80e2	6.23e2	1.54e2	7.50e2	2.38e2	3.32e2	5.90e1
2018041-007	Mud	0.34	0.38	200068	3.30e2	2.44e2	2.02e2	1.40e2	1.45e2	9.70e1	1.67e2	8.10e1	1.70e2	6.90e1	2.06e2	6.10e1	2.05e2	1.01e2	1.01e2	3.10e1
2018041-007	Mud	0.32	0.34	200069	4.46e2	3.64e2	2.95e2	2.00e2	1.92e2	1.16e2	1.69e2	7.80e1	1.86e2	7.00e1	2.16e2	6.00e1	1.97e2	9.20e1	9.40e1	0.00e0
2018041-013	Mud	1.95	2.00	200071	4.60e1	5.80e1	5.40e1	4.30e1	7.20e1	4.10e1	1.12e2	6.20e1	1.08e2	4.40e1	1.91e2	5.80e1	1.71e2	1.00e2	7.40e1	2.00e1
2018041-013	Mud	4.26	4.31	200072	3.40e1	5.90e1	6.50e1	4.20e1	7.40e1	4.70e1	1.16e2	5.80e1	1.30e2	5.60e1	2.20e2	6.30e1	1.84e2	9.00e1	1.06e2	2.30e1
2018041-013	Mud	3.09	3.14	200073	1.18e2	1.14e2	1.09e2	9.00e1	1.02e2	7.40e1	1.55e2	8.20e1	1.38e2	7.70e1	1.93e2	6.80e1	1.78e2	1.11e2	8.90e1	2.70e1
2018041-013	Mud	4.62	4.67	200074	4.70e1	5.50e1	5.70e1	4.50e1	6.40e1	4.20e1	9.20e1	4.50e1	1.05e2	4.30e1	1.53e2	4.60e1	1.39e2	5.20e1	7.70e1	2.50e1
2018041-013	Mud	5.28	5.33	200075	1.55e2	1.56e2	1.65e2	1.28e2	1.76e2	1.12e2	2.54e2	1.32e2	2.64e2	1.19e2	3.99e2	1.19e2	3.74e2	1.74e2	1.94e2	0.00e0
2018041-014	Mud	4.19	4.27	200077	6.00e1	7.20e1	8.90e1	6.80e1	1.00e2	6.50e1	1.53e2	7.70e1	1.66e2	7.20e1	2.56e2	7.70e1	2.36e2	1.00e2	1.29e2	4.50e1
2018041-014	Mud	4.33	4.38	200078	1.70e2	7.70e1	1.00e2	7.80e1	1.17e2	7.60e1	1.75e2	8.90e1	1.99e2	8.20e1	2.91e2	8.10e1	2.52e2	9.60e1	1.38e2	4.00e1
2018041-014	Mud	4.88	4.93	200079	1.14e2	1.02e2	1.19e2	9.00e1	1.25e2	7.80e1	2.00e2	9.20e1	2.06e2	9.80e1	2.99e2	9.50e1	2.83e2	1.31e2	1.56e2	0.00e0
2018041-015	Mud	2.85	2.90	200081	3.30e1	4.50e1	5.50e1	4.20e1	6.10e1	3.90e1	8.80e1	4.10e1	1.15e2	4.70e1	1.97e2	5.50e1	1.66e2	5.90e1	8.70e1	2.10e1
2018041-015	Mud	3.28	3.33	200082	7.90e1	8.80e1	1.04e2	8.00e1	1.15e2	7.50e1	1.96e2	8.30e1	2.04e2	8.40e1	3.17e2	8.90e1	2.72e2	1.10e2	1.52e2	4.60e1
2018041-015	Mud	4.66	4.71	200083	2.72e2	2.50e2	2.52e2	2.10e2	2.40e2	1.68e2	3.07e2	1.64e2	2.54e2	1.25e2	3.16e2	1.13e2	2.42e2	1.40e2	1.32e2	6.80e1
2018041-017	Mud	1.26	1.31	200085	4.30e1	6.00e1	5.10e1	4.00e1	5.20e1	3.60e1	7.90e1	3.90e1	8.40e1	3.40e1	1.30e2	4.10e1	1.06e2	5.40e1	5.20e1	1.70e1
2018041-017	Mud	3.32	3.37	200086	6.20e1	6.60e1	8.60e1	7.00e1	1.09e2	7.00e1	1.88e2	7.80e1	2.02e2	7.80e1	2.86e2	8.10e1	2.54e2	8.40e1	1.34e2	3.20e1
2018041-017	Mud	4.01	4.06	200087	1.79e2	1.68e2	1.68e2	1.37e2	1.56e2	1.09e2	2.08e2	9.80e1	1.67e2	8.10e1	2.08e2	7.40e1	1.64e2	8.50e1	9.10e1	4.10e1
2018041-017	Mud	5.49	5.54	200088	1.80e2	1.71e2	1.79e2	1.47e2	1.88e2	1.26e2	2.81e2	1.21e2	2.38e2	1.01e2	3.21e2	9.80e1	2.53e2	1.31e2	1.35e2	6.00e1
2018041-019	Mud	2.19	2.24	200090	1.01e2	1.06e2	1.08e2	8.60e1	1.03e2	7.30e1	1.37e2	7.50e1	1.31e2	6.10e1	1.84e2	6.00e1	1.48e2	7.90e1	8.10e1	2.30e1
2018041-019	Mud	2.94	2.99	200091	5.60e1	6.80e1	7.30e1	4.80e1	8.50e1	5.40e1	1.33e2	6.50e1	1.65e2	6.80e1	2.57e2	7.50e1	2.26e2	8.30e1	1.25e2	2.60e1
2018041-019	Mud	3.34	3.39	200092	7.00e1	8.10e1	1.06e2	8.00e1	1.21e2	7.90e1	1.98e2	8.90e1	2.20e2	8.50e1	3.17e2	9.00e1	2.82e2	9.50e1	1.50e2	3.60e1
2018041-019	Mud	5.49	5.56	200093	2.02e2	1.93e2	2.02e2	1.70e2	2.16e2	1.46e2	2.95e2	1.36e2	2.61e2	1.19e2	3.35e2	1.02e2	2.63e2	1.27e2	1.34e2	5.70e1
2018041-021	Mud	3.17	3.22	200095	1.34e2	1.36e2	1.64e2	1.47e2	2.02e2	1.36e2	3.08e2	1.51e2	2.77e2	1.48e2	3.43e2	1.22e2	2.73e2	1.30e2	1.44e2	6.80e1
2018041-021	Mud	2.17	2.22	200096	6.10e2	1.05e2	1.08e2	8.30e1	1.21e2	7.50e1	1.96e2	8.30e1	1.89e2	7.30e1	2.97e2	8.60e1	2.35e2	1.03e2	1.30e2	3.30e1
2018041-021	Mud	4.51	4.56	200097	5.00e2	4.34e2	4.26e2	3.64e2	3.87e2	2.87e2	4.43e2	2.70e2	3.65e2	2.07e2	3.99e2	1.84e2	3.02e2	2.31e2	1.58e2	1.06e2
2018041-021	Mud	6.72	6.77	200098	1.19e3	5.16e2	4.66e2	4.02e2	3.84e2	2.99e2	4.44e2	2.74e2	3.10e2	2.11e2	3.47e2	1.84e2	2.66e2	3.05e2	1.92e2	1.19e2
2018041-022	Mud	2.73	2.78	200100	7.02e2	7.00e1	7.10e1	6.10e1	7.70e1	5.00e1	1.12e2	5.10e1	1.07e2	4.00e1	1.46e2	4.40e1	1.19e2	5.20e1	6.40e1	1.90e1
2018041-022	Mud	3.65	3.70	200101	1.47e2	1.45e2	1.52e2	1.25e2	1.62e2	1.10e2	2.40e2	1.12e2	2.25e2	1.09e2	3.54e2	1.03e2	2.56e2	1.54e2	1.38e2	6.80e1

Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	n-C19	n-C20	n-C21	n-C22	n-C23	n-C24	n-C25	n-C26	n-C27	n-C28	n-C29	n-C30	n-C31	n-C32	n-C33	n-C34
2018041-022	Mud	4.14	4.19	200102	1.57e2	1.53e2	1.52e2	1.28e2	1.53e2	1.10e2	2.17e2	1.10e2	1.96e2	9.20e1	2.62e2	9.00e1	2.18e2	1.20e2	1.21e2	5.70e1
2018041-023	Mud	1.30	1.35	200104	6.09e2	8.30e1	8.00e1	6.00e1	1.06e2	6.00e1	1.77e2	9.00e1	1.93e2	8.80e1	3.07e2	7.50e1	2.68e2	1.37e2	1.40e2	3.50e1
2018041-023	Mud	2.72	2.77	200105	1.03e2	1.29e2	1.60e2	1.25e2	1.98e2	1.27e2	2.93e2	1.48e2	3.63e2	1.56e2	5.15e2	1.65e2	4.73e2	1.79e2	2.63e2	6.10e1
2018041-023	Mud	2.86	2.91	200106	8.10e1	1.08e2	1.43e2	1.17e2	1.93e2	1.21e2	2.79e2	1.51e2	3.33e2	1.46e2	4.72e2	1.47e2	4.04e2	1.53e2	1.99e2	6.10e1
Blank Extraction	Blank			201900	0.00e0	0.00e0	7.00e0	7.00e0	4.00e0	1.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	1.00e0	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	1.30e1	1.30e1	1.60e1	1.50e1	2.40e1	2.00e1	3.90e1	2.00e1	4.70e1	1.80e1	5.40e1	1.70e1	4.50e1	1.90e1	2.20e1	9.00e0
2016011-041	Mud	2.27	2.32	174161	3.31e2	2.54e2	1.85e2	1.34e2	1.48e2	1.43e2	1.75e2	8.80e1	1.51e2	7.80e1	1.47e2	7.60e1	1.10e2	5.00e1	6.40e1	5.50e1
2016011-021	Mud	2.30	2.35	174093	2.40e1	2.70e1	3.20e1	2.90e1	4.40e1	3.10e1	5.00e1	3.00e1	6.10e1	2.60e1	7.60e1	2.60e1	6.50e1	2.20e1	3.40e1	1.80e1

Table 12. continued, GC of EOM fractions (peak area)

Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	n-C35	n-C36	n-C37	n-C38	n-C39	n-C40	n-C41	n-C42	UCM_C16-C27
2018041-006	Mud	1.32	1.37	200064	5.10e1	2.60e1	2.40e1	1.90e1	9.00e0	8.00e0	0.00e0	0.00e0	0.00e0
2018041-006	Mud	2.86	2.91	200065	5.30e1	2.50e1	2.60e1	3.70e1	8.00e0	1.30e1	0.00e0	0.00e0	0.00e0
2018041-006	Mud	3.83	3.88	200066	6.60e1	2.80e1	3.60e1	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2018041-007	Mud	0.38	0.43	200067	1.03e2	4.00e1	3.50e1	5.10e1	1.80e1	2.00e1	8.00e0	0.00e0	0.00e0
2018041-007	Mud	0.34	0.38	200068	4.00e1	1.70e1	1.90e1	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2018041-007	Mud	0.32	0.34	200069	4.20e1	2.10e1	1.80e1	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2018041-013	Mud	1.95	2.00	200071	3.00e1	1.80e1	9.00e0	1.70e1	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2018041-013	Mud	4.26	4.31	200072	2.30e1	1.50e1	1.60e1	1.30e1	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2018041-013	Mud	3.09	3.14	200073	3.40e1	2.30e1	1.40e1	2.00e1	9.00e0	8.00e0	0.00e0	0.00e0	0.00e0
2018041-013	Mud	4.62	4.67	200074	2.00e1	9.00e0	1.20e1	1.70e1	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2018041-013	Mud	5.28	5.33	200075	5.50e1	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2018041-014	Mud	4.19	4.27	200077	3.00e1	1.90e1	2.10e1	2.20e1	6.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2018041-014	Mud	4.33	4.38	200078	3.30e1	1.40e1	2.10e1	2.40e1	5.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2018041-014	Mud	4.88	4.93	200079	3.40e1	1.90e1	2.10e1	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2018041-015	Mud	2.85	2.90	200081	2.10e1	9.00e0	1.30e1	1.90e1	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2018041-015	Mud	3.28	3.33	200082	4.10e1	1.60e1	1.60e1	2.10e1	8.00e0	6.00e0	0.00e0	0.00e0	0.00e0
2018041-015	Mud	4.66	4.71	200083	4.90e1	2.80e1	2.60e1	3.70e1	1.30e1	1.50e1	1.40e1	9.00e0	0.00e0
2018041-017	Mud	1.26	1.31	200085	1.70e1	8.00e0	8.00e0	2.30e1	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2018041-017	Mud	3.32	3.37	200086	3.50e1	1.30e1	2.10e1	2.00e1	6.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2018041-017	Mud	4.01	4.06	200087	3.40e1	1.80e1	1.60e1	2.90e1	9.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2018041-017	Mud	5.49	5.54	200088	4.60e1	2.20e1	2.50e1	3.30e1	1.10e1	1.30e1	0.00e0	0.00e0	0.00e0
2018041-019	Mud	2.19	2.24	200090	3.00e1	1.60e1	1.40e1	1.80e1	7.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2018041-019	Mud	2.94	2.99	200091	3.40e1	1.20e1	1.80e1	1.40e1	7.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2018041-019	Mud	3.34	3.39	200092	4.40e1	1.30e1	2.30e1	2.20e1	7.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2018041-019	Mud	5.49	5.56	200093	5.10e1	2.10e1	2.00e1	1.90e1	1.30e1	9.00e0	0.00e0	0.00e0	0.00e0
2018041-021	Mud	3.17	3.22	200095	4.50e1	2.40e1	2.30e1	5.00e1	1.30e1	1.00e1	0.00e0	0.00e0	0.00e0
2018041-021	Mud	2.17	2.22	200096	4.30e1	1.80e1	1.50e1	3.80e1	7.00e0	7.00e0	0.00e0	0.00e0	0.00e0
2018041-021	Mud	4.51	4.56	200097	8.20e1	5.00e1	4.00e1	5.50e1	2.40e1	1.90e1	0.00e0	0.00e0	0.00e0
2018041-021	Mud	6.72	6.77	200098	8.30e1	5.70e1	5.10e1	5.90e1	1.20e1	2.20e1	0.00e0	0.00e0	0.00e0
2018041-022	Mud	2.73	2.78	200100	1.90e1	7.00e0	1.00e1	2.20e1	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2018041-022	Mud	3.65	3.70	200101	5.30e1	2.40e1	2.00e1	2.50e1	1.60e1	1.00e1	0.00e0	0.00e0	0.00e0

Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	n-C35	n-C36	n-C37	n-C38	n-C39	n-C40	n-C41	n-C42	UCM_C16-C27
2018041-022	Mud	4.14	4.19	200102	3.90e1	2.10e1	2.70e1	4.50e1	2.00e1	1.50e1	9.00e0	8.00e0	0.00e0
2018041-023	Mud	1.30	1.35	200104	3.70e1	1.40e1	1.60e1	3.10e1	1.40e1	1.00e1	0.00e0	0.00e0	0.00e0
2018041-023	Mud	2.72	2.77	200105	5.90e1	2.40e1	3.40e1	4.10e1	8.00e0	1.20e1	0.00e0	0.00e0	0.00e0
2018041-023	Mud	2.86	2.91	200106	6.30e1	2.90e1	3.60e1	3.50e1	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
Blank Extraction	Blank			201900	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	1.10e1	2.00e0	6.00e0	4.00e0	4.00e0	0.00e0	0.00e0	0.00e0	4.41e2
2016011-041	Mud	2.27	2.32	174161	3.40e1	1.80e1	1.50e1	1.00e1	1.40e1	6.00e0	5.00e0	4.00e0	2.99e4
2016011-021	Mud	2.30	2.35	174093	1.30e1	5.00e0	3.00e0	1.20e1	0.00e0	0.00e0	0.00e0	0.00e0	1.03e3

Table 13. GCMS SIR of saturated compounds (peak height)

				m/z	177				191											
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	25nor28αβ	25nor29αβ	25nor30αβ	25nor31αβR	19/3	20/3	21/3	22/3	23/3	24/3	25/3R	25/3S	24/4	26/3R	26/3S	28/3R
2018041-007	Mud	0.38	0.43	200067	3.37e2	2.56e3	1.78e3	1.70e3	1.05e3	1.57e3	1.54e3	3.36e2	1.93e3	1.20e3	5.37e2	4.98e2	1.37e3	5.73e2	5.41e2	4.17e2
2018041-007	Mud	0.34	0.38	200068	1.57e2	1.76e3	9.70e2	8.53e2	9.29e2	1.16e3	9.33e2	2.55e2	1.05e3	6.74e2	3.51e2	2.82e2	7.23e2	2.84e2	2.94e2	1.88e2
2018041-007	Mud	0.32	0.34	200069	1.87e2	4.01e3	2.41e3	1.88e3	1.76e3	1.86e3	1.77e3	3.11e2	1.94e3	1.41e3	6.15e2	4.88e2	1.65e3	5.18e2	5.11e2	3.88e2
2018041-014	Mud	4.88	4.93	200079	7.50e1	6.40e1	1.86e2	4.47e2	1.07e2	1.73e2	2.43e2	7.80e1	3.08e2	1.85e2	1.05e2	1.00e2	2.30e2	1.29e2	1.19e2	6.60e1
2018041-015	Mud	4.66	4.71	200083	1.40e2	9.40e1	1.37e2	7.66e2	2.44e2	5.15e2	8.28e2	1.94e2	8.76e2	5.36e2	2.57e2	2.41e2	4.83e2	2.77e2	3.12e2	2.22e2
2018041-017	Mud	4.01	4.06	200087	1.82e2	1.25e2	2.43e2	9.55e2	2.69e2	5.88e2	9.69e2	2.04e2	1.23e3	6.49e2	2.87e2	2.77e2	6.09e2	2.95e2	3.69e2	2.77e2
2018041-019	Mud	5.49	5.56	200093	2.57e2	1.37e2	3.59e2	1.22e3	3.10e2	7.42e2	1.16e3	2.64e2	1.40e3	8.25e2	3.80e2	3.63e2	8.52e2	4.62e2	4.80e2	3.84e2
2018041-021	Mud	4.51	4.56	200097	5.78e2	2.33e2	1.86e2	1.57e3	5.19e2	9.28e2	1.59e3	3.56e2	1.98e3	1.02e3	5.55e2	4.90e2	1.32e3	6.41e2	6.87e2	5.09e2
2018041-021	Mud	6.72	6.77	200098	5.78e2	3.28e2	1.71e2	1.67e3	5.31e2	9.20e2	1.57e3	3.65e2	2.02e3	9.96e2	5.82e2	4.65e2	1.25e3	6.24e2	6.81e2	5.26e2
Blank Extraction	Blank			201900	0.00e0	3.90e1	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	2.76e3	2.19e4	1.18e4	1.69e4	1.02e4	7.34e3	1.13e4	7.01e3	7.84e4	2.70e4	1.38e4	1.47e4	3.07e4	1.07e4	1.01e4	2.38e4
2016011-041	Mud	2.27	2.32	174161	1.23e4	2.32e5	1.50e5	1.32e5	1.04e6	5.09e5	4.98e5	1.17e5	5.45e5	3.62e5	1.35e5	1.48e5	1.98e5	1.10e5	1.12e5	1.37e5
2016011-021	Mud	2.30	2.35	174093	2.58e3	7.64e4	3.30e4	2.99e4	2.87e4	2.73e4	3.59e4	1.39e4	7.81e4	3.17e4	1.32e4	1.25e4	3.56e4	8.41e3	9.70e3	2.67e4

Table 13. continued, GCMS SIR of saturated compounds (peak height)

				m/z	191															
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	28/3S	29/3R	29/3S	27Ts	27Tm	30/3R	30/3S	28αβ	25nor30αβ	29αβ	29Ts	30d	29βα	30O	30αβ	30βα
2018041-007	Mud	0.38	0.43	200067	3.95e2	4.90e2	3.52e2	3.26e3	5.52e3	3.15e2	8.26e2	6.14e2	2.23e3	1.16e4	3.91e3	1.19e3	5.40e3	1.02e3	1.93e4	5.24e3
2018041-007	Mud	0.34	0.38	200068	1.54e2	1.74e2	1.63e2	1.74e3	2.67e3	1.88e2	4.77e2	3.94e2	1.21e3	5.53e3	2.01e3	5.65e2	2.81e3	5.42e2	9.59e3	2.47e3
2018041-007	Mud	0.32	0.34	200069	2.84e2	3.34e2	3.23e2	3.95e3	5.06e3	3.13e2	1.07e3	6.80e2	2.87e3	1.06e4	3.74e3	1.26e3	4.77e3	1.52e3	1.91e4	4.70e3
2018041-014	Mud	4.88	4.93	200079	7.90e1	8.20e1	5.60e1	4.51e2	1.44e3	1.00e2	8.90e1	3.89e2	1.90e2	2.76e3	9.41e2	2.32e2	3.46e3	0.00e0	5.26e3	2.25e3
2018041-015	Mud	4.66	4.71	200083	2.02e2	1.97e2	1.44e2	1.09e3	2.51e3	1.50e2	1.60e2	2.44e2	1.23e2	4.66e3	1.47e3	5.34e2	2.60e3	0.00e0	8.65e3	2.42e3
2018041-017	Mud	4.01	4.06	200087	2.17e2	2.01e2	1.62e2	1.28e3	3.66e3	2.22e2	2.02e2	4.31e2	2.59e2	6.54e3	1.87e3	7.00e2	3.80e3	0.00e0	1.16e4	3.69e3
2018041-019	Mud	5.49	5.56	200093	2.89e2	3.02e2	3.24e2	1.67e3	3.99e3	2.80e2	2.62e2	5.15e2	3.90e2	7.46e3	2.38e3	8.04e2	5.40e3	0.00e0	1.42e4	4.03e3
2018041-021	Mud	4.51	4.56	200097	5.18e2	4.47e2	3.70e2	3.04e3	4.68e3	4.08e2	4.09e2	6.39e2	1.31e2	1.02e4	4.01e3	1.21e3	3.90e3	0.00e0	1.91e4	4.28e3
2018041-021	Mud	6.72	6.77	200098	5.17e2	3.87e2	3.64e2	3.09e3	4.35e3	4.09e2	4.95e2	6.87e2	2.03e2	9.96e3	3.98e3	1.21e3	3.58e3	0.00e0	2.02e4	4.14e3
Blank Extraction	Blank			201900	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	8.90e1	0.00e0	0.00e0	0.00e0	0.00e0	8.10e1	6.20e1
2015018-0009	Mud	2.00	2.06	174218	6.43e3	2.15e4	1.12e4	4.72e4	1.23e5	4.17e3	0.00e0	1.95e4	1.81e4	2.29e5	5.96e4	1.20e4	1.85e5	0.00e0	4.06e5	1.06e5
2016011-041	Mud	2.27	2.32	174161	6.09e4	6.37e4	6.45e4	3.54e5	6.13e5	3.97e4	4.21e4	8.88e4	1.91e5	1.21e6	3.91e5	1.24e5	5.65e5	0.00e0	1.96e6	4.74e5
2016011-021	Mud	2.30	2.35	174093	6.53e3	8.08e3	1.83e4	8.39e4	1.58e5	5.56e3	3.04e4	2.43e4	4.64e4	3.03e5	8.92e4	1.88e4	2.46e5	0.00e0	5.76e5	1.38e5

Table 13. continued, GCMS SIR of saturated compounds (peak height)

				m/z	191												217			
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	31αβS	31αβR	30G	31βα	32αβS	32αβR	33αβS	33αβR	34αβS	34αβR	35αβS	35αβR	21αα	21ββ	22αα	22ββ
2018041-007	Mud	0.38	0.43	200067	5.62e3	1.30e4	1.48e3	2.41e3	3.03e3	2.61e3	1.64e3	1.17e3	1.09e3	8.57e2	6.87e2	5.78e2	5.56e2	9.18e2	4.70e2	4.04e2
2018041-007	Mud	0.34	0.38	200068	2.68e3	7.24e3	6.27e2	1.21e3	1.49e3	1.30e3	8.54e2	6.55e2	5.25e2	4.20e2	3.78e2	2.81e2	3.74e2	5.50e2	2.71e2	3.00e2
2018041-007	Mud	0.32	0.34	200069	5.08e3	1.17e4	1.04e3	1.90e3	2.84e3	2.32e3	1.47e3	1.04e3	8.79e2	6.49e2	5.36e2	4.46e2	7.29e2	7.81e2	4.48e2	4.28e2
2018041-014	Mud	4.88	4.93	200079	1.76e3	1.27e4	3.63e2	1.58e3	7.41e2	8.80e2	4.37e2	3.97e2	3.30e2	2.68e2	1.96e2	1.70e2	1.15e2	1.40e2	8.90e1	7.00e1
2018041-015	Mud	4.66	4.71	200083	3.14e3	6.87e3	7.53e2	1.24e3	1.75e3	1.50e3	1.00e3	7.42e2	6.88e2	5.90e2	3.94e2	2.77e2	2.88e2	4.04e2	1.70e2	1.67e2
2018041-017	Mud	4.01	4.06	200087	3.85e3	1.04e4	8.73e2	1.93e3	2.20e3	1.86e3	1.29e3	9.73e2	8.85e2	6.64e2	4.42e2	2.34e2	3.37e2	4.38e2	1.78e2	2.41e2
2018041-019	Mud	5.49	5.56	200093	4.97e3	1.44e4	9.84e2	2.46e3	2.53e3	1.85e3	1.34e3	1.12e3	9.56e2	6.80e2	4.12e2	3.87e2	3.87e2	5.45e2	2.34e2	2.97e2
2018041-021	Mud	4.51	4.56	200097	7.74e3	1.02e4	1.40e3	2.35e3	4.60e3	3.85e3	2.62e3	2.05e3	1.96e3	1.43e3	9.07e2	7.21e2	7.79e2	9.88e2	4.20e2	5.24e2
2018041-021	Mud	6.72	6.77	200098	7.99e3	8.75e3	1.47e3	2.40e3	5.18e3	4.11e3	3.04e3	2.32e3	2.02e3	1.57e3	9.43e2	8.00e2	7.95e2	1.04e3	4.98e2	4.92e2
Blank Extraction	Blank			201900	0.00e0	5.50e1	0.00e0	0.00e0	6.30e1	0.00e0	5.40e1	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	1.06e5	5.54e5	1.55e4	6.27e4	4.06e4	4.01e4	2.50e4	1.89e4	1.52e4	9.35e3	1.15e4	7.06e3	3.33e3	7.38e3	2.78e3	3.95e3
2016011-041	Mud	2.27	2.32	174161	6.05e5	1.25e6	1.32e5	2.34e5	2.83e5	2.32e5	1.45e5	1.01e5	8.56e4	5.95e4	4.54e4	3.28e4	2.72e5	2.61e5	1.65e5	8.69e4
2016011-021	Mud	2.30	2.35	174093	1.41e5	6.06e5	1.81e4	8.87e4	5.26e4	5.40e4	2.99e4	2.30e4	2.00e4	1.30e4	1.14e4	7.37e3	3.19e4	3.31e4	2.03e4	1.23e4

Table 13. continued, GCMS SIR of saturated compounds (peak height)

				m/z	217															
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	27dβS	27dβR	27daR	27daS	28dβS#1	28dβS#2	28dβR#1	28dβR#2	28daR	27ααS	27ββR+29dβS	27ββS	28daS	27ααR	29dβR	29daR
2018041-007	Mud	0.38	0.43	200067	1.27e3	7.78e2	3.44e2	4.58e2	5.76e2	5.43e2	3.80e2	4.71e2	2.44e2	8.00e2	1.32e3	5.95e2	2.08e2	1.64e3	8.47e2	5.44e2
2018041-007	Mud	0.34	0.38	200068	6.85e2	4.89e2	1.72e2	2.29e2	2.98e2	3.21e2	2.02e2	2.20e2	1.35e2	3.02e2	5.75e2	2.70e2	0.00e0	7.09e2	4.46e2	2.78e2
2018041-007	Mud	0.32	0.34	200069	1.43e3	8.04e2	3.93e2	4.09e2	6.04e2	5.90e2	3.36e2	4.59e2	3.09e2	6.47e2	1.20e3	5.91e2	2.25e2	1.30e3	8.59e2	5.51e2
2018041-014	Mud	4.88	4.93	200079	1.80e2	1.48e2	9.10e1	1.18e2	9.70e1	9.80e1	0.00e0	1.08e2	3.70e1	1.72e2	2.76e2	1.21e2	5.80e1	6.35e2	1.99e2	1.30e2
2018041-015	Mud	4.66	4.71	200083	4.86e2	3.19e2	1.43e2	1.95e2	2.02e2	2.03e2	9.40e1	2.46e2	8.80e1	3.97e2	6.59e2	2.75e2	0.00e0	1.00e3	4.31e2	2.29e2
2018041-017	Mud	4.01	4.06	200087	6.17e2	4.08e2	1.94e2	2.23e2	1.91e2	2.64e2	1.52e2	2.93e2	1.17e2	5.28e2	7.68e2	3.48e2	9.80e1	1.31e3	5.34e2	3.09e2
2018041-019	Mud	5.49	5.56	200093	7.67e2	4.74e2	2.50e2	3.02e2	3.06e2	3.39e2	1.70e2	3.14e2	1.71e2	7.17e2	1.19e3	4.88e2	1.54e2	1.66e3	6.87e2	3.28e2
2018041-021	Mud	4.51	4.56	200097	1.41e3	7.80e2	4.62e2	4.81e2	4.54e2	4.98e2	2.36e2	5.53e2	2.22e2	1.11e3	1.94e3	8.05e2	2.01e2	2.31e3	1.03e3	6.24e2
2018041-021	Mud	6.72	6.77	200098	1.66e3	9.88e2	4.20e2	5.47e2	4.80e2	5.04e2	2.76e2	5.54e2	1.64e2	1.19e3	1.85e3	8.41e2	1.85e2	2.37e3	1.16e3	6.44e2
Blank Extraction	Blank			201900	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	5.10e1	3.00e1	0.00e0	3.40e1	8.00e1	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	1.96e4	1.23e4	4.41e3	5.47e3	7.95e3	6.88e3	3.46e3	5.00e3	3.20e3	7.92e3	1.66e4	6.20e3	1.55e3	1.41e4	9.23e3	4.82e3
2016011-041	Mud	2.27	2.32	174161	2.45e5	1.37e5	4.61e4	5.86e4	7.64e4	7.37e4	4.01e4	6.18e4	2.79e4	9.05e4	1.58e5	5.32e4	1.63e4	1.65e5	9.67e4	4.15e4
2016011-021	Mud	2.30	2.35	174093	3.90e4	2.12e4	6.81e3	8.11e3	1.21e4	1.14e4	5.21e3	7.75e3	5.55e3	1.00e4	2.19e4	7.01e3	3.50e3	1.63e4	1.50e4	7.33e3

Table 13. continued, GCMS SIR of saturated compounds (peak height)

				m/z	217													218		
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	28ααS	29daS	28ββR	28ββS	28ααR	29ααS	29ββR	29ββS	29ααR	30ααS	30ββR	30ββS	30ααR	27ββR	27ββS	28ββR
2018041-007	Mud	0.38	0.43	200067	3.38e2	4.42e2	5.74e2	7.05e2	8.11e2	1.66e3	1.25e3	1.10e3	2.62e3	2.49e2	1.25e2	6.80e1	1.41e2	1.23e3	9.97e2	8.46e2
2018041-007	Mud	0.34	0.38	200068	1.76e2	2.33e2	2.99e2	3.41e2	3.73e2	6.59e2	5.70e2	4.89e2	1.10e3	1.74e2	1.05e2	8.80e1	8.40e1	5.70e2	4.83e2	3.75e2
2018041-007	Mud	0.32	0.34	200069	2.93e2	4.22e2	6.17e2	6.36e2	6.75e2	1.20e3	1.07e3	8.16e2	1.72e3	3.86e2	1.32e2	8.40e1	9.50e1	1.25e3	7.88e2	7.64e2
2018041-014	Mud	4.88	4.93	200079	7.80e1	1.28e2	1.45e2	1.31e2	1.84e2	4.07e2	3.00e2	2.35e2	7.40e2	5.20e1	3.20e1	3.70e1	5.20e1	2.73e2	1.74e2	1.23e2
2018041-015	Mud	4.66	4.71	200083	1.49e2	2.76e2	2.63e2	3.07e2	4.64e2	8.98e2	7.66e2	6.33e2	1.79e3	1.10e2	6.20e1	0.00e0	5.70e1	6.11e2	4.75e2	3.73e2
2018041-017	Mud	4.01	4.06	200087	1.92e2	2.96e2	3.22e2	3.54e2	5.06e2	1.22e3	8.39e2	8.15e2	1.89e3	2.43e2	8.00e1	0.00e0	1.08e2	6.51e2	5.70e2	4.56e2
2018041-019	Mud	5.49	5.56	200093	2.32e2	3.79e2	4.28e2	5.12e2	7.05e2	1.58e3	1.07e3	9.01e2	2.49e3	2.59e2	9.20e1	0.00e0	6.20e1	9.77e2	8.09e2	5.18e2
2018041-021	Mud	4.51	4.56	200097	3.72e2	6.27e2	6.23e2	6.73e2	9.11e2	2.87e3	1.80e3	1.60e3	3.78e3	3.34e2	1.25e2	8.30e1	8.70e1	1.63e3	1.33e3	7.44e2
2018041-021	Mud	6.72	6.77	200098	3.97e2	8.45e2	6.64e2	6.60e2	8.65e2	3.03e3	1.92e3	1.79e3	3.83e3	3.62e2	7.50e1	0.00e0	8.00e1	1.82e3	1.28e3	6.25e2
Blank Extraction	Blank			201900	0.00e0	0.00e0	0.00e0	0.00e0	4.60e1	0.00e0	0.00e0	0.00e0	4.50e1	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	2.46e3	4.04e3	4.37e3	5.08e3	4.25e3	8.37e3	8.61e3	8.02e3	2.14e4	2.80e3	0.00e0	0.00e0	0.00e0	1.50e4	1.05e4	5.67e3
2016011-041	Mud	2.27	2.32	174161	2.61e4	5.12e4	4.57e4	5.90e4	6.47e4	1.06e5	1.03e5	8.17e4	1.74e5	3.64e4	6.67e3	0.00e0	7.93e3	1.38e5	9.75e4	6.84e4
2016011-021	Mud	2.30	2.35	174093	5.38e3	8.93e3	7.39e3	8.85e3	7.31e3	1.06e4	1.13e4	8.76e3	1.96e4	4.00e3	1.28e3	0.00e0	1.47e3	1.97e4	1.46e4	9.44e3

Table 13. continued, GCMS SIR of saturated compounds (peak height)

				m/z	218				
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	28ββS	29ββR	29ββS	30ββR	30ββS
2018041-007	Mud	0.38	0.43	200067	9.47e2	2.00e3	1.76e3	1.34e2	0.00e0
2018041-007	Mud	0.34	0.38	200068	5.39e2	8.32e2	9.29e2	9.40e1	6.70e1
2018041-007	Mud	0.32	0.34	200069	7.87e2	1.53e3	1.53e3	2.19e2	9.40e1
2018041-014	Mud	4.88	4.93	200079	1.92e2	4.52e2	4.07e2	8.80e1	7.60e1
2018041-015	Mud	4.66	4.71	200083	4.48e2	1.08e3	1.04e3	8.70e1	0.00e0
2018041-017	Mud	4.01	4.06	200087	5.19e2	1.30e3	1.31e3	9.80e1	0.00e0
2018041-019	Mud	5.49	5.56	200093	5.79e2	1.66e3	1.58e3	1.11e2	0.00e0
2018041-021	Mud	4.51	4.56	200097	8.44e2	2.55e3	2.57e3	1.43e2	9.00e1
2018041-021	Mud	6.72	6.77	200098	8.57e2	2.85e3	2.87e3	1.44e2	0.00e0
Blank Extraction	Blank			201900	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	7.13e3	1.38e4	1.20e4	0.00e0	0.00e0
2016011-041	Mud	2.27	2.32	174161	9.20e4	1.84e5	1.48e5	5.19e3	0.00e0
2016011-021	Mud	2.30	2.35	174093	1.21e4	2.03e4	1.88e4	0.00e0	0.00e0

Abbreviations of saturated biomarkers

17α(H), 21β(H)-25,28,30-trisnorhopane	25nor28αβ
17α, 21β-25,30-bisnorhopane	25nor29αβ
17α(H), 21β(H)-25-norhopane	25nor30αβ
17α, 21β, 22(R/S)-25-norhomohopane	25nor31αβ
$C_{19}H_{34}$ tricyclic terpane	19/3
$C_{20}H_{36}$ tricyclic terpane	20/3
$C_{21}H_{38}$ tricyclic terpane	21/3
$C_{23}H_{42}$ tricyclic terpane	23/3
$C_{24}H_{44}$ tricyclic terpane	24/3
$C_{25}H_{46}$ tricyclic terpane	25/3R
$C_{25}H_{46}$ tricyclic terpane	25/3S
$C_{24}H_{42}$ tetracyclic terpane	24/4
$C_{26}H_{48}$ tricyclic terpane	26/3R
$C_{26}H_{48}$ tricyclic terpane	26/3S
$C_{28}H_{52}$ tricyclic terpane	28/3R
$C_{28}H_{52}$ tricyclic terpane	28/3S
$C_{29}H_{54}$ tricyclic terpane	29/3R
$C_{29}H_{54}$ tricyclic terpane	29/3S
18α(H)-22,29,30-trisnorneohopane	27Ts
17α(H)-22,29,30-trisnorhopane	27Tm
$C_{30}H_{56}$ tricyclic terpane	30/3R
$C_{30}H_{56}$ tricyclic terpane	30/3S
17α(H), 21β(H)-28,30-bisnorhopane	28αβ
17α(H), 21β(H)-30-norhopane	29αβ
18α(H)-30-norneohopane	29Ts
15α-methyl-17α(H)-27-norhopane (diahopane)	30d
17β(H), 21α(H)-30-norhopane (normoretane)	29βα
18α(H)-oleanane	30O
17α(H), 21β(H)-hopane	30αβ
17β(H), 21α(H)-hopane (moretane)	30βα
17α(H), 21β(H), 22(S)-homohopane	31αβS
17α(H), 21β(H), 22(R)-homohopane	31αβR
Gammacerane	30G
17β(H), 21α(H)-homohopane	31βα
17α(H), 21β(H), 22(S)-bishomohopane	32αβS
17α(H), 21β(H), 22(R)-bishomohopane	32αβR
17α(H), 21β(H), 22(S)-trishomohopane	33αβS

17α(H), 21β(H), 22(R)-trishomohopane	33αβR
17α(H), 21β(H), 22(S)-tetrakishomohopane	34αβS
17α(H), 21β(H), 22(R)-tetrakishomohopane	34αβR
17α(H), 21β(H), 22(S)-pentakishomohopane	35αβS
17α(H), 21β(H), 22(R)-pentakishomohopane	35αβR
C21-5α(H), 14α(H), 17α(H)-pregnane	21αα
C21-5α(H), 14β(H), 17β(H)-pregnane	21ββ
C22-5α(H), 14α(H), 17α(H)-pregnane	22αα
C22-5α(H), 14β(H), 17β(H)-pregnane	22ββ
13β(H), 17α(H), 20(S)-cholestane (diasterane)	27dβS
13β(H), 17α(H), 20(R)-cholestane (diasterane)	27dβR
13α(H), 17β(H), 20(R)-cholestane (diasterane)	27dαR
13α(H), 17β(H), 20(S)-cholestane (diasterane)	27dαS
24-methyl-13β(H), 17α(H), 20(S)-cholestane (diasterane)	28dβS
24-methyl-13β(H), 17α(H), 20(R)-cholestane (diasterane)	28dβR
24-methyl-13α(H), 17β(H), 20(R)-cholestane (diasterane)	28dαR
5α(H), 14α(H), 17α(H), 20(S)-cholestane	27ααS
5α(H), 14β(H), 17β(H), 20(R)-cholestane	27ββR
24-ethyl-13β(H), 17α(H), 20(S)-cholestane (diasterane)	29dβS
5α(H), 14β(H), 17β(H), 20(S)-cholestane	27ββS
24-methyl-13α(H), 17β(H), 20(S)-cholestane (diasterane)	28dαS
5α(H), 14α(H), 17α(H), 20(R)-cholestane	27ααR
24-ethyl-13β(H), 17α(H), 20(R)-cholestane (diasterane)	29dβR
24-ethyl-13α(H), 17β(H), 20(R)-cholestane (diasterane)	29dαR
24-methyl-5α(H), 14α(H), 17α(H), 20(S)-cholestane	28ααS
24-ethyl-13α(H), 17β(H), 20(S)-cholestane (diasterane)	29dαS
24-methyl-5α(H), 14β(H), 17β(H), 20(R)-cholestane	28ββR
24-methyl-5α(H), 14β(H), 17β(H), 20(S)-cholestane	28ββS
24-methyl-5α(H), 14α(H), 17α(H), 20(R)-cholestane	28ααR
24-ethyl-5α(H), 14α(H), 17α(H), 20(S)-cholestane	29ααS
24-ethyl-5α(H), 14β(H), 17β(H), 20(R)-cholestane	29ββR
24-ethyl-5α(H), 14β(H), 17β(H), 20(S)-cholestane	29ββS
24-ethyl-5α(H), 14α(H), 17α(H), 20(R)-cholestane	29ααR
24-propyl-5α(H), 14α(H), 17α(H), 20(S)-cholestane	30ααS
24-propyl-5α(H), 14β(H), 17β(H), 20(R)-cholestane	30ββR
24-propyl-5α(H), 14β(H), 17β(H), 20(S)-cholestane	30ββS
24-propyl-5α(H), 14α(H), 17α(H), 20(R)-cholestane	30ααR

Table 14. GCMS SIR of saturated compounds (peak area)

				m/z	177				191											
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	25nor28αβ	25nor29αβ	25nor30αβ	25nor31αβR	19/3	20/3	21/3	22/3	23/3	24/3	25/3R	25/3S	24/4	26/3R	26/3S	28/3R
2018041-007	Mud	0.38	0.43	200067	1.88e3	1.68e4	9.93e3	9.37e3	4.91e3	7.73e3	8.26e3	2.38e3	9.47e3	6.73e3	3.03e3	2.77e3	7.48e3	3.51e3	2.95e3	2.52e3
2018041-007	Mud	0.34	0.38	200068	6.93e2	1.04e4	5.18e3	5.16e3	4.89e3	6.10e3	4.66e3	1.68e3	5.58e3	3.94e3	1.75e3	1.38e3	3.61e3	1.74e3	1.55e3	1.02e3
2018041-007	Mud	0.32	0.34	200069	8.71e2	2.39e4	1.24e4	1.08e4	8.41e3	9.31e3	9.10e3	1.36e3	9.49e3	7.63e3	2.88e3	2.43e3	7.87e3	2.74e3	2.54e3	2.11e3
2018041-014	Mud	4.88	4.93	200079	3.40e2	2.39e2	1.50e3	2.68e3	5.91e2	8.28e2	1.36e3	3.77e2	1.69e3	1.13e3	4.58e2	8.57e2	1.08e3	6.44e2	5.95e2	3.49e2
2018041-015	Mud	4.66	4.71	200083	7.72e2	5.16e2	1.35e3	4.15e3	1.65e3	2.43e3	4.67e3	1.01e3	4.57e3	2.73e3	1.45e3	1.43e3	2.75e3	1.37e3	1.78e3	1.29e3
2018041-017	Mud	4.01	4.06	200087	9.59e2	8.25e2	1.82e3	5.12e3	1.64e3	3.03e3	5.01e3	1.24e3	5.94e3	3.69e3	1.45e3	1.32e3	3.10e3	1.56e3	1.63e3	1.41e3
2018041-019	Mud	5.49	5.56	200093	1.89e3	8.28e2	2.52e3	6.52e3	1.89e3	3.54e3	6.17e3	1.56e3	7.08e3	4.35e3	2.00e3	2.02e3	4.68e3	2.66e3	2.51e3	2.04e3
2018041-021	Mud	4.51	4.56	200097	5.63e3	1.50e3	8.01e2	8.41e3	3.01e3	4.83e3	7.80e3	2.32e3	9.59e3	5.91e3	2.96e3	2.55e3	6.99e3	3.79e3	3.31e3	2.89e3
2018041-021	Mud	6.72	6.77	200098	4.75e3	2.41e3	6.97e2	9.54e3	2.97e3	4.98e3	8.61e3	2.27e3	1.09e4	6.13e3	2.76e3	3.20e3	6.98e3	3.49e3	3.98e3	3.05e3
Blank Extraction	Blank			201900	0.00e0	2.74e2	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	6.95e3	1.23e5	5.73e4	9.47e4	4.53e4	3.07e4	5.21e4	3.80e4	3.48e5	1.23e5	7.62e4	5.78e4	1.20e5	4.38e4	4.43e4	1.31e5
2016011-041	Mud	2.27	2.32	174161	3.42e4	1.45e6	6.48e5	6.92e5	5.30e6	2.56e6	2.60e6	8.36e5	2.87e6	1.82e6	7.04e5	7.31e5	9.54e5	5.99e5	5.96e5	7.95e5
2016011-021	Mud	2.30	2.35	174093	5.31e3	4.01e5	1.57e5	1.56e5	1.32e5	1.19e5	1.60e5	7.77e4	3.42e5	1.51e5	6.14e4	6.11e4	1.62e5	3.74e4	4.19e4	1.43e5

Table 14. continued, GCMS SIR of saturated compounds (peak area)

				m/z	191															
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	28/3S	29/3R	29/3S	27Ts	27Tm	30/3R	30/3S	28αβ	25nor30αβ	29αβ	29Ts	30d	29βα	30O	30αβ	30βα
2018041-007	Mud	0.38	0.43	200067	1.71e3	3.05e3	1.69e3	1.68e4	2.70e4	1.71e3	6.96e3	5.71e3	1.21e4	6.01e4	2.20e4	7.30e3	3.02e4	6.12e3	9.97e4	2.86e4
2018041-007	Mud	0.34	0.38	200068	6.67e2	9.63e2	8.86e2	8.88e3	1.40e4	1.06e3	3.05e3	2.85e3	6.85e3	2.85e4	1.09e4	3.97e3	1.55e4	3.64e3	4.91e4	1.37e4
2018041-007	Mud	0.32	0.34	200069	1.70e3	2.11e3	1.80e3	1.96e4	2.55e4	1.72e3	8.10e3	6.28e3	1.44e4	5.55e4	2.04e4	7.57e3	2.71e4	1.03e4	9.89e4	2.53e4
2018041-014	Mud	4.88	4.93	200079	4.29e2	2.25e2	3.47e2	2.57e3	7.20e3	5.90e2	3.33e2	2.87e3	1.09e3	1.49e4	6.22e3	1.41e3	1.84e4	0.00e0	2.70e4	1.21e4
2018041-015	Mud	4.66	4.71	200083	1.27e3	1.14e3	8.61e2	5.63e3	1.24e4	8.08e2	5.35e2	2.09e3	6.81e2	2.51e4	8.26e3	3.18e3	1.44e4	0.00e0	4.43e4	1.31e4
2018041-017	Mud	4.01	4.06	200087	1.10e3	1.25e3	7.49e2	7.10e3	1.87e4	1.46e3	8.53e2	3.77e3	1.82e3	3.49e4	1.10e4	3.61e3	2.05e4	0.00e0	6.07e4	2.03e4
2018041-019	Mud	5.49	5.56	200093	1.89e3	1.78e3	1.51e3	8.94e3	2.03e4	1.83e3	1.42e3	4.18e3	2.63e3	3.95e4	1.52e4	5.01e3	3.01e4	0.00e0	7.29e4	2.23e4
2018041-021	Mud	4.51	4.56	200097	3.17e3	2.45e3	2.21e3	1.59e4	2.46e4	2.32e3	2.35e3	4.91e3	4.89e2	5.23e4	2.19e4	7.97e3	2.23e4	0.00e0	9.94e4	2.52e4
2018041-021	Mud	6.72	6.77	200098	3.67e3	2.40e3	2.23e3	1.66e4	2.28e4	2.39e3	2.87e3	5.13e3	6.25e2	5.33e4	2.17e4	7.39e3	1.96e4	0.00e0	1.07e5	2.50e4
Blank Extraction	Blank			201900	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	4.76e2	0.00e0	0.00e0	0.00e0	0.00e0	3.99e2	3.50e2
2015018-0009	Mud	2.00	2.06	174218	2.67e4	1.12e5	2.42e4	2.11e5	6.57e5	1.74e4	0.00e0	1.01e5	8.90e4	1.06e6	3.53e5	5.69e4	8.85e5	0.00e0	1.85e6	5.66e5
2016011-041	Mud	2.27	2.32	174161	3.21e5	3.40e5	1.76e5	1.83e6	3.01e6	1.93e5	1.16e5	4.97e5	9.10e5	6.29e6	2.07e6	6.33e5	3.15e6	0.00e0	9.87e6	2.41e6
2016011-021	Mud	2.30	2.35	174093	2.99e4	5.31e4	1.14e5	3.85e5	7.25e5	2.32e4	3.04e4	1.27e5	2.23e5	1.46e6	4.53e5	1.04e5	1.17e6	0.00e0	2.71e6	7.25e5

Table 14. continued, GCMS SIR of saturated compounds (peak area)

				m/z	191												217			
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	31αβS	31αβR	30G	31βα	32αβS	32αβR	33αβS	33αβR	34αβS	34αβR	35αβS	35αβR	21αα	21ββ	22αα	22ββ
2018041-007	Mud	0.38	0.43	200067	2.88e4	6.59e4	8.93e3	1.47e4	1.55e4	1.40e4	8.99e3	6.38e3	5.88e3	4.65e3	4.17e3	2.99e3	3.43e3	4.82e3	2.65e3	2.94e3
2018041-007	Mud	0.34	0.38	200068	1.39e4	3.68e4	5.45e3	7.17e3	7.76e3	6.73e3	4.46e3	3.49e3	2.68e3	2.35e3	2.03e3	1.37e3	2.71e3	3.60e3	1.18e3	2.75e3
2018041-007	Mud	0.32	0.34	200069	2.58e4	5.95e4	8.51e3	1.18e4	1.36e4	1.18e4	7.35e3	5.59e3	4.61e3	3.24e3	2.78e3	2.16e3	4.44e3	4.53e3	2.73e3	3.79e3
2018041-014	Mud	4.88	4.93	200079	9.23e3	6.47e4	2.67e3	9.44e3	4.02e3	4.58e3	2.42e3	1.99e3	1.76e3	1.70e3	1.39e3	8.57e2	6.84e2	7.71e2	4.65e2	4.15e2
2018041-015	Mud	4.66	4.71	200083	1.60e4	3.41e4	4.33e3	8.14e3	9.11e3	7.65e3	5.27e3	4.19e3	3.53e3	3.02e3	2.36e3	2.00e3	1.83e3	2.26e3	1.06e3	1.38e3
2018041-017	Mud	4.01	4.06	200087	2.01e4	5.22e4	8.06e3	1.16e4	1.19e4	9.84e3	6.68e3	5.22e3	4.49e3	4.01e3	2.77e3	1.12e3	2.02e3	2.42e3	1.47e3	1.90e3
2018041-019	Mud	5.49	5.56	200093	2.55e4	6.91e4	8.89e3	1.52e4	1.31e4	9.97e3	6.78e3	6.17e3	4.90e3	4.21e3	2.89e3	2.23e3	2.45e3	3.14e3	1.55e3	2.20e3
2018041-021	Mud	4.51	4.56	200097	3.96e4	5.07e4	1.17e4	1.51e4	2.39e4	2.04e4	1.37e4	1.10e4	1.11e4	8.14e3	4.86e3	3.89e3	4.27e3	5.03e3	2.63e3	3.67e3
2018041-021	Mud	6.72	6.77	200098	4.18e4	4.68e4	1.23e4	1.60e4	2.61e4	2.11e4	1.61e4	1.21e4	1.13e4	8.40e3	6.14e3	4.94e3	4.41e3	5.24e3	3.00e3	3.82e3
Blank Extraction	Blank			201900	0.00e0	2.31e2	0.00e0	0.00e0	2.80e2	0.00e0	2.04e2	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	5.42e5	2.62e6	8.51e4	3.53e5	1.82e5	2.01e5	1.40e5	9.26e4	1.05e5	5.32e4	7.51e4	4.04e4	1.73e4	3.39e4	1.30e4	2.05e4
2016011-041	Mud	2.27	2.32	174161	3.19e6	6.61e6	8.71e5	1.68e6	1.45e6	1.29e6	8.22e5	5.21e5	4.79e5	3.08e5	2.80e5	1.74e5	1.39e6	1.36e6	1.13e6	4.48e5
2016011-021	Mud	2.30	2.35	174093	6.72e5	2.90e6	1.14e5	5.22e5	2.63e5	2.77e5	1.60e5	1.14e5	1.07e5	7.69e4	6.93e4	3.71e4	1.44e5	1.57e5	9.92e4	6.75e4

Table 14. continued, GCMS SIR of saturated compounds (peak area)

				m/z	217															
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	27dβS	27dβR	27daR	27daS	28dβS#1	28dβS#2	28dβR#1	28dβR#2	28daR	27ααS	27ββR+29dβS	27ββS	28daS	27ααR	29dβR	29daR
2018041-007	Mud	0.38	0.43	200067	6.91e3	4.01e3	2.56e3	2.61e3	3.18e3	4.65e3	1.77e3	2.58e3	1.46e3	4.10e3	1.10e4	4.07e3	1.15e3	8.61e3	8.58e3	2.65e3
2018041-007	Mud	0.34	0.38	200068	3.58e3	2.39e3	1.09e3	1.20e3	1.46e3	2.04e3	1.12e3	1.28e3	8.50e2	1.67e3	4.71e3	1.70e3	0.00e0	3.75e3	4.33e3	1.96e3
2018041-007	Mud	0.32	0.34	200069	7.27e3	4.55e3	2.38e3	2.63e3	3.23e3	4.77e3	1.65e3	2.59e3	1.70e3	5.38e3	1.00e4	4.11e3	1.92e3	7.60e3	8.49e3	4.51e3
2018041-014	Mud	4.88	4.93	200079	1.03e3	7.58e2	4.47e2	5.38e2	4.71e2	5.05e2	0.00e0	5.27e2	1.20e2	8.33e2	2.29e3	7.93e2	3.65e2	3.51e3	1.81e3	8.94e2
2018041-015	Mud	4.66	4.71	200083	2.72e3	1.77e3	1.05e3	1.23e3	1.28e3	9.03e2	4.48e2	1.33e3	5.59e2	3.26e3	5.21e3	1.62e3	0.00e0	5.12e3	4.27e3	1.92e3
2018041-017	Mud	4.01	4.06	200087	3.32e3	2.07e3	1.12e3	1.32e3	1.29e3	1.75e3	8.65e2	1.56e3	6.15e2	2.74e3	6.51e3	2.35e3	4.80e2	6.82e3	5.33e3	2.27e3
2018041-019	Mud	5.49	5.56	200093	3.89e3	2.36e3	1.70e3	1.54e3	1.94e3	2.37e3	7.52e2	2.23e3	1.07e3	5.99e3	9.28e3	3.47e3	6.13e2	9.19e3	7.54e3	1.70e3
2018041-021	Mud	4.51	4.56	200097	7.81e3	4.44e3	3.03e3	2.97e3	2.95e3	3.69e3	1.16e3	3.07e3	1.25e3	8.68e3	1.56e4	5.16e3	1.11e3	1.24e4	6.26e3	4.48e3
2018041-021	Mud	6.72	6.77	200098	8.39e3	5.40e3	2.41e3	3.47e3	2.65e3	3.41e3	1.10e3	3.13e3	4.25e2	8.44e3	8.00e3	5.57e3	1.08e3	1.27e4	1.16e4	4.48e3
Blank Extraction	Blank			201900	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	2.02e2	1.15e2	0.00e0	2.13e2	4.50e2	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	8.58e4	5.19e4	1.65e4	3.04e4	4.31e4	3.51e4	1.43e4	2.74e4	1.25e4	4.24e4	1.28e5	3.11e4	3.48e3	6.95e4	7.47e4	2.35e4
2016011-041	Mud	2.27	2.32	174161	1.17e6	6.26e5	2.64e5	2.91e5	3.59e5	4.62e5	1.44e5	2.94e5	1.58e5	5.57e5	1.22e6	3.44e5	1.08e5	7.71e5	8.53e5	2.81e5
2016011-021	Mud	2.30	2.35	174093	1.79e5	8.98e4	3.67e4	3.76e4	6.10e4	6.47e4	2.29e4	4.09e4	2.95e4	6.04e4	1.63e5	4.51e4	1.24e4	9.35e4	1.16e5	4.43e4

Table 14. continued, GCMS SIR of saturated compounds (peak area)

				m/z	217													218		
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	28ααS	29daS	28ββR	28ββS	28ααR	29ααS	29ββR	29ββS	29ααR	30ααS	30ββR	30ββS	30ααR	27ββR	27ββS	28ββR
2018041-007	Mud	0.38	0.43	200067	1.34e3	2.72e3	4.93e3	4.29e3	4.83e3	1.06e4	8.99e3	6.22e3	1.62e4	4.58e2	5.85e2	2.83e2	8.12e2	8.84e3	5.26e3	5.95e3
2018041-007	Mud	0.34	0.38	200068	8.85e2	1.25e3	2.63e3	2.15e3	1.71e3	4.53e3	4.02e3	3.76e3	6.94e3	1.19e3	5.96e2	2.66e2	2.29e2	4.08e3	2.45e3	1.90e3
2018041-007	Mud	0.32	0.34	200069	2.03e3	2.28e3	3.40e3	4.49e3	5.91e3	7.84e3	6.93e3	6.99e3	1.07e4	2.49e3	4.29e2	3.38e2	4.32e2	7.66e3	4.63e3	5.23e3
2018041-014	Mud	4.88	4.93	200079	3.57e2	7.24e2	6.23e2	8.14e2	1.08e3	2.55e3	1.89e3	9.35e2	4.78e3	1.26e2	8.30e1	2.03e2	2.52e2	1.72e3	1.23e3	9.56e2
2018041-015	Mud	4.66	4.71	200083	5.79e2	1.70e3	1.61e3	1.98e3	4.36e3	5.85e3	4.91e3	4.75e3	1.08e4	2.13e2	2.49e2	0.00e0	2.53e2	4.30e3	2.78e3	2.55e3
2018041-017	Mud	4.01	4.06	200087	1.03e3	1.73e3	2.61e3	2.26e3	4.79e3	7.70e3	5.65e3	5.92e3	1.16e4	1.34e3	2.31e2	0.00e0	5.65e2	4.86e3	3.15e3	3.33e3
2018041-019	Mud	5.49	5.56	200093	1.18e3	2.34e3	3.45e3	3.06e3	6.20e3	9.58e3	6.78e3	5.33e3	1.56e4	1.53e3	3.99e2	0.00e0	3.59e2	7.49e3	4.21e3	3.89e3
2018041-021	Mud	4.51	4.56	200097	2.03e3	3.57e3	3.10e3	4.24e3	9.01e3	1.77e4	1.14e4	9.32e3	2.38e4	2.09e3	6.78e2	2.39e2	3.73e2	1.12e4	6.92e3	4.95e3
2018041-021	Mud	6.72	6.77	200098	2.28e3	4.39e3	5.30e3	3.77e3	4.79e3	1.88e4	1.25e4	1.25e4	2.36e4	2.42e3	2.11e2	0.00e0	3.96e2	1.17e4	7.39e3	4.91e3
Blank Extraction	Blank			201900	0.00e0	0.00e0	0.00e0	0.00e0	2.05e2	0.00e0	0.00e0	0.00e0	3.22e2	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	1.54e4	2.60e4	2.23e4	2.57e4	2.56e4	5.32e4	4.63e4	3.83e4	1.25e5	7.44e3	0.00e0	0.00e0	0.00e0	8.10e4	5.14e4	3.20e4
2016011-041	Mud	2.27	2.32	174161	1.43e5	3.26e5	2.66e5	3.25e5	4.92e5	6.85e5	7.15e5	5.04e5	1.17e6	1.20e5	2.15e4	0.00e0	4.41e4	7.82e5	4.70e5	3.69e5
2016011-021	Mud	2.30	2.35	174093	3.94e4	4.81e4	4.01e4	4.65e4	4.51e4	6.64e4	5.72e4	4.50e4	1.24e5	1.82e4	2.76e3	0.00e0	5.41e3	1.06e5	6.09e4	5.82e4

Table 14. continued, GCMS SIR of saturated compounds (peak area)

				m/z	218				
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	28ββS	29ββR	29ββS	30ββR	30ββS
2018041-007	Mud	0.38	0.43	200067	5.91e3	1.14e4	1.01e4	4.55e2	0.00e0
2018041-007	Mud	0.34	0.38	200068	3.11e3	4.74e3	4.97e3	5.23e2	2.83e2
2018041-007	Mud	0.32	0.34	200069	4.92e3	9.28e3	8.43e3	1.21e3	2.46e2
2018041-014	Mud	4.88	4.93	200079	1.04e3	2.55e3	2.59e3	4.08e2	2.87e2
2018041-015	Mud	4.66	4.71	200083	2.91e3	6.06e3	5.72e3	3.66e2	0.00e0
2018041-017	Mud	4.01	4.06	200087	3.38e3	7.87e3	7.09e3	3.96e2	0.00e0
2018041-019	Mud	5.49	5.56	200093	3.73e3	9.89e3	8.09e3	6.62e2	0.00e0
2018041-021	Mud	4.51	4.56	200097	4.77e3	1.56e4	1.46e4	6.62e2	2.99e2
2018041-021	Mud	6.72	6.77	200098	5.84e3	1.78e4	1.58e4	1.09e3	0.00e0
Blank Extraction	Blank			201900	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	3.58e4	7.65e4	6.75e4	0.00e0	0.00e0
2016011-041	Mud	2.27	2.32	174161	4.96e5	9.73e5	8.08e5	2.80e4	0.00e0
2016011-021	Mud	2.30	2.35	174093	6.33e4	1.07e5	9.42e4	0.00e0	0.00e0

Table 15. GCMS SIR of aromatic compounds (peak height)

				m/z	142		156										170			
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	2-MN	1-MN	2-EN	1-EN	2,6-DMN	2,7-DMN	1,3- + 1,7-DMN	1,6-DMN	2,3- + 1,4-DMN	1,5-DMN	1,2-DMN	1,8-DMN	1,3,7-TMN	1,3,6-TMN	1,3,5- + 1,4,6-TMN	2,3,6-TMN
2018041-007	Mud	0.38	0.43	200067	1.19e4	1.19e4	2.02e3	1.98e3	7.05e3	7.68e3	2.15e4	1.45e4	6.87e3	4.45e3	3.17e3	6.13e2	1.17e4	1.43e4	1.27e4	8.50e3
2018041-007	Mud	0.34	0.38	200068	7.25e3	6.70e3	1.24e3	1.22e3	5.36e3	6.12e3	1.36e4	8.65e3	3.88e3	2.66e3	1.72e3	3.98e2	7.28e3	8.60e3	6.73e3	5.02e3
2018041-007	Mud	0.32	0.34	200069	2.11e4	1.73e4	3.13e3	2.32e3	1.11e4	1.17e4	2.68e4	1.72e4	7.93e3	4.48e3	3.16e3	7.07e2	1.09e4	1.37e4	1.04e4	7.43e3
2018041-014	Mud	4.88	4.93	200079	2.35e3	3.59e3	5.03e2	6.26e2	2.08e3	1.69e3	4.82e3	3.47e3	2.40e3	1.78e3	9.38e2	5.70e1	2.18e3	3.41e3	3.18e3	2.43e3
2018041-015	Mud	4.66	4.71	200083	3.14e3	4.51e3	5.63e2	7.17e2	2.11e3	2.41e3	6.35e3	4.49e3	3.05e3	2.27e3	1.30e3	1.62e2	3.91e3	5.74e3	5.75e3	4.23e3
2018041-017	Mud	4.01	4.06	200087	3.42e3	4.71e3	7.23e2	8.40e2	2.24e3	2.74e3	7.99e3	5.15e3	4.10e3	2.51e3	1.59e3	2.60e2	4.57e3	6.79e3	6.44e3	4.89e3
2018041-019	Mud	5.49	5.56	200093	2.52e3	3.63e3	5.55e2	7.05e2	1.77e3	1.95e3	5.46e3	3.89e3	2.63e3	1.76e3	1.12e3	1.26e2	3.15e3	4.82e3	5.25e3	3.33e3
2018041-021	Mud	4.51	4.56	200097	1.31e3	1.49e3	3.70e2	4.34e2	1.22e3	1.04e3	3.25e3	2.44e3	1.44e3	1.13e3	6.95e2	9.90e1	2.88e3	4.06e3	4.20e3	3.21e3
2018041-021	Mud	6.72	6.77	200098	9.99e2	1.48e3	3.21e2	2.29e2	9.84e2	1.20e3	2.87e3	2.16e3	1.21e3	1.15e3	6.51e2	1.53e2	3.27e3	4.00e3	4.35e3	2.89e3
Blank Extraction	Blank			201900	6.80e1	8.00e1	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	5.20e1	1.84e2	1.16e2	3.40e2	1.16e2	0.00e0	0.00e0	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	1.69e6	1.56e6	9.63e4	6.86e4	5.06e5	4.41e5	1.25e6	8.22e5	3.98e5	2.13e5	1.26e5	3.56e3	2.20e5	3.47e5	3.29e5	2.03e5
2016011-041	Mud	2.27	2.32	174161	7.19e6	4.81e6	9.42e5	5.43e5	3.54e6	2.99e6	7.35e6	4.74e6	1.87e6	9.70e5	6.92e5	1.06e5	2.92e6	3.40e6	2.46e6	1.70e6
2016011-021	Mud	2.30	2.35	174093	3.19e5	3.49e5	1.87e4	1.74e4	2.05e5	9.58e4	3.77e5	2.26e5	1.41e5	5.67e4	3.79e4	2.26e3	1.08e5	1.78e5	1.84e5	1.17e5

Table 15. continued, GCMS SIR of aromatic compounds (peak height)

m/z					170				178	192				206						
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	1,2,7-TMN	1,6,7 + 1,2,6-TMN	1,2,4-TMN	1,2,5-TMN	P	3-MP	2-MP	9-MP	1-MP	2-EP+9-EP+ 3,6-DMP	1-EP	2,6- + 2,7- + 3,5-DMP	1,3- + 2,10- + 3,9- + 3,10-DMP	1,6- + 2,5- + 2,9-DMP	1,7-DMP	2,3-DMP
2018041-007	Mud	0.38	0.43	200067	2.70e3	9.07e3	1.66e3	9.38e3	5.34e4	1.67e4	1.99e4	3.65e4	2.05e4	5.48e3	1.26e4	7.21e3	3.25e4	1.44e4	1.40e4	7.13e3
2018041-007	Mud	0.34	0.38	200068	1.52e3	4.72e3	7.68e2	4.39e3	2.63e4	9.35e3	9.05e3	1.84e4	1.08e4	2.77e3	6.42e3	3.46e3	1.43e4	7.29e3	6.61e3	3.43e3
2018041-007	Mud	0.32	0.34	200069	2.33e3	7.05e3	1.25e3	7.00e3	3.42e4	9.80e3	1.05e4	2.00e4	1.22e4	3.30e3	7.20e3	4.53e3	1.82e4	8.39e3	8.39e3	3.97e3
2018041-014	Mud	4.88	4.93	200079	8.75e2	2.75e3	5.17e2	2.59e3	1.69e4	7.35e3	8.39e3	1.32e4	8.41e3	2.22e3	4.09e3	3.15e3	1.01e4	4.52e3	4.53e3	2.59e3
2018041-015	Mud	4.66	4.71	200083	1.25e3	4.73e3	9.53e2	4.98e3	3.10e4	1.17e4	1.48e4	2.71e4	1.52e4	4.42e3	8.87e3	6.04e3	2.38e4	1.13e4	1.23e4	5.77e3
2018041-017	Mud	4.01	4.06	200087	1.57e3	5.79e3	1.03e3	7.01e3	3.07e4	1.34e4	1.51e4	2.63e4	1.66e4	4.85e3	9.23e3	7.04e3	2.30e4	1.15e4	1.26e4	5.75e3
2018041-019	Mud	5.49	5.56	200093	9.92e2	4.07e3	7.73e2	3.84e3	2.09e4	8.67e3	1.07e4	1.93e4	1.09e4	3.49e3	6.59e3	4.74e3	1.96e4	8.90e3	8.77e3	4.10e3
2018041-021	Mud	4.51	4.56	200097	8.77e2	3.04e3	7.55e2	2.13e3	1.54e4	9.91e3	1.19e4	2.17e4	1.10e4	4.71e3	1.15e4	7.65e3	3.73e4	1.69e4	1.58e4	6.91e3
2018041-021	Mud	6.72	6.77	200098	8.35e2	2.82e3	7.24e2	1.74e3	1.65e4	1.24e4	1.53e4	2.87e4	1.45e4	6.80e3	1.57e4	1.16e4	4.77e4	2.22e4	1.91e4	8.45e3
Blank Extraction	Blank			201900	1.57e2	1.88e2	1.70e2	0.00e0	2.51e2	0.00e0	9.40e1	9.40e1	8.00e1	0.00e0	0.00e0	0.00e0	6.10e1	8.20e1	4.90e1	0.00e0
2015018-0009	Mud	2.00	2.06	174218	4.48e4	2.64e5	2.34e4	2.89e5	9.85e5	1.89e5	2.31e5	3.37e5	2.35e5	2.02e4	5.05e4	2.70e4	2.00e5	8.91e4	1.03e5	4.03e4
2016011-041	Mud	2.27	2.32	174161	4.93e5	1.49e6	2.27e5	1.33e6	3.16e6	1.00e6	1.20e6	2.27e6	1.29e6	4.53e5	6.35e5	3.73e5	2.24e6	1.03e6	1.04e6	4.89e5
2016011-021	Mud	2.30	2.35	174093	2.54e4	1.54e5	1.32e4	1.25e5	1.21e6	2.65e5	3.39e5	5.07e5	3.20e5	4.91e4	1.81e5	9.54e4	3.35e5	1.31e5	1.32e5	6.24e4

Table 15. continued, GCMS SIR of aromatic compounds (peak height)

				m/z	206			219	184	198			253							
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	1,9- + 4,9- + 4,10-DMP	1,8-DMP	1,2-DMP	Retene	DBT	4-MDBT	(3+2)-MDBT	1-MDBT	C21MA	C22MA	βSC27MA	βSC27DMA	βRC27MA+ βRC27DMA	αSC27MA	βSC28MA+ βSC28DMA+ αRC27DMA	αSC27DMA
2018041-007	Mud	0.38	0.43	200067	9.68e3	4.92e3	3.89e3	5.70e3	4.65e3	4.21e3	2.10e3	1.93e3	1.03e3	6.55e2	4.31e2	1.15e3	9.90e2	5.82e2	2.01e3	5.13e2
2018041-007	Mud	0.34	0.38	200068	4.67e3	2.54e3	1.90e3	4.44e3	2.01e3	2.16e3	1.11e3	9.97e2	7.97e2	5.25e2	3.50e2	6.30e2	5.45e2	3.03e2	1.18e3	2.28e2
2018041-007	Mud	0.32	0.34	200069	5.42e3	2.76e3	2.20e3	4.79e3	2.70e3	2.37e3	1.22e3	1.15e3	9.61e2	6.67e2	4.92e2	1.02e3	8.63e2	5.47e2	1.77e3	4.46e2
2018041-014	Mud	4.88	4.93	200079	2.98e3	1.67e3	1.44e3	6.93e3	1.66e3	1.45e3	7.56e2	5.64e2	3.08e2	2.09e2	1.78e2	4.06e2	3.65e2	2.27e2	5.56e2	9.90e1
2018041-015	Mud	4.66	4.71	200083	7.76e3	4.11e3	3.24e3	4.36e3	2.88e3	2.83e3	1.58e3	1.33e3	9.22e2	5.59e2	5.66e2	1.07e3	1.03e3	6.47e2	1.54e3	3.45e2
2018041-017	Mud	4.01	4.06	200087	6.93e3	4.37e3	3.42e3	5.95e3	3.41e3	3.01e3	1.73e3	1.44e3	6.90e2	4.84e2	3.90e2	8.05e2	7.20e2	4.44e2	1.13e3	2.57e2
2018041-019	Mud	5.49	5.56	200093	5.78e3	3.25e3	2.58e3	3.91e3	2.14e3	2.33e3	1.13e3	9.30e2	6.68e2	4.86e2	5.01e2	8.84e2	9.01e2	5.21e2	1.15e3	2.66e2
2018041-021	Mud	4.51	4.56	200097	1.07e4	5.45e3	3.44e3	3.23e3	1.68e3	2.85e3	1.36e3	1.12e3	1.65e3	9.71e2	9.49e2	1.99e3	1.80e3	1.05e3	2.12e3	4.25e2
2018041-021	Mud	6.72	6.77	200098	1.29e4	6.32e3	3.64e3	2.89e3	1.93e3	3.52e3	1.54e3	1.23e3	1.42e3	9.14e2	9.16e2	1.63e3	1.61e3	9.89e2	1.76e3	3.93e2
Blank Extraction	Blank			201900	5.00e1	2.60e1	0.00e0	6.10e1	2.40e1	2.90e1	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	4.44e4	1.92e4	1.99e4	1.13e5	4.94e4	2.78e4	1.15e4	8.57e3	3.55e3	3.39e3	3.96e3	4.10e3	7.04e3	2.96e3	1.23e4	1.60e3
2016011-041	Mud	2.27	2.32	174161	6.43e5	3.40e5	2.36e5	5.65e5	3.44e5	2.58e5	1.22e5	9.48e4	1.46e5	9.44e4	2.66e4	7.76e4	5.86e4	2.64e4	1.38e5	1.52e4
2016011-021	Mud	2.30	2.35	174093	7.88e4	3.45e4	3.10e4	1.12e5	9.70e4	4.48e4	2.03e4	1.14e4	8.37e3	5.90e3	2.82e3	5.01e3	6.26e3	2.79e3	1.18e4	1.64e3

Table 15. continued, GCMS SIR of aromatic compounds (peak height)

				m/z	253							231								
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	αRC27MA	αSC28MA	βRC28MA+ βRC28DMA	βSC29MA+ βSC29DMA	αSC29MA	αRC28MA+ βRC29MA+ βRC29DMA	αRC29MA	C20TA	C21TA	SC26TA	RC26TA+ SC27TA	M1	M2	SC28TA	RC27TA	M3
2018041-007	Mud	0.38	0.43	200067	5.32e2	8.47e2	1.07e3	3.29e3	1.33e3	2.32e3	1.06e3	1.74e3	1.07e3	1.92e3	4.30e3	0.00e0	1.53e2	5.01e3	1.71e3	1.14e2
2018041-007	Mud	0.34	0.38	200068	2.76e2	4.43e2	6.44e2	1.66e3	6.56e2	1.23e3	4.95e2	8.77e2	5.25e2	9.40e2	2.17e3	0.00e0	7.70e1	2.36e3	7.72e2	9.10e1
2018041-007	Mud	0.32	0.34	200069	4.47e2	7.89e2	9.51e2	2.38e3	9.14e2	1.68e3	7.71e2	1.22e3	6.76e2	1.24e3	2.68e3	0.00e0	8.10e1	3.01e3	1.03e3	5.90e1
2018041-014	Mud	4.88	4.93	200079	2.30e2	3.08e2	3.23e2	1.23e3	5.34e2	8.97e2	4.92e2	5.62e2	3.47e2	7.46e2	1.38e3	0.00e0	4.50e1	1.84e3	4.74e2	0.00e0
2018041-015	Mud	4.66	4.71	200083	5.39e2	5.42e2	8.40e2	3.39e3	1.54e3	2.27e3	1.03e3	1.91e3	1.05e3	1.87e3	3.64e3	0.00e0	0.00e0	4.84e3	1.24e3	0.00e0
2018041-017	Mud	4.01	4.06	200087	4.20e2	4.59e2	6.45e2	2.53e3	1.03e3	1.74e3	8.04e2	1.49e3	8.62e2	1.51e3	2.92e3	0.00e0	5.20e1	3.80e3	1.08e3	6.00e1
2018041-019	Mud	5.49	5.56	200093	4.48e2	4.86e2	6.51e2	2.59e3	1.38e3	1.91e3	9.06e2	1.41e3	8.04e2	1.49e3	2.86e3	0.00e0	7.30e1	3.62e3	9.97e2	0.00e0
2018041-021	Mud	4.51	4.56	200097	8.90e2	7.09e2	1.20e3	5.10e3	2.49e3	3.45e3	1.68e3	3.23e3	1.75e3	3.23e3	5.53e3	3.70e1	1.18e2	7.38e3	1.74e3	0.00e0
2018041-021	Mud	6.72	6.77	200098	7.81e2	6.46e2	9.55e2	4.58e3	1.93e3	2.87e3	1.44e3	2.90e3	1.65e3	2.78e3	5.16e3	0.00e0	1.25e2	6.52e3	1.47e3	0.00e0
Blank Extraction	Blank			201900	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	4.20e1	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	2.96e3	5.16e3	7.20e3	3.11e4	1.22e4	1.70e4	1.77e4	8.21e3	5.17e3	6.07e3	1.63e4	0.00e0	0.00e0	1.85e4	4.70e3	0.00e0
2016011-041	Mud	2.27	2.32	174161	1.62e4	3.10e4	5.13e4	1.59e5	5.05e4	9.16e4	4.12e4	1.26e5	7.42e4	7.38e4	1.82e5	0.00e0	0.00e0	2.23e5	5.72e4	0.00e0
2016011-021	Mud	2.30	2.35	174093	2.26e3	3.70e3	6.03e3	1.81e4	6.34e3	9.96e3	7.94e3	8.61e3	5.12e3	6.29e3	1.61e4	0.00e0	0.00e0	1.81e4	4.70e3	0.00e0

Table 15. continued, GCMS SIR of aromatic compounds (peak height)

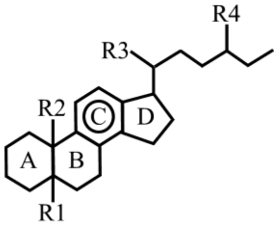
				m/z	231		245													
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	M4	RC28TA	3MS-TA	4MS-TA	2,24DMS-TA	3,24DMS+3MR-TA	4,24DMS+4MR-TA	D1-TA	3M24ES-TA	D2-TA	4M24ES-TA	3,24DMR-TA	4,24DMR-TA	D3-TA	D4-TA	2M24ER-TA
2018041-007	Mud	0.38	0.43	200067	1.78e2	5.71e3	3.44e2	7.81e2	1.18e2	7.93e2	6.10e2	0.00e0	1.24e3	1.48e2	8.11e2	3.81e2	4.58e2	1.75e2	3.80e1	2.28e2
2018041-007	Mud	0.34	0.38	200068	8.80e1	2.63e3	1.66e2	3.89e2	9.00e1	3.86e2	5.27e2	7.00e1	5.71e2	1.08e2	4.13e2	1.55e2	2.75e2	1.33e2	1.39e2	1.01e2
2018041-007	Mud	0.32	0.34	200069	9.90e1	3.41e3	2.58e2	4.93e2	8.90e1	5.37e2	5.86e2	0.00e0	7.92e2	1.60e2	5.75e2	2.25e2	3.37e2	1.31e2	1.38e2	1.54e2
2018041-014	Mud	4.88	4.93	200079	0.00e0	2.20e3	1.10e2	2.63e2	4.70e1	2.57e2	2.28e2	2.00e1	5.10e2	0.00e0	4.48e2	1.17e2	1.09e2	5.40e1	2.70e1	8.70e1
2018041-015	Mud	4.66	4.71	200083	1.54e2	5.59e3	3.17e2	5.97e2	1.09e2	6.20e2	6.35e2	0.00e0	1.23e3	7.60e1	6.86e2	2.97e2	3.33e2	9.50e1	0.00e0	2.10e2
2018041-017	Mud	4.01	4.06	200087	1.02e2	4.27e3	2.48e2	5.00e2	8.40e1	4.58e2	6.28e2	3.20e1	9.13e2	5.70e1	6.65e2	2.35e2	3.76e2	1.32e2	0.00e0	1.79e2
2018041-019	Mud	5.49	5.56	200093	1.24e2	4.34e3	2.45e2	3.96e2	9.20e1	4.74e2	4.36e2	0.00e0	9.06e2	3.90e1	5.40e2	2.26e2	2.02e2	9.20e1	0.00e0	1.82e2
2018041-021	Mud	4.51	4.56	200097	6.80e1	8.98e3	5.42e2	6.09e2	1.77e2	8.79e2	5.61e2	0.00e0	1.81e3	0.00e0	9.36e2	4.46e2	2.63e2	1.42e2	0.00e0	2.99e2
2018041-021	Mud	6.72	6.77	200098	1.70e2	7.47e3	4.61e2	5.19e2	1.02e2	7.64e2	4.44e2	0.00e0	1.57e3	1.09e2	8.29e2	4.35e2	2.22e2	9.80e1	9.70e1	3.05e2
Blank Extraction	Blank			201900	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	0.00e0	2.24e4	6.23e2	2.26e3	0.00e0	1.76e3	3.00e3	0.00e0	3.07e3	5.60e2	2.89e3	7.59e2	1.48e3	7.37e2	4.99e2	4.60e2
2016011-041	Mud	2.27	2.32	174161	0.00e0	2.08e5	7.34e3	2.15e4	2.46e3	1.81e4	2.02e4	1.75e3	3.24e4	3.66e3	2.23e4	7.91e3	9.93e3	3.83e3	4.04e3	5.14e3
2016011-021	Mud	2.30	2.35	174093	0.00e0	2.11e4	9.76e2	2.34e3	0.00e0	1.87e3	3.07e3	0.00e0	3.44e3	8.72e2	2.94e3	8.82e2	1.70e3	6.84e2	1.21e3	9.57e2

Table 15. continued, GCMS SIR of aromatic compounds (peak height)

				m/z	245			
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	3M24ER-TA	D5-TA	4M24ER-TA	D6-TA
2018041-007	Mud	0.38	0.43	200067	9.73e2	0.00e0	7.92e2	2.12e2
2018041-007	Mud	0.34	0.38	200068	4.85e2	7.70e1	3.58e2	1.97e2
2018041-007	Mud	0.32	0.34	200069	6.14e2	9.00e1	5.06e2	1.68e2
2018041-014	Mud	4.88	4.93	200079	3.99e2	0.00e0	2.85e2	6.20e1
2018041-015	Mud	4.66	4.71	200083	1.04e3	0.00e0	6.24e2	0.00e0
2018041-017	Mud	4.01	4.06	200087	8.06e2	0.00e0	5.49e2	8.70e1
2018041-019	Mud	5.49	5.56	200093	8.26e2	0.00e0	5.13e2	8.20e1
2018041-021	Mud	4.51	4.56	200097	1.63e3	0.00e0	9.55e2	1.00e2
2018041-021	Mud	6.72	6.77	200098	1.38e3	0.00e0	7.82e2	1.49e2
Blank Extraction	Blank			201900	0.00e0	0.00e0	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	2.23e3	5.77e2	2.18e3	9.28e2
2016011-041	Mud	2.27	2.32	174161	2.58e4	4.01e3	1.64e4	6.86e3
2016011-021	Mud	2.30	2.35	174093	2.48e3	6.57e2	1.80e3	1.32e3

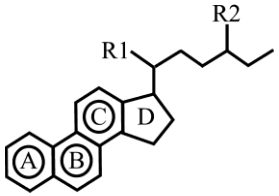
Abbreviation of aromatic biomarkers

C-ring monoaromatic steroid



Substituents				
R_1	R_2	R_3	R_4	Label
				C_{21}MA
				C_{22}MA
β(H)	CH_3	S(CH_3)	H	βSC_{27}MA
β(CH_3)	H	S(CH_3)	H	βSC_{27}DMA
β(CH_3)	H	RCH3)	H	βRC_{27}DMA+
β(H)	CH_3	R(CH_3)	H	βRC_{27}MA
α(H)	CH_3	S(CH_3)	H	αSC_{27}MA
β(H)	CH_3	S(CH_3)	CH_3	βSC_{28}MA+
α(CH_3)	H	R(CH_3)	H	αRC_{27}DMA+
β(CH_3)	H	S(CH_3)	CH_3	βSC_{28}DMA
α(CH_3)	H	S(CH_3)	CH_3	αSC_{27}DMA
α(H)	CH_3	R(CH_3)	H	αRC_{27}MA
α(H)	CH_3	S(CH_3)	CH_3	αSC_{28}MA
β(H)	CH_3	R(CH_3)	CH_3	βRC_{28}MA+
β(CH_3)	H	R(CH_3)	CH_3	βRC_{28}DMA
β(H)	CH_3	S(CH_3)	C_2H_5	βSC_{29}MA+
β(CH_3)	H	S(CH_3)	C_2H_5	βSC_{29}DMA
α(H)	CH_3	S(CH_3)	C_2H_5	αSC_{29}MA
α(H)	CH_3	R(CH_3)	CH_3	αRC_{28}MA+
β(H)	CH_3	R(CH_3)	C_2H_5	βRC_{29}MA+
β(CH_3)	H	R(CH_3)	C_2H_5	βRC_{29}DMA
α(H)	CH_3	R(CH_3)	C_2H_5	αRC_{29}MA

ABC-ring triaromatic steroids



Substituents		
R_1	R_2	Label
CH_3	H	C_{20}TA
CH_3	CH_3	C_{21}TA
S(CH_3)	C_6H_{13}	SC_{26}TA
R(CH_3)	C_6H_{13}	RC_{26}TA+
S(CH3)	C_7H_{15}	SC_{27}TA
S(CH_3)	C_8H_{17}	SC_{28}TA
R(CH_3)	C_7H_{15}	RC_{27}TA
R(CH_3)	C_8H_{17}	RC_{28}TA

Polycyclic aromatic hydrocarbons and sulphur compounds

MN	Methylnaphthalene
EN	Ethylnaphthalene
DMN	Dimethylnaphthalene
TMN	Trimethylnaphthalene
TeMN	Tetramethylnaphthalene
P	Phenanthrene
MP	Methylphenanthrene
EP	Ethylphenanthrene
DMP	Dimethylphenanthrene
DBT	Dibenzothiophene
MDBT	Methyldibenzothiophene
DMDBT	Dimethyldibenzothiophene

Tri-aromatic steroids (TA)

3MS-TA	(20S) 3-methyl TA
4MS-TA	(20S) 4-methyl TA
2,24DMS-TA	(20S) 2,24-dimethyl TA
3,24DMS-TA	(20S) 3,24-dimethyl TA
3MR-TA	(20R) 3-methyl TA
4,24DMS-TA	(20S) 4,24-dimethyl TA
4MR-TA	(20R) 4-methyl TA
3M24ES-TA	(20S) 3-methyl-24-ethyl TA
4M24ES-TA	(20S) 4-methyl-24-ethyl TA
3,24DMR-TA	(20R) 3,24-dimethyl TA
4,24DMR-TA	(20R) 4,24-dimethyl TA
2M24ER-TA	(20R) 2-methyl-24-ethyl TA
3M24ER-TA	(20R) 3-methyl-24-ethyl TA
4M24ER-TA	(20R) 4-methyl-24-ethyl TA

Tri-aromatic dinosteroids

D1-TA	TA-dinosteroid #1
D2-TA	TA-dinosteroid #2
D3-TA	TA-dinosteroid #3
D4-TA	TA-dinosteroid #4
D5-TA	TA-dinosteroid #5
D6-TA	TA-dinosteroid #6
M1	23,24-dimethyl-triaromatic steroid #1
M2	23,24-dimethyl-triaromatic steroid #2
M3	23,24-dimethyl-triaromatic steroid #3
M4	23,24-dimethyl-triaromatic steroid #4

Table 16. GCMS SIR of aromatic compounds (peak area)

				m/z	142		156										170			
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	2-MN	1-MN	2-EN	1-EN	2,6-DMN	2,7-DMN	1,3- + 1,7-DMN	1,6-DMN	2,3- + 1,4-DMN	1,5-DMN	1,2-DMN	1,8-DMN	1,3,7-TMN	1,3,6-TMN	1,3,5- + 1,4,6-TMN	2,3,6-TMN
2018041-007	Mud	0.38	0.43	200067	1.20e5	1.22e5	1.90e4	1.77e4	6.33e4	9.21e4	2.22e5	1.74e5	7.32e4	4.90e4	3.59e4	5.63e3	1.32e5	1.72e5	1.42e5	1.01e5
2018041-007	Mud	0.34	0.38	200068	7.93e4	6.38e4	1.13e4	1.50e4	4.34e4	7.64e4	1.36e5	1.10e5	4.40e4	2.63e4	1.80e4	2.97e3	7.63e4	1.01e5	7.40e4	5.34e4
2018041-007	Mud	0.32	0.34	200069	2.06e5	1.60e5	2.50e4	2.53e4	9.66e4	1.36e5	2.65e5	1.96e5	8.28e4	4.81e4	3.76e4	8.72e3	1.22e5	1.60e5	1.14e5	8.19e4
2018041-014	Mud	4.88	4.93	200079	2.69e4	4.50e4	4.13e3	4.89e3	2.94e4	1.24e4	6.27e4	5.72e4	3.18e4	2.16e4	1.08e4	2.04e2	2.72e4	4.81e4	3.90e4	3.11e4
2018041-015	Mud	4.66	4.71	200083	3.82e4	4.91e4	5.02e3	7.28e3	1.71e4	3.23e4	7.30e4	6.44e4	3.67e4	2.65e4	1.49e4	8.29e2	4.55e4	7.36e4	6.52e4	5.10e4
2018041-017	Mud	4.01	4.06	200087	3.63e4	4.81e4	6.45e3	8.61e3	1.97e4	3.28e4	7.81e4	6.33e4	4.52e4	2.67e4	1.84e4	1.22e3	5.20e4	8.19e4	7.20e4	5.71e4
2018041-019	Mud	5.49	5.56	200093	3.36e4	3.57e4	4.72e3	6.67e3	1.35e4	1.70e4	6.22e4	5.06e4	2.87e4	2.07e4	1.08e4	5.57e2	3.79e4	5.82e4	5.42e4	4.05e4
2018041-021	Mud	4.51	4.56	200097	1.47e4	1.65e4	2.31e3	4.55e3	2.01e4	7.32e3	3.44e4	2.75e4	1.48e4	1.33e4	6.52e3	3.12e2	3.54e4	5.20e4	4.96e4	3.73e4
2018041-021	Mud	6.72	6.77	200098	6.16e3	1.84e4	1.17e3	8.30e2	8.82e3	1.09e4	3.27e4	3.07e4	1.48e4	1.35e4	4.93e3	8.41e2	3.74e4	5.09e4	4.92e4	3.78e4
Blank Extraction	Blank			201900	3.56e2	2.02e2	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	2.49e2	1.17e3	5.21e2	2.43e3	4.13e2	0.00e0	0.00e0	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	7.78e6	6.78e6	4.64e5	3.32e5	2.34e6	2.32e6	6.35e6	4.35e6	2.31e6	1.06e6	6.55e5	2.29e4	1.25e6	2.02e6	1.91e6	1.09e6
2016011-041	Mud	2.27	2.32	174161	2.95e7	1.97e7	4.50e6	2.88e6	1.63e7	1.53e7	3.65e7	2.45e7	1.12e7	5.64e6	4.57e6	7.27e5	1.77e7	2.11e7	1.53e7	1.01e7
2016011-021	Mud	2.30	2.35	174093	1.21e6	1.31e6	8.64e4	8.41e4	8.91e5	4.51e5	1.70e6	1.03e6	7.30e5	2.61e5	1.89e5	1.02e4	5.49e5	9.89e5	9.50e5	5.76e5

Table 16. continued, GCMS SIR of aromatic compounds (peak area)

				m/z	170				178	192				206						
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	1,2,7-TMN	1,6,7 + 1,2,6-TMN	1,2,4-TMN	1,2,5-TMN	P	3-MP	2-MP	9-MP	1-MP	2-EP+9-EP+ 3,6-DMP	1-EP	2,6- + 2,7- + 3,5-DMP	1,3- + 2,10- + 3,9- + 3,10-DMP	1,6- + 2,5- + 2,9-DMP	1,7-DMP	2,3-DMP
2018041-007	Mud	0.38	0.43	200067	2.47e4	1.59e5	1.70e4	1.04e5	3.18e5	9.07e4	1.11e5	1.96e5	1.21e5	2.90e4	6.35e4	3.95e4	2.04e5	1.05e5	7.56e4	3.72e4
2018041-007	Mud	0.34	0.38	200068	1.48e4	8.35e4	8.92e3	5.23e4	1.65e5	5.08e4	5.36e4	9.93e4	6.60e4	1.52e4	3.35e4	1.89e4	9.56e4	5.32e4	3.79e4	1.99e4
2018041-007	Mud	0.32	0.34	200069	2.25e4	1.10e5	1.30e4	8.09e4	2.13e5	5.36e4	5.85e4	1.09e5	6.78e4	1.78e4	3.71e4	2.37e4	1.16e5	5.98e4	4.55e4	2.22e4
2018041-014	Mud	4.88	4.93	200079	7.83e3	5.28e4	4.55e3	3.00e4	1.06e5	4.10e4	4.75e4	7.02e4	4.92e4	1.16e4	2.02e4	1.61e4	6.30e4	3.43e4	2.58e4	1.46e4
2018041-015	Mud	4.66	4.71	200083	1.16e4	7.80e4	9.89e3	5.50e4	1.93e5	6.44e4	8.27e4	1.44e5	8.91e4	2.40e4	4.45e4	3.50e4	1.58e5	8.23e4	6.72e4	3.28e4
2018041-017	Mud	4.01	4.06	200087	1.29e4	9.94e4	1.07e4	7.66e4	1.87e5	7.16e4	8.57e4	1.41e5	9.87e4	2.42e4	4.67e4	3.49e4	1.46e5	8.11e4	6.64e4	3.13e4
2018041-019	Mud	5.49	5.56	200093	8.68e3	6.36e4	7.72e3	4.23e4	1.32e5	4.86e4	5.96e4	1.02e5	6.30e4	1.80e4	3.43e4	2.54e4	1.22e5	6.24e4	4.76e4	2.39e4
2018041-021	Mud	4.51	4.56	200097	9.37e3	4.95e4	6.79e3	2.51e4	1.02e5	5.56e4	7.33e4	1.22e5	6.30e4	2.76e4	5.72e4	4.08e4	2.40e5	1.15e5	9.04e4	4.30e4
2018041-021	Mud	6.72	6.77	200098	7.82e3	5.08e4	6.78e3	2.23e4	1.05e5	6.91e4	8.76e4	1.56e5	7.79e4	3.58e4	7.84e4	5.99e4	3.07e5	1.48e5	1.09e5	4.84e4
Blank Extraction	Blank			201900	4.53e2	9.08e2	5.99e2	0.00e0	1.23e3	0.00e0	5.62e2	3.61e2	2.74e2	0.00e0	0.00e0	0.00e0	3.31e2	2.32e2	2.23e2	0.00e0
2015018-0009	Mud	2.00	2.06	174218	2.37e5	1.42e6	1.30e5	1.53e6	4.64e6	7.90e5	1.08e6	1.44e6	1.08e6	1.17e5	2.16e5	1.23e5	1.10e6	5.67e5	4.71e5	1.99e5
2016011-041	Mud	2.27	2.32	174161	2.84e6	1.50e7	1.40e6	8.27e6	1.51e7	4.41e6	5.57e6	9.90e6	6.29e6	1.55e6	2.44e6	1.67e6	1.27e7	6.48e6	5.14e6	2.32e6
2016011-021	Mud	2.30	2.35	174093	1.29e5	1.13e6	6.48e4	6.39e5	5.13e6	1.04e6	1.39e6	2.15e6	1.36e6	2.31e5	5.40e5	3.15e5	1.69e6	7.57e5	5.42e5	2.71e5

Table 16. continued, GCMS SIR of aromatic compounds (peak area)

				m/z	206			219	184	198			253							
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	1,9- + 4,9- + 4,10-DMP	1,8-DMP	1,2-DMP	Retene	DBT	4-MDBT	(3+2)-MDBT	1-MDBT	C21MA	C22MA	βSC27MA	βSC27DMA	βRC27MA+ βRC27DMA	αSC27MA	βSC28MA+ βSC28DMA+ αRC27DMA	αSC27DMA
2018041-007	Mud	0.38	0.43	200067	5.43e4	2.72e4	2.20e4	3.05e4	2.96e4	2.32e4	1.22e4	1.02e4	5.80e3	5.34e3	2.70e3	6.16e3	6.36e3	3.53e3	1.30e4	3.85e3
2018041-007	Mud	0.34	0.38	200068	2.57e4	1.36e4	1.03e4	2.29e4	1.49e4	1.24e4	6.42e3	5.57e3	4.25e3	3.94e3	1.74e3	3.73e3	3.54e3	1.84e3	7.55e3	2.17e3
2018041-007	Mud	0.32	0.34	200069	3.09e4	1.51e4	1.25e4	2.63e4	1.78e4	1.35e4	6.72e3	6.07e3	5.45e3	5.24e3	2.63e3	5.51e3	5.38e3	3.28e3	1.23e4	2.24e3
2018041-014	Mud	4.88	4.93	200079	1.65e4	9.07e3	7.04e3	3.71e4	1.26e4	7.77e3	4.64e3	3.33e3	1.60e3	1.65e3	9.09e2	2.18e3	2.24e3	1.36e3	3.86e3	6.12e2
2018041-015	Mud	4.66	4.71	200083	4.26e4	2.21e4	1.75e4	2.26e4	1.96e4	1.58e4	9.11e3	7.28e3	4.77e3	4.20e3	3.01e3	6.15e3	6.34e3	3.76e3	9.98e3	2.78e3
2018041-017	Mud	4.01	4.06	200087	3.91e4	2.32e4	1.89e4	3.17e4	2.18e4	1.63e4	9.63e3	7.77e3	3.83e3	3.40e3	2.06e3	4.26e3	4.46e3	2.69e3	7.43e3	2.25e3
2018041-019	Mud	5.49	5.56	200093	3.29e4	1.72e4	1.39e4	2.17e4	1.45e4	1.27e4	6.61e3	5.34e3	3.40e3	3.36e3	2.60e3	5.04e3	5.27e3	2.91e3	8.17e3	1.09e3
2018041-021	Mud	4.51	4.56	200097	6.18e4	2.91e4	1.93e4	1.74e4	1.27e4	1.68e4	8.40e3	6.12e3	8.29e3	7.91e3	4.98e3	1.10e4	1.08e4	5.72e3	1.44e4	2.75e3
2018041-021	Mud	6.72	6.77	200098	7.27e4	3.47e4	2.11e4	1.67e4	1.28e4	1.94e4	8.48e3	6.52e3	6.97e3	7.13e3	4.37e3	9.52e3	9.36e3	4.93e3	1.20e4	3.13e3
Blank Extraction	Blank			201900	2.17e2	7.30e1	0.00e0	3.00e2	1.18e2	2.68e2	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	2.17e5	8.76e4	8.64e4	4.48e5	2.37e5	1.14e5	5.58e4	3.48e4	1.66e4	1.83e4	1.59e4	2.11e4	3.14e4	1.25e4	6.79e4	8.00e3
2016011-041	Mud	2.27	2.32	174161	3.27e6	1.52e6	1.10e6	2.53e6	1.67e6	1.09e6	5.44e5	3.95e5	6.77e5	6.23e5	1.19e5	3.50e5	2.77e5	1.30e5	7.10e5	7.46e4
2016011-021	Mud	2.30	2.35	174093	3.31e5	1.44e5	1.24e5	4.86e5	4.27e5	1.81e5	8.11e4	4.99e4	4.11e4	3.49e4	1.30e4	2.42e4	2.82e4	1.33e4	6.40e4	7.70e3

Table 16. continued, GCMS SIR of aromatic compounds (peak area)

				m/z	253							231								
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	αRC27MA	αSC28MA	βRC28MA+ βRC28DMA	βSC29MA+ βSC29DMA	αSC29MA	αRC28MA+ βRC29MA+ βRC29DMA	αRC29MA	C20TA	C21TA	SC26TA	RC26TA+ SC27TA	M1	M2	SC28TA	RC27TA	M3
2018041-007	Mud	0.38	0.43	200067	2.80e3	4.48e3	5.96e3	3.09e4	8.50e3	2.50e4	8.71e3	9.19e3	6.05e3	1.05e4	2.37e4	0.00e0	7.67e2	4.60e4	1.34e4	7.98e2
2018041-007	Mud	0.34	0.38	200068	1.56e3	2.56e3	3.69e3	1.63e4	4.49e3	1.33e4	4.42e3	4.80e3	3.22e3	5.05e3	1.20e4	0.00e0	3.66e2	2.15e4	6.02e3	4.46e2
2018041-007	Mud	0.32	0.34	200069	2.49e3	3.99e3	4.93e3	2.36e4	6.11e3	1.92e4	5.64e3	6.55e3	3.98e3	6.58e3	1.55e4	0.00e0	4.06e2	2.77e4	8.35e3	4.26e2
2018041-014	Mud	4.88	4.93	200079	1.10e3	1.57e3	1.74e3	1.15e4	3.47e3	9.92e3	3.76e3	2.99e3	1.98e3	3.86e3	8.01e3	0.00e0	2.11e2	1.76e4	3.88e3	0.00e0
2018041-015	Mud	4.66	4.71	200083	3.07e3	2.94e3	4.49e3	3.06e4	1.01e4	2.52e4	8.53e3	1.07e4	6.03e3	1.00e4	2.12e4	0.00e0	0.00e0	4.48e4	1.04e4	0.00e0
2018041-017	Mud	4.01	4.06	200087	2.15e3	2.39e3	3.44e3	2.31e4	7.14e3	1.88e4	6.11e3	8.39e3	5.13e3	7.95e3	1.66e4	0.00e0	2.33e2	3.46e4	8.69e3	3.36e2
2018041-019	Mud	5.49	5.56	200093	2.78e3	2.30e3	3.39e3	2.49e4	8.52e3	2.06e4	7.61e3	8.07e3	4.69e3	8.24e3	1.60e4	0.00e0	3.86e2	3.40e4	8.02e3	0.00e0
2018041-021	Mud	4.51	4.56	200097	4.53e3	3.27e3	6.05e3	4.96e4	1.52e4	3.79e4	1.30e4	1.79e4	1.02e4	1.77e4	3.14e4	1.02e2	5.28e2	7.00e4	1.44e4	0.00e0
2018041-021	Mud	6.72	6.77	200098	3.94e3	3.08e3	5.28e3	4.15e4	1.32e4	3.14e4	1.08e4	1.71e4	1.00e4	1.50e4	2.76e4	0.00e0	6.01e2	5.96e4	1.25e4	0.00e0
Blank Extraction	Blank			201900	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	2.66e2	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	1.19e4	2.35e4	2.60e4	2.21e5	6.64e4	1.55e5	9.62e4	3.55e4	2.87e4	2.51e4	7.37e4	0.00e0	0.00e0	1.51e5	3.57e4	0.00e0
2016011-041	Mud	2.27	2.32	174161	6.20e4	1.43e5	1.84e5	1.34e6	2.90e5	4.39e5	2.73e5	5.93e5	3.53e5	3.80e5	9.67e5	0.00e0	0.00e0	1.18e6	4.84e5	0.00e0
2016011-021	Mud	2.30	2.35	174093	8.41e3	1.67e4	2.68e4	1.50e5	4.07e4	1.01e5	4.56e4	4.14e4	2.40e4	2.99e4	7.58e4	0.00e0	0.00e0	1.43e5	3.53e4	0.00e0

Table 16. continued, GCMS SIR of aromatic compounds (peak area)

				m/z	231		245													
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	M4	RC28TA	3MS-TA	4MS-TA	2,24DMS-TA	3,24DMS+3MR-TA	4,24DMS+4MR-TA	D1-TA	3M24ES-TA	D2-TA	4M24ES-TA	3,24DMR-TA	4,24DMR-TA	D3-TA	D4-TA	2M24ER-TA
2018041-007	Mud	0.38	0.43	200067	9.85e2	3.72e4	2.69e3	4.23e3	3.96e2	5.96e3	3.19e3	0.00e0	1.16e4	1.04e3	4.81e3	3.63e3	3.89e3	1.36e3	8.70e1	1.53e3
2018041-007	Mud	0.34	0.38	200068	4.59e2	1.70e4	1.36e3	2.20e3	5.56e2	3.00e3	3.12e3	3.24e2	5.72e3	7.35e2	2.53e3	8.71e2	1.36e3	5.71e2	6.94e2	5.31e2
2018041-007	Mud	0.32	0.34	200069	4.85e2	2.28e4	1.44e3	2.59e3	4.48e2	3.83e3	3.30e3	0.00e0	7.04e3	9.75e2	3.59e3	2.57e3	2.70e3	8.58e2	9.90e2	6.46e2
2018041-014	Mud	4.88	4.93	200079	0.00e0	1.45e4	7.75e2	1.57e3	1.57e2	1.79e3	1.39e3	6.00e1	4.44e3	0.00e0	3.80e3	4.98e2	1.02e3	1.86e2	7.60e1	3.37e2
2018041-015	Mud	4.66	4.71	200083	7.87e2	3.60e4	2.54e3	3.15e3	5.46e2	4.90e3	3.71e3	0.00e0	1.15e4	2.52e2	3.87e3	2.43e3	2.99e3	7.13e2	0.00e0	9.28e2
2018041-017	Mud	4.01	4.06	200087	5.61e2	2.80e4	2.11e3	2.60e3	5.20e2	3.86e3	3.66e3	1.03e2	8.40e3	1.37e2	3.80e3	1.86e3	3.16e3	5.85e2	0.00e0	1.52e3
2018041-019	Mud	5.49	5.56	200093	5.57e2	2.74e4	1.18e3	2.19e3	5.41e2	3.54e3	2.37e3	0.00e0	8.57e3	2.85e2	2.85e3	1.99e3	9.56e2	6.21e2	0.00e0	1.22e3
2018041-021	Mud	4.51	4.56	200097	2.24e2	5.63e4	4.58e3	3.23e3	9.29e2	7.23e3	2.90e3	0.00e0	1.71e4	0.00e0	5.08e3	3.18e3	1.03e3	7.08e2	0.00e0	2.66e3
2018041-021	Mud	6.72	6.77	200098	9.89e2	4.67e4	2.40e3	2.80e3	6.15e2	6.08e3	2.39e3	0.00e0	1.48e4	5.34e2	4.31e3	2.93e3	9.09e2	4.88e2	5.19e2	2.34e3
Blank Extraction	Blank			201900	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	0.00e0	1.25e5	2.16e3	1.26e4	0.00e0	8.13e3	1.51e4	0.00e0	2.35e4	1.57e3	1.95e4	1.81e3	9.82e3	3.03e3	1.39e3	1.65e3
2016011-041	Mud	2.27	2.32	174161	0.00e0	1.45e6	3.84e4	9.93e4	9.93e3	1.24e5	1.13e5	3.41e3	3.06e5	1.75e4	1.11e5	6.33e4	7.73e4	2.21e4	2.28e4	2.98e4
2016011-021	Mud	2.30	2.35	174093	0.00e0	1.19e5	2.71e3	1.28e4	0.00e0	1.05e4	1.71e4	0.00e0	2.73e4	1.87e3	2.23e4	1.63e3	1.17e4	3.54e3	4.31e3	3.56e3

Table 16. continued, GCMS SIR of aromatic compounds (peak area)

				m/z	245			
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	3M24ER-TA	D5-TA	4M24ER-TA	D6-TA
2018041-007	Mud	0.38	0.43	200067	9.39e3	0.00e0	5.47e3	1.35e3
2018041-007	Mud	0.34	0.38	200068	4.51e3	4.63e2	2.46e3	1.15e3
2018041-007	Mud	0.32	0.34	200069	5.77e3	7.25e2	3.16e3	1.02e3
2018041-014	Mud	4.88	4.93	200079	3.98e3	0.00e0	1.88e3	3.91e2
2018041-015	Mud	4.66	4.71	200083	9.17e3	0.00e0	4.57e3	0.00e0
2018041-017	Mud	4.01	4.06	200087	7.35e3	0.00e0	3.87e3	4.68e2
2018041-019	Mud	5.49	5.56	200093	7.53e3	0.00e0	3.65e3	2.59e2
2018041-021	Mud	4.51	4.56	200097	1.38e4	0.00e0	6.72e3	6.73e2
2018041-021	Mud	6.72	6.77	200098	1.22e4	0.00e0	5.61e3	9.08e2
Blank Extraction	Blank			201900	0.00e0	0.00e0	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	1.66e4	7.43e2	1.20e4	6.23e3
2016011-041	Mud	2.27	2.32	174161	2.34e5	1.99e4	8.73e4	4.50e4
2016011-021	Mud	2.30	2.35	174093	1.55e4	2.59e3	1.30e4	7.40e3

Table 17. GCMS/MS of saturated compounds (peak height)

				m/z	358->217													372->217		
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	24nor27dβS	24nor27dβR	27nor27dβS	27nor27dβR	24nor27ααS	24nor27ββR	24nor27ββS	24nor27ααR	21nor27	27nor27ααS	27nor27ββR	27nor27ββS	27nor27ααR	27dβS	27dβR	27dαR
2018041-007	Mud	0.32	0.34	200069	8.73e3	6.81e3	3.08e4	2.15e4	2.72e3	6.56e3	0.00e0	5.56e3	5.71e3	9.81e3	9.39e3	1.10e4	1.24e4	4.01e5	2.40e5	8.23e4
2018041-014	Mud	4.88	4.93	200079	0.00e0	3.26e3	1.46e4	6.92e3	0.00e0	3.24e3	5.40e3	0.00e0	0.00e0	4.61e3	8.82e3	4.45e3	1.08e4	1.30e5	8.34e4	3.43e4
2018041-021	Mud	4.51	4.56	200097	7.58e3	6.63e3	3.69e4	2.73e4	3.72e3	6.31e3	0.00e0	0.00e0	0.00e0	1.33e4	1.94e4	1.24e4	2.98e4	3.13e5	2.01e5	7.37e4
Blank Extraction	Blank			201900	0.00e0	0.00e0	4.00e3	5.19e3	0.00e0	2.09e3	0.00e0	1.17e3	2.82e3	2.78e3	6.47e3	2.46e3	2.93e3	6.16e4	3.99e4	1.76e4
2015018-0009	Mud	2.00	2.06	174218	4.53e3	0.00e0	1.90e4	9.17e3	0.00e0	0.00e0	5.10e3	0.00e0	6.09e3	0.00e0	9.45e3	4.30e3	4.52e3	1.55e5	1.10e5	3.57e4
2016011-041	Mud	2.27	2.32	174161	4.93e3	7.27e3	3.03e4	1.88e4	0.00e0	4.37e3	0.00e0	3.89e3	7.31e3	8.56e3	1.54e4	7.80e3	9.54e3	2.97e5	1.75e5	6.12e4
2016011-021	Mud	2.30	2.35	174093	1.27e3	0.00e0	4.56e3	3.86e3	0.00e0	2.68e3	3.29e3	3.81e3	3.72e3	0.00e0	4.46e3	2.15e3	0.00e0	5.48e4	3.20e4	1.48e4

Table 17. continued, GCMS/MS of saturated compounds (peak height)

				m/z	372->217					386->217										400->217
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	27dαS	27ααS	27ββR	27ββS	27ααR	28dβS#1	28dβS#2	28dβR#1	28dβR#2	28dαR	28dαS	28ααS	28ββR	28ββS	28ααR	29dβS
2018041-007	Mud	0.32	0.34	200069	1.07e5	7.16e4	7.74e4	6.44e4	1.38e5	1.35e5	1.43e5	8.02e4	9.42e4	6.29e4	4.00e4	3.81e4	7.90e4	6.40e4	8.79e4	2.86e5
2018041-014	Mud	4.88	4.93	200079	3.83e4	5.17e4	2.98e4	3.49e4	9.78e4	4.93e4	4.05e4	2.74e4	3.53e4	1.87e4	1.35e4	1.87e4	3.38e4	3.12e4	4.45e4	1.08e5
2018041-021	Mud	4.51	4.56	200097	1.08e5	1.15e5	9.51e4	7.80e4	2.29e5	7.72e4	9.05e4	5.22e4	6.70e4	4.06e4	2.88e4	4.37e4	8.44e4	5.62e4	9.83e4	3.47e5
Blank Extraction	Blank			201900	2.09e4	2.76e4	2.22e4	2.08e4	3.19e4	2.19e4	3.00e4	2.28e4	1.86e4	1.00e4	1.54e4	1.42e4	2.59e4	2.13e4	2.69e4	5.96e4
2015018-0009	Mud	2.00	2.06	174218	4.91e4	4.28e4	4.92e4	4.57e4	4.86e4	6.95e4	6.20e4	4.73e4	4.90e4	2.92e4	3.17e4	1.94e4	4.04e4	4.55e4	4.29e4	1.43e5
2016011-041	Mud	2.27	2.32	174161	8.84e4	7.22e4	6.98e4	6.45e4	1.24e5	1.23e5	1.20e5	7.59e4	8.63e4	4.90e4	4.63e4	3.26e4	8.85e4	6.64e4	6.05e4	2.55e5
2016011-021	Mud	2.30	2.35	174093	2.19e4	1.63e4	2.41e4	1.94e4	2.32e4	3.17e4	2.85e4	1.75e4	2.67e4	1.38e4	1.26e4	1.46e4	2.90e4	2.89e4	2.29e4	6.06e4

Table 17. continued, GCMS/MS of saturated compounds (peak height)

				m/z	400->217							414->217								
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	29dβR	29dαR	29dαS	29ααS	29ββR	29ββS	29ααR	30dβS	30dβR	30dαR	30dαS	30ααS		30ββR	30ββS	i30ββR
2018041-007	Mud	0.32	0.34	200069	1.58e5	7.26e4	1.15e5	1.31e5	1.29e5	1.26e5	2.30e5	2.65e4	2.25e4	5.85e3	1.66e4	1.94e4	0.00e0	1.64e4	2.01e4	9.12e3
2018041-014	Mud	4.88	4.93	200079	7.76e4	3.48e4	4.61e4	6.34e4	5.51e4	6.17e4	1.17e5	1.38e4	1.33e4	2.17e3	8.69e3	6.63e3	3.12e3	9.05e3	4.63e3	5.99e3
2018041-021	Mud	4.51	4.56	200097	1.95e5	1.06e5	1.59e5	2.64e5	1.74e5	1.74e5	4.24e5	1.12e4	1.31e4	3.77e3	8.84e3	5.45e3	0.00e0	5.32e3	1.31e4	1.18e4
Blank Extraction	Blank			201900	4.13e4	2.03e4	2.72e4	2.60e4	3.57e4	3.15e4	3.38e4	8.74e3	1.06e4	3.90e3	6.33e3	4.96e3	0.00e0	1.22e4	7.54e3	5.65e3
2015018-0009	Mud	2.00	2.06	174218	6.80e4	3.13e4	5.87e4	8.04e4	1.00e5	8.79e4	9.16e4	1.40e4	1.71e4	5.16e3	1.57e4	1.03e4	6.59e3	2.97e4	2.62e4	1.83e4
2016011-041	Mud	2.27	2.32	174161	1.62e5	7.87e4	1.03e5	1.04e5	1.20e5	1.09e5	1.47e5	3.11e4	3.35e4	9.66e3	2.06e4	1.79e4	0.00e0	2.06e4	2.29e4	1.78e4
2016011-021	Mud	2.30	2.35	174093	4.94e4	2.13e4	3.17e4	3.49e4	4.10e4	4.64e4	5.11e4	1.13e4	1.30e4	8.28e3	1.32e4	9.13e3	0.00e0	1.37e4	1.36e4	1.08e4

Table 17. continued, GCMS/MS of saturated compounds (peak height)

				m/z	414->217			386->231							414->231					
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	i30ββS	30ααR	i30ααR	3β28ααS	3β28ββR	3β28ββS	4α28ααS	3β28ααR+4α2 8ββR	4α28ββS	4α28ααR	2α30ααS	3β30ααS	2αβ30ββR	2αβ30ββS	3ββ30ββR	3ββ30ββS
2018041-007	Mud	0.32	0.34	200069	7.31e3	1.32e4	0.00e0	1.55e4	1.25e4	1.48e4	1.03e4	2.48e4	1.17e4	1.01e4	4.55e3	3.19e4	6.89e3	0.00e0	2.29e4	1.34e4
2018041-014	Mud	4.88	4.93	200079	2.92e3	1.20e4	0.00e0	9.27e3	7.80e3	6.75e3	5.70e3	8.95e3	6.48e3	5.86e3	2.89e3	1.23e4	3.89e3	1.41e3	1.11e4	0.00e0
2018041-021	Mud	4.51	4.56	200097	6.73e3	1.25e4	0.00e0	1.12e4	1.44e4	1.03e4	1.26e4	2.16e4	5.91e3	7.90e3	0.00e0	3.66e4	5.46e3	7.65e3	1.97e4	4.98e3
Blank Extraction	Blank			201900	0.00e0	1.10e4	0.00e0	0.00e0	4.03e3	4.22e3	5.83e3	9.58e3	6.34e3	6.74e3	0.00e0	8.83e3	6.34e3	0.00e0	9.52e3	0.00e0
2015018-0009	Mud	2.00	2.06	174218	1.01e4	2.04e4	0.00e0	7.63e3	1.18e4	8.13e3	6.98e3	2.05e4	4.93e3	7.37e3	0.00e0	1.52e4	6.84e3	0.00e0	1.88e4	1.45e4
2016011-041	Mud	2.27	2.32	174161	6.76e3	1.96e4	0.00e0	9.76e3	1.39e4	1.34e4	1.62e4	2.02e4	1.11e4	1.55e4	0.00e0	2.53e4	1.02e4	4.77e3	2.02e4	0.00e0
2016011-021	Mud	2.30	2.35	174093	4.90e3	1.69e4	3.31e3	7.90e3	2.78e3	5.64e3	6.30e3	7.79e3	6.07e3	5.62e3	0.00e0	9.61e3	7.64e3	0.00e0	1.40e4	9.01e3

Table 17. continued, GCMS/MS of saturated compounds (peak height)

				m/z	414->231									414->259					274->123	
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	4α30ααS	4αβ30ββR	2α30ααR+4αβ30ββS	3β30ααR	4αSS30R	4αSR30R	4α30ααR	4αRR30R	4αRS30R	3βPrαS	3βPrββR	Ta	Tb+3βPrββS	3βPrααR	Bey	βPhyl
2018041-007	Mud	0.32	0.34	200069	7.17e3	1.21e4	2.48e4	3.47e4	0.00e0	0.00e0	1.02e4	1.06e4	9.07e3	3.44e3	1.05e4	1.07e4	1.22e4	5.17e3	1.33e5	3.41e4
2018041-014	Mud	4.88	4.93	200079	5.12e3	7.06e3	1.08e4	1.46e4	0.00e0	4.02e3	6.19e3	0.00e0	0.00e0	0.00e0	2.28e3	3.39e3	4.66e3	1.64e3	4.70e3	3.47e3
2018041-021	Mud	4.51	4.56	200097	1.03e4	6.96e3	1.91e4	4.84e4	0.00e0	5.89e3	1.95e4	8.31e3	0.00e0	5.67e3	1.21e4	1.14e4	1.04e4	7.04e3	1.34e4	5.04e3
Blank Extraction	Blank			201900	0.00e0	8.23e3	7.94e3	6.53e3	0.00e0	0.00e0	0.00e0	0.00e0	2.94e3	0.00e0	2.39e3	0.00e0	2.62e3	0.00e0	0.00e0	6.34e2
2015018-0009	Mud	2.00	2.06	174218	9.21e3	1.55e4	1.91e4	2.61e4	8.15e3	0.00e0	1.23e4	6.23e3	6.40e3	0.00e0	1.16e4	6.64e3	1.60e4	3.84e3	6.59e3	0.00e0
2016011-041	Mud	2.27	2.32	174161	1.15e4	1.13e4	2.04e4	3.65e4	0.00e0	0.00e0	1.39e4	1.07e4	7.15e3	4.32e3	1.24e4	8.25e3	1.36e4	5.97e3	1.69e5	3.05e4
2016011-021	Mud	2.30	2.35	174093	8.70e3	8.02e3	1.39e4	2.15e4	0.00e0	0.00e0	7.32e3	5.19e3	6.00e3	0.00e0	6.99e3	2.38e3	9.07e3	2.88e3	2.31e3	0.00e0

Table 17. continued, GCMS/MS of saturated compounds (peak height)

				m/z	274->123			276->123				330->191				370->191		384->177	384->191	398->177
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	βKau	αPhyl	αKau	Rim	IP	Ab	20/3	24O	24L	24U	24/4	27Ts	27Tm	25nor29αβ	28αβ	25nor30αβ
2018041-007	Mud	0.32	0.34	200069	4.81e4	7.96e3	0.00e0	6.59e4	6.93e4	6.19e4	1.99e4	6.99e4	3.64e4	1.08e4	7.86e4	2.02e5	2.12e5	1.36e4	4.60e4	2.91e5
2018041-014	Mud	4.88	4.93	200079	2.98e3	0.00e0	0.00e0	5.39e3	0.00e0	0.00e0	3.12e3	3.09e3	0.00e0	0.00e0	1.61e4	4.08e4	5.62e4	5.16e3	3.19e4	2.26e4
2018041-021	Mud	4.51	4.56	200097	9.61e3	3.10e3	0.00e0	2.58e4	0.00e0	0.00e0	1.22e4	5.37e3	9.99e3	1.44e4	5.03e4	1.21e5	1.64e5	1.43e4	2.50e4	2.54e4
Blank Extraction	Blank			201900	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	6.10e3	2.32e4	1.83e4	0.00e0	2.35e4	1.88e4
2015018-0009	Mud	2.00	2.06	174218	3.65e3	0.00e0	0.00e0	0.00e0	3.70e3	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	1.65e4	7.14e4	4.43e4	5.87e3	2.96e4	4.56e4
2016011-041	Mud	2.27	2.32	174161	5.75e4	8.74e3	0.00e0	6.93e4	6.99e4	6.75e4	2.01e4	1.28e4	0.00e0	8.00e3	3.52e4	1.36e5	1.06e5	1.10e4	3.42e4	7.23e4
2016011-021	Mud	2.30	2.35	174093	0.00e0	0.00e0	0.00e0	0.00e0	3.61e3	0.00e0	2.88e3	0.00e0	0.00e0	0.00e0	3.10e3	3.50e4	2.68e4	6.93e3	1.87e4	3.07e4

Table 17. continued, GCMS/MS of saturated compounds (peak height)

				m/z	398->191			412->191					426->191			426->205				
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	29αβ	29Ts	29βα	30D	30O	30αβ	30βα	30G	31αβS	31αβR	31βα	2aM30αβ	31αβS	31αβR	3βM30αβ	31βα
2018041-007	Mud	0.32	0.34	200069	4.40e5	1.90e5	1.69e5	6.89e4	7.43e4	8.25e5	1.03e5	3.67e4	2.36e5	4.74e5	6.05e4	3.51e4	1.04e5	2.32e5	2.15e4	4.55e4
2018041-014	Mud	4.88	4.93	200079	1.17e5	3.98e4	8.24e4	1.60e4	0.00e0	2.18e5	3.36e4	8.23e3	7.71e4	3.43e5	3.46e4	5.62e3	3.38e4	1.57e5	8.36e3	2.99e4
2018041-021	Mud	4.51	4.56	200097	3.47e5	1.28e5	1.11e5	4.57e4	0.00e0	7.39e5	8.13e4	3.58e4	2.59e5	3.13e5	5.42e4	2.82e4	1.05e5	1.63e5	3.04e4	3.56e4
Blank Extraction	Blank			201900	3.82e4	2.16e4	4.18e3	8.98e3	0.00e0	8.58e4	5.86e3	0.00e0	2.95e4	1.80e4	4.22e3	3.86e3	1.13e4	1.19e4	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	2.10e5	9.04e4	4.11e4	3.90e4	0.00e0	5.13e5	3.35e4	4.35e4	2.25e5	2.36e5	2.68e4	2.03e4	7.89e4	9.33e4	1.09e4	2.47e4
2016011-041	Mud	2.27	2.32	174161	2.96e5	1.36e5	7.13e4	6.45e4	0.00e0	6.87e5	6.80e4	7.19e4	3.08e5	3.78e5	5.06e4	2.40e4	1.41e5	1.73e5	1.91e4	3.34e4
2016011-021	Mud	2.30	2.35	174093	1.16e5	4.03e4	2.64e4	2.21e4	0.00e0	2.56e5	2.23e4	1.60e4	1.00e5	1.08e5	1.64e4	9.57e3	4.81e4	4.99e4	1.03e4	1.40e4

Table 17. continued, GCMS/MS of saturated compounds (peak height)

				m/z	440->191			454->191		468->191		482->191	
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	32αβS	32αβR	32βα	33αβS	33αβR	34αβS	34αβR	35αβS	35αβR
2018041-007	Mud	0.32	0.34	200069	1.21e5	1.19e5	1.49e4	6.15e4	3.48e4	2.84e4	2.38e4	2.10e4	1.33e4
2018041-014	Mud	4.88	4.93	200079	4.30e4	4.16e4	8.88e3	2.15e4	1.93e4	1.74e4	9.71e3	1.23e4	6.59e3
2018041-021	Mud	4.51	4.56	200097	1.59e5	1.13e5	1.40e4	7.08e4	6.57e4	3.85e4	3.24e4	2.08e4	1.39e4
Blank Extraction	Blank			201900	1.69e4	1.45e4	4.01e3	1.55e4	1.07e4	9.97e3	5.90e3	8.85e3	5.51e3
2015018-0009	Mud	2.00	2.06	174218	1.59e5	1.20e5	9.19e3	1.29e5	8.47e4	9.77e4	5.48e4	8.43e4	5.10e4
2016011-041	Mud	2.27	2.32	174161	2.04e5	1.51e5	1.98e4	1.58e5	1.12e5	1.01e5	7.82e4	8.22e4	6.16e4
2016011-021	Mud	2.30	2.35	174093	8.37e4	6.20e4	0.00e0	5.74e4	4.29e4	4.17e4	3.15e4	3.46e4	3.04e4

Abbreviations of saturated biomarkers analysed by GC-MS/MS

13β,17α-20(S)-24-nordiacolestane	24nor27dβS
13β,17α-20(R)-24-nordiacolestane	24nor27dβR
13β,17α-20(S)-27-nordiacolestane	27nor27dβS
13β,17α-20(R)-27-nordiacolestane	27nor27dβR
5α,14α,17α-20(S)-24-norcholestane	24nor27ααS
5α,14β,17β-20(R)-24-norcholestane	24nor27ββR
5α,14β,17β-20(S)-24-norcholestane	24nor27ββS
5α,14α,17α-20(R)-24-norcholestane	24nor27ααR
21-norcholestane	21nor27
5α,14α,17α-20(S)-27-norcholestane	27nor27ααS
5α,14β,17β-20(R)-27-norcholestane	27nor27ββR
5α,14β,17β-20(S)-27-norcholestane	27nor27ββS
5α,14α,17α-20(R)-27-norcholestane	27nor27ααR
13β,17α-20(S)-diacholestane	27dβS
13β,17α-20(R)-diacholestane	27dβR
13α,17β-20(R)-diacholestane	27dαR
13α,17β-20(S)-diacholestane	27dαS
5α,14α,17α-20(S)-cholestane	27ααS
5α,14β,17β-20(R)-cholestane	27ββR
5α,14β,17β-20(S)-cholestane	27ββS
5α,14α,17α-20(R)-cholestane	27ααR
24-methyl-13β,17α-20(S)-diacholestane	28dβS
24-methyl-13β,17α-20(R)-diacholestane	28dβR
24-methyl-13α,17β-20(R)-diacholestane	28dαR
24-methyl-13α,17β-20(S)-diacholestane	28dαS
24-methyl-5α,14α,17α-20(S)-cholestane	28ααS
24-methyl-5α,14β,17β-20(R)-cholestane	28ββR
24-methyl-5α,14β,17β-20(S)-cholestane	28ββS
24-methyl-5α,14α,17α-20(R)-cholestane	28ααR
24-ethyl-13β,17α-20(S)-diacholestane	29dβS
24-ethyl-13β,17α-20(R)-diacholestane	29dβR
24-ethyl-13α,17β-20(R)-diacholestane	29dαR
24-ethyl-13α,17β-20(S)-diacholestane	29dαS
24-ethyl-5α,14α,17α-20(S)-cholestane	29ααS
24-ethyl-5α,14β,17β-20(R)-cholestane	29ββR
24-ethyl-5α,14β,17β-20(S)-cholestane	29ββS
24-ethyl-5α,14α,17α-20(R)-cholestane	29ααR
24-n-propyl-13β,17α-20(S)-diacholestane	30dβS
24-n-propyl-13β,17α-20(R)-diacholestane	30dβR
24-n-propyl-13α,17β-20(R)-diacholestane	30dαR

24-n-propyl-13α,17β-20(S)-diacholestane	30dαS
24-n-propyl-5α,14α,17α-20(S)-cholestane	30ααS
24-i-propyl-5α,14α,17α-20(S)-cholestane	i30ααS
24-n-propyl-5α,14β,17β-20(R)-cholestane	30ββR
24-n-propyl-5α,14β,17β-20(S)-cholestane	30ββS
24-i-propyl-5α,14β,17β-20(R)-cholestane	i30ββR
24-i-propyl-5α,14β,17β-20(S)-cholestane	i30ββS
24-n-propyl-5α,14α,17α-20(R)-cholestane	30ααR
24-i-propyl-5α,14α,17α-20(R)-cholestane	i30ααR
3β-methyl-5α,14α,17α-20(S)-cholestane	3β28ααS
3β-methyl-5α,14β,17β-20(R)-cholestane	3β28ββR
3β-methyl-5α,14β,17β-20(S)-cholestane	3β28ββS
4α-methyl-5α,14α,17α-20(S)-cholestane	4α28ααS
3β-methyl-5α,14α,17α-20(R)-cholestane	3β28ααR
4α-methyl-5α,14β,17β-20(R)-cholestane	4α28ββR
4α-methyl-5α,14β,17β-20(S)-cholestane	4α28ββS
4α-methyl-5α,14α,17α-20(R)-cholestane	4α28ααR
2α-methyl-24-ethyl-20(S)-cholestane	2α30ααS
3β-methyl-24-ethyl-20(S)-cholestane	3β30ααS
2α-methyl-24-ethyl-14β,17β-20(R)-cholestane	2αβ30ββR
2α-methyl-24-ethyl-14β,17β-20(S)-cholestane	2αβ30ββS
3β-methyl-24-ethyl-14β,17β-20(R)-cholestane	3ββ30ββR
3β-methyl-24-ethyl-14β,17β-20(S)-cholestane	3ββ30ββS
4α-methyl-24-ethyl-20(S)-cholestane	4α30ααS
4α-methyl-24-ethyl-14β,17β-20(R)-cholestane	4αβ30ββR
2α-methyl-24-ethyl-20(R)-cholestane	2α30ααR
4α-methyl-24-ethyl-14β,17β-20(S)-cholestane	4αβ30ββS
3β-methyl-24-ethyl-20(R)-cholestane	3β30ααR
4α,23(S),24(S)-trimethyl-20(R)-cholestane	4αSS30R
4α,23(S),24(R)-trimethyl-20(R)-cholestane	4αSR30R
4α-methyl-24-ethyl-20(R)-cholestane	4α30ααR
4α,23(R),24(R)-trimethyl-20(R)-cholestane	4αRR30R
4α,23(R),24(S)-trimethyl-20(R)-cholestane	4αRS30R
3β-n-propyl-14α,17α-20(S)-cholestane	3βPrααS
3β-n-propyl-14β,17β-20(R)-cholestane	3βPrββR
18α,21(R) C_{30} tetracyclic polyprenoid	Ta
18α,21(S) C_{30} tetracyclic polyprenoid	Tb
3β-n-propyl-14β,17β-20(S)-cholestane	3βPrββS
3β-n-propyl-14α,17α-20(R)-cholestane	3βPrααR
beyerane	Bey

16β-phyllocladane	βPhyl
16β-kaurane	βKau
16α-phyllocladane	αPhyl
16α-kaurane	αKau
rimuane	Rim
isopimarane	IP
abietane	Ab
C_{20} cheilanthane (tricyclic terpane)	20/3
10β-de-A-oleanane	24O
10β-de-A-lupane	24L
10β-de-A-ursane	24U
10β-de-E-hopane	24/4
18α-22,29,30-trinorneohopane	27Ts
17α-22,29,30-trinorhopane	27Tm
17α, 21β-25,30-bisnorhopane	25nor29αβ
17α-28,30-dinorhopane	28αβ
17α-25-norhopane	25nor30αβ
17α-30-norhopane	29αβ
18α-30-norneohopane	29Ts
17β-30-normoretane	29βα
15α-methyl-17α-27-norhopane	30d
oleanane	30O
17α-hopane	30αβ
17β-moretane	30βα
gammacerane	30G
17α-22(S)-homohopane	31αβS
17α-22(R)-homohopane	31αβR
17β-homomoretane	31βα
2α-methyl-17α-hopane	2αM30αβ
3β-methyl-17α-hopane	3βM30αβ
17α-22(S)-dihomohopane	32αβS
17α-22(R)-dihomohopane	32αβR
17β-dihomomoretane	32βα
17α-22(S)-trihomohopane	33αβS
17α-22(R)-trihomohopane	33αβR
17α-22(S)-tetrahomohopane	34αβS
17α-22(R)-tetrahomohopane	34αβR
17α-22(S)-pentahomohopane	35αβS
17α-22(R)-pentahomohopane	35αβR

Table 18. GCMS/MS of saturated compounds (peak area)

				m/z	358->217													372->217		
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	24nor27dβS	24nor27dβR	27nor27dβS	27nor27dβR	24nor27ααS	24nor27ββR	24nor27ββS	24nor27ααR	21nor27	27nor27ααS	27nor27ββR	27nor27ββS	27nor27ααR	27dβS	27dβR	27dαR
2018041-007	Mud	0.32	0.34	200069	4.27e4	3.16e4	1.05e5	1.09e5	6.25e3	1.90e4	0.00e0	2.33e4	1.82e4	2.49e4	4.32e4	4.40e4	4.79e4	1.61e6	1.00e6	3.70e5
2018041-014	Mud	4.88	4.93	200079	0.00e0	8.39e3	6.31e4	3.03e4	0.00e0	2.02e4	1.82e4	0.00e0	0.00e0	1.99e4	3.59e4	1.23e4	3.67e4	5.11e5	3.27e5	1.28e5
2018041-021	Mud	4.51	4.56	200097	3.55e4	1.72e4	1.64e5	1.23e5	1.94e4	3.29e4	0.00e0	0.00e0	0.00e0	6.02e4	7.74e4	5.34e4	1.21e5	1.31e6	9.00e5	3.35e5
Blank Extraction	Blank			201900	0.00e0	0.00e0	1.54e4	1.23e4	0.00e0	4.99e3	0.00e0	1.99e3	9.65e3	7.60e3	2.37e4	7.88e3	1.27e4	2.57e5	2.01e5	6.58e4
2015018-0009	Mud	2.00	2.06	174218	9.57e3	0.00e0	6.43e4	5.79e4	0.00e0	0.00e0	1.57e4	0.00e0	1.34e4	0.00e0	2.96e4	1.46e4	1.82e4	6.98e5	4.55e5	1.62e5
2016011-041	Mud	2.27	2.32	174161	1.61e4	4.33e4	1.04e5	9.15e4	0.00e0	2.00e4	0.00e0	9.40e3	3.18e4	5.89e4	3.29e4	2.34e4	4.26e4	1.41e6	8.64e5	2.77e5
2016011-021	Mud	2.30	2.35	174093	2.49e3	0.00e0	1.46e4	1.24e4	0.00e0	5.13e3	9.11e3	1.45e4	1.16e4	0.00e0	1.52e4	7.27e3	0.00e0	2.12e5	1.56e5	7.80e4

Table 18. continued, GCMS/MS of saturated compounds (peak area)

				m/z	372->217					386->217										400->217
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	27dαS	27ααS	27ββR	27ββS	27ααR	28dβS#1	28dβS#2	28dβR#1	28dβR#2	28dαR	28dαS	28ααS	28ββR	28ββS	28ααR	29dβS
2018041-007	Mud	0.32	0.34	200069	4.47e5	4.76e5	3.24e5	3.05e5	5.81e5	5.39e5	6.25e5	3.43e5	3.97e5	3.24e5	1.86e5	1.38e5	5.36e5	3.21e5	5.60e5	1.59e6
2018041-014	Mud	4.88	4.93	200079	1.53e5	3.11e5	1.35e5	1.57e5	4.03e5	1.76e5	1.82e5	1.08e5	1.48e5	9.60e4	5.56e4	7.49e4	1.64e5	1.27e5	2.82e5	6.52e5
2018041-021	Mud	4.51	4.56	200097	4.69e5	7.03e5	4.08e5	3.40e5	9.81e5	3.27e5	3.84e5	1.92e5	2.90e5	2.03e5	1.05e5	1.76e5	3.90e5	2.59e5	6.32e5	1.86e6
Blank Extraction	Blank			201900	8.49e4	1.48e5	9.41e4	1.09e5	1.28e5	1.12e5	1.34e5	9.72e4	9.03e4	3.64e4	6.96e4	5.26e4	1.35e5	1.11e5	1.38e5	3.30e5
2015018-0009	Mud	2.00	2.06	174218	2.29e5	2.62e5	2.50e5	1.90e5	2.26e5	2.72e5	2.85e5	2.00e5	1.96e5	1.80e5	1.25e5	9.95e4	2.45e5	2.17e5	2.44e5	8.36e5
2016011-041	Mud	2.27	2.32	174161	4.36e5	4.86e5	3.43e5	3.44e5	5.50e5	5.27e5	5.93e5	3.10e5	4.49e5	3.59e5	2.09e5	1.63e5	5.40e5	3.30e5	3.91e5	1.64e6
2016011-021	Mud	2.30	2.35	174093	9.59e4	9.61e4	9.90e4	8.95e4	1.01e5	1.16e5	1.21e5	9.69e4	1.12e5	8.12e4	1.17e5	5.73e4	1.94e5	1.23e5	1.47e5	3.72e5

Table 18. continued, GCMS/MS of saturated compounds (peak area)

				m/z	400->217							414->217								
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	29dβR	29dαR	29dαS	29ααS	29ββR	29ββS	29ααR	30dβS	30dβR	30dαR	30dαS	30ααS		30ββR	30ββS	i30ββR
2018041-007	Mud	0.32	0.34	200069	6.30e5	3.71e5	5.56e5	7.01e5	6.74e5	9.98e5	1.19e6	9.75e4	1.02e5	1.88e4	5.18e4	6.59e4	0.00e0	7.61e4	5.79e4	5.30e4
2018041-014	Mud	4.88	4.93	200079	5.33e5	1.66e5	2.32e5	3.54e5	2.23e5	3.21e5	5.87e5	4.94e4	6.85e4	9.21e3	4.08e4	2.61e4	1.09e4	5.38e4	1.26e4	1.47e4
2018041-021	Mud	4.51	4.56	200097	1.45e6	5.16e5	7.39e5	1.34e6	1.31e6	8.68e5	2.16e6	2.36e4	9.14e4	1.09e4	4.38e4	2.04e4	0.00e0	1.99e4	5.29e4	5.92e4
Blank Extraction	Blank			201900	2.13e5	8.03e4	1.50e5	1.64e5	1.57e5	2.67e5	1.99e5	3.12e4	3.91e4	1.18e4	2.88e4	2.69e4	0.00e0	3.92e4	3.70e4	3.10e4
2015018-0009	Mud	2.00	2.06	174218	5.64e5	1.68e5	2.80e5	4.35e5	4.44e5	5.89e5	4.57e5	5.71e4	5.79e4	2.33e4	6.58e4	6.69e4	3.12e4	1.37e5	1.15e5	6.97e4
2016011-041	Mud	2.27	2.32	174161	7.05e5	3.96e5	5.34e5	5.74e5	6.27e5	7.61e5	7.88e5	1.22e5	2.30e5	3.78e4	8.70e4	7.55e4	0.00e0	1.09e5	8.27e4	8.09e4
2016011-021	Mud	2.30	2.35	174093	3.15e5	1.04e5	1.77e5	1.80e5	2.12e5	2.12e5	2.99e5	2.17e4	4.24e4	1.80e4	5.44e4	4.69e4	0.00e0	1.18e5	5.30e4	3.99e4

Table 18. continued, GCMS/MS of saturated compounds (peak area)

				m/z	414->217			386->231							414->231					
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	i30ββS	30ααR	i30ααR	3β28ααS	3β28ββR	3β28ββS	4α28ααS	3β28ααR+4α2 8ββR	4α28ββS	4α28ααR	2α30ααS	3β30ααS	2αβ30ββR	2αβ30ββS	3ββ30ββR	3ββ30ββS
2018041-007	Mud	0.32	0.34	200069	1.06e4	7.75e4	0.00e0	6.50e4	4.46e4	6.05e4	4.55e4	9.62e4	5.75e4	4.22e4	1.26e4	1.78e5	2.41e4	0.00e0	1.22e5	2.17e4
2018041-014	Mud	4.88	4.93	200079	7.66e3	3.86e4	0.00e0	3.29e4	3.36e4	1.81e4	2.46e4	4.29e4	3.40e4	2.08e4	6.72e3	6.44e4	9.60e3	3.54e3	3.31e4	0.00e0
2018041-021	Mud	4.51	4.56	200097	2.25e4	5.32e4	0.00e0	5.95e4	5.38e4	3.63e4	3.82e4	9.96e4	2.66e4	2.01e4	0.00e0	1.93e5	1.90e4	2.54e4	8.59e4	2.06e4
Blank Extraction	Blank			201900	0.00e0	4.82e4	0.00e0	0.00e0	1.32e4	7.19e3	1.61e4	3.97e4	3.39e4	1.97e4	0.00e0	3.79e4	1.68e4	0.00e0	3.98e4	0.00e0
2015018-0009	Mud	2.00	2.06	174218	2.49e4	1.22e5	0.00e0	3.59e4	4.79e4	4.43e4	1.69e4	8.65e4	1.92e4	5.28e4	0.00e0	8.80e4	3.14e4	0.00e0	6.44e4	3.27e4
2016011-041	Mud	2.27	2.32	174161	1.51e4	1.01e5	0.00e0	6.53e4	6.15e4	4.65e4	4.38e4	1.04e5	5.98e4	6.32e4	0.00e0	1.37e5	4.70e4	6.87e3	1.25e5	0.00e0
2016011-021	Mud	2.30	2.35	174093	1.59e4	6.62e4	1.19e4	1.86e4	1.07e4	1.75e4	2.42e4	1.95e4	1.99e4	2.16e4	0.00e0	4.17e4	1.94e4	0.00e0	9.48e4	4.14e4

Table 18. continued, GCMS/MS of saturated compounds (peak area)

				m/z	414->231									414->259					274->123	
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	4α30ααS	4αβ30ββR	2α30ααR+4αβ30ββS	3β30ααR	4αSS30R	4αSR30R	4α30ααR	4αRR30R	4αRS30R	3βPrαS	3βPrββR	Ta	Tb+3βPrββS	3βPrαR	Bey	βPhyl
2018041-007	Mud	0.32	0.34	200069	2.31e4	4.31e4	9.93e4	1.77e5	0.00e0	0.00e0	5.70e4	2.93e4	2.79e4	1.60e4	1.91e4	1.74e4	4.34e4	1.50e4	5.84e5	1.32e5
2018041-014	Mud	4.88	4.93	200079	1.99e4	2.42e4	3.59e4	7.70e4	0.00e0	1.17e4	1.59e4	0.00e0	0.00e0	0.00e0	6.26e3	5.68e3	1.64e4	6.61e3	1.77e4	1.33e4
2018041-021	Mud	4.51	4.56	200097	5.68e4	2.26e4	8.65e4	2.31e5	0.00e0	1.73e4	8.69e4	3.29e4	0.00e0	2.04e4	6.20e4	2.36e4	4.55e4	3.06e4	5.92e4	2.31e4
Blank Extraction	Blank			201900	0.00e0	3.46e4	4.09e4	2.60e4	0.00e0	0.00e0	0.00e0	0.00e0	1.02e4	0.00e0	7.80e3	0.00e0	5.46e3	0.00e0	0.00e0	1.23e3
2015018-0009	Mud	2.00	2.06	174218	6.87e4	6.97e4	5.42e4	1.36e5	2.90e4	0.00e0	5.32e4	3.38e4	3.12e4	0.00e0	4.22e4	1.04e4	5.80e4	2.05e4	3.16e4	0.00e0
2016011-041	Mud	2.27	2.32	174161	4.93e4	4.22e4	9.24e4	2.13e5	0.00e0	0.00e0	4.99e4	4.32e4	2.83e4	1.04e4	5.97e4	1.48e4	7.85e4	3.76e4	7.36e5	1.22e5
2016011-021	Mud	2.30	2.35	174093	2.49e4	3.73e4	6.66e4	7.21e4	0.00e0	0.00e0	4.01e4	2.40e4	2.13e4	0.00e0	2.80e4	4.19e3	2.15e4	9.56e3	4.76e3	0.00e0

Table 18. continued, GCMS/MS of saturated compounds (peak area)

				m/z	274->123			276->123				330->191				370->191		384->177	384->191	398->177
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	βKau	αPhyl	αKau	Rim	IP	Ab	20/3	24O	24L	24U	24/4	27Ts	27Tm	25nor29αβ	28αβ	25nor30αβ
2018041-007	Mud	0.32	0.34	200069	2.36e5	3.46e4	0.00e0	3.03e5	3.03e5	2.36e5	7.24e4	2.86e5	1.54e5	4.28e4	3.05e5	9.04e5	8.95e5	6.53e4	2.25e5	1.30e6
2018041-014	Mud	4.88	4.93	200079	1.24e4	0.00e0	0.00e0	2.29e4	0.00e0	0.00e0	1.67e4	7.14e3	0.00e0	0.00e0	5.90e4	1.78e5	2.62e5	1.17e4	1.52e5	9.71e4
2018041-021	Mud	4.51	4.56	200097	2.99e4	8.82e3	0.00e0	9.29e4	0.00e0	0.00e0	4.08e4	1.90e4	2.85e4	6.73e4	2.24e5	5.45e5	6.81e5	5.02e4	1.55e5	1.18e5
Blank Extraction	Blank			201900	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	2.12e4	1.07e5	7.42e4	0.00e0	1.11e5	9.01e4
2015018-0009	Mud	2.00	2.06	174218	1.42e4	0.00e0	0.00e0	0.00e0	1.26e4	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	7.39e4	3.08e5	1.98e5	2.54e4	1.67e5	2.14e5
2016011-041	Mud	2.27	2.32	174161	2.69e5	2.31e4	0.00e0	3.66e5	3.43e5	2.73e5	8.40e4	7.24e4	0.00e0	1.92e4	1.68e5	6.11e5	5.39e5	6.06e4	1.70e5	3.52e5
2016011-021	Mud	2.30	2.35	174093	0.00e0	0.00e0	0.00e0	0.00e0	9.02e3	0.00e0	1.18e4	0.00e0	0.00e0	0.00e0	1.43e4	1.73e5	1.10e5	2.77e4	8.68e4	1.29e5

Table 18. continued, GCMS/MS of saturated compounds (peak area)

				m/z	398->191			412->191					426->191			426->205				
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	29αβ	29Ts	29βα	30D	30O	30αβ	30βα	30G	31αβS	31αβR	31βα	2aM30αβ	31αβS	31αβR	3βM30αβ	31βα
2018041-007	Mud	0.32	0.34	200069	1.97e6	8.83e5	7.91e5	2.78e5	4.48e5	3.46e6	4.60e5	1.51e5	1.02e6	2.09e6	3.13e5	1.35e5	4.39e5	9.75e5	1.11e5	2.21e5
2018041-014	Mud	4.88	4.93	200079	5.04e5	1.67e5	3.73e5	6.63e4	0.00e0	9.43e5	1.50e5	4.34e4	3.06e5	1.47e6	1.76e5	3.49e4	1.24e5	6.83e5	2.98e4	1.26e5
2018041-021	Mud	4.51	4.56	200097	1.47e6	6.09e5	5.33e5	2.22e5	0.00e0	3.26e6	3.93e5	1.66e5	1.09e6	1.40e6	2.88e5	1.51e5	4.75e5	6.83e5	2.02e5	2.00e5
Blank Extraction	Blank			201900	1.91e5	9.88e4	1.19e4	4.42e4	0.00e0	3.86e5	2.60e4	0.00e0	1.27e5	8.76e4	1.36e4	1.10e4	4.54e4	5.05e4	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	1.01e6	4.64e5	2.01e5	2.25e5	0.00e0	2.41e6	1.93e5	2.62e5	1.00e6	1.16e6	1.60e5	8.59e4	4.14e5	4.77e5	3.50e4	1.15e5
2016011-041	Mud	2.27	2.32	174161	1.49e6	5.88e5	3.61e5	3.20e5	0.00e0	3.37e6	3.38e5	3.53e5	1.45e6	1.68e6	2.96e5	1.23e5	6.40e5	8.09e5	1.49e5	1.70e5
2016011-021	Mud	2.30	2.35	174093	5.44e5	2.23e5	1.37e5	1.11e5	0.00e0	1.24e6	1.16e5	1.02e5	4.76e5	5.05e5	7.60e4	6.80e4	2.25e5	2.17e5	4.87e4	6.34e4

Table 18. continued, GCMS/MS of saturated compounds (peak area)

				m/z	440->191			454->191		468->191		482->191	
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	32αβS	32αβR	32βα	33αβS	33αβR	34αβS	34αβR	35αβS	35αβR
2018041-007	Mud	0.32	0.34	200069	5.44e5	4.80e5	7.72e4	2.77e5	1.90e5	1.45e5	1.23e5	1.14e5	6.73e4
2018041-014	Mud	4.88	4.93	200079	1.73e5	1.70e5	3.55e4	9.60e4	8.74e4	9.38e4	4.82e4	6.58e4	2.43e4
2018041-021	Mud	4.51	4.56	200097	6.47e5	5.26e5	7.06e4	3.38e5	2.77e5	1.81e5	1.54e5	1.25e5	8.45e4
Blank Extraction	Blank			201900	8.61e4	7.41e4	9.34e3	6.43e4	5.34e4	4.64e4	2.32e4	4.14e4	2.53e4
2015018-0009	Mud	2.00	2.06	174218	7.96e5	6.00e5	3.74e4	5.94e5	4.55e5	4.64e5	3.03e5	4.96e5	3.00e5
2016011-041	Mud	2.27	2.32	174161	9.92e5	7.82e5	7.25e4	7.40e5	5.28e5	5.20e5	3.97e5	5.34e5	3.77e5
2016011-021	Mud	2.30	2.35	174093	3.49e5	2.81e5	0.00e0	2.38e5	1.99e5	2.11e5	1.42e5	1.95e5	1.35e5

Table 19. GCMS SIR of diamandoids (peak height)

				m/z	136	135				149					163					177
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	A	1-MA	2-MA	1-EtA	2-EtA	1,3-DMA	cis-1,4-DMA	trans-1,4-DMA	1,2-DMA	1-Et, 3-MA	1,3,5-TMA	1,3,6-TMA	cis-1,3,4-TMA	trans-1,3,4-TMA	1-Et, 3,5-DMA	1,3,5,7-TeMA
2018041-007	Mud	0.38	0.43	200067	6.74e5	4.76e6	1.75e6	1.55e6	2.32e6	1.01e7	5.84e6	4.95e6	4.38e6	4.29e6	5.21e6	5.84e6	4.63e6	4.61e6	5.18e6	1.39e6
2018041-007	Mud	0.34	0.38	200068	3.15e5	2.53e6	1.07e6	8.98e5	1.45e6	4.60e6	2.92e6	2.86e6	2.18e6	2.71e6	2.78e6	3.67e6	2.82e6	2.94e6	3.49e6	8.65e5
2018041-007	Mud	0.32	0.34	200069	9.71e5	7.90e6	3.31e6	2.30e6	3.54e6	1.41e7	8.50e6	7.86e6	6.07e6	6.56e6	8.72e6	9.94e6	7.27e6	7.34e6	7.68e6	2.76e6
2018041-014	Mud	4.88	4.93	200079	4.84e4	2.13e5	6.71e4	3.87e4	2.59e4	3.17e5	8.65e4	1.08e5	1.50e5	1.41e5	1.48e5	8.79e4	1.51e5	1.36e5	1.32e5	3.78e4
2018041-015	Mud	4.66	4.71	200083	8.50e4	5.01e5	1.71e5	1.30e5	2.13e5	6.96e5	2.88e5	3.01e5	4.26e5	3.80e5	4.31e5	3.51e5	3.85e5	4.13e5	3.56e5	1.23e5
2018041-021	Mud	6.72	6.77	200098	2.50e5	1.46e6	4.92e5	3.76e5	5.09e5	2.25e6	1.01e6	9.85e5	1.34e6	1.20e6	1.29e6	1.09e6	1.22e6	1.32e6	1.09e6	3.25e5
Blank Extraction	Blank			201900	0.00e0	7.64e4	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	7.95e4	4.27e5	1.34e5	4.94e4	1.96e4	4.44e5	1.42e5	1.84e5	1.65e5	1.39e5	3.75e5	2.86e5	1.47e5	1.05e5	6.41e4	4.45e4

Table 19. continued, GCMS SIR of diamandoids (peak height)

				m/z	177	188	187			201				215	
Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	1,2,5,7-TeMA	DIA	4-MDIA	1-MDIA	3-MDIA	4,9-DMDIA	1,4+2,4-DMDIA	4,8-DMDIA	3,4-DMDIA	1,4,9-TMDIA	3,4,9-TMDIA
2018041-007	Mud	0.38	0.43	200067	5.19e6	5.35e5	1.59e6	1.18e6	1.28e6	9.59e5	1.28e6	1.39e6	2.44e6	1.81e6	3.71e5
2018041-007	Mud	0.34	0.38	200068	3.98e6	2.89e5	7.56e5	5.09e5	4.74e5	5.13e5	5.91e5	6.25e5	9.53e5	8.25e5	1.50e5
2018041-007	Mud	0.32	0.34	200069	9.63e6	6.32e5	1.68e6	1.06e6	9.37e5	9.99e5	1.19e6	1.32e6	1.78e6	1.69e6	3.27e5
2018041-014	Mud	4.88	4.93	200079	1.41e5	1.43e5	1.12e5	9.92e4	5.70e4	4.81e4	6.65e4	6.94e4	8.00e4	5.94e4	1.13e4
2018041-015	Mud	4.66	4.71	200083	4.25e5	2.55e5	3.15e5	2.83e5	1.53e5	1.26e5	1.45e5	1.84e5	2.46e5	1.69e5	3.35e4
2018041-021	Mud	6.72	6.77	200098	1.19e6	6.51e5	1.01e6	7.74e5	4.88e5	4.06e5	4.36e5	5.23e5	6.29e5	3.89e5	7.57e4
Blank Extraction	Blank			201900	0.00e0	1.13e5	0.00e0	5.87e4	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
2015018-0009	Mud	2.00	2.06	174218	1.45e5	6.10e4	3.98e4	2.65e4	2.24e4	1.68e4	1.49e4	1.97e4	1.46e4	1.34e4	4.59e3

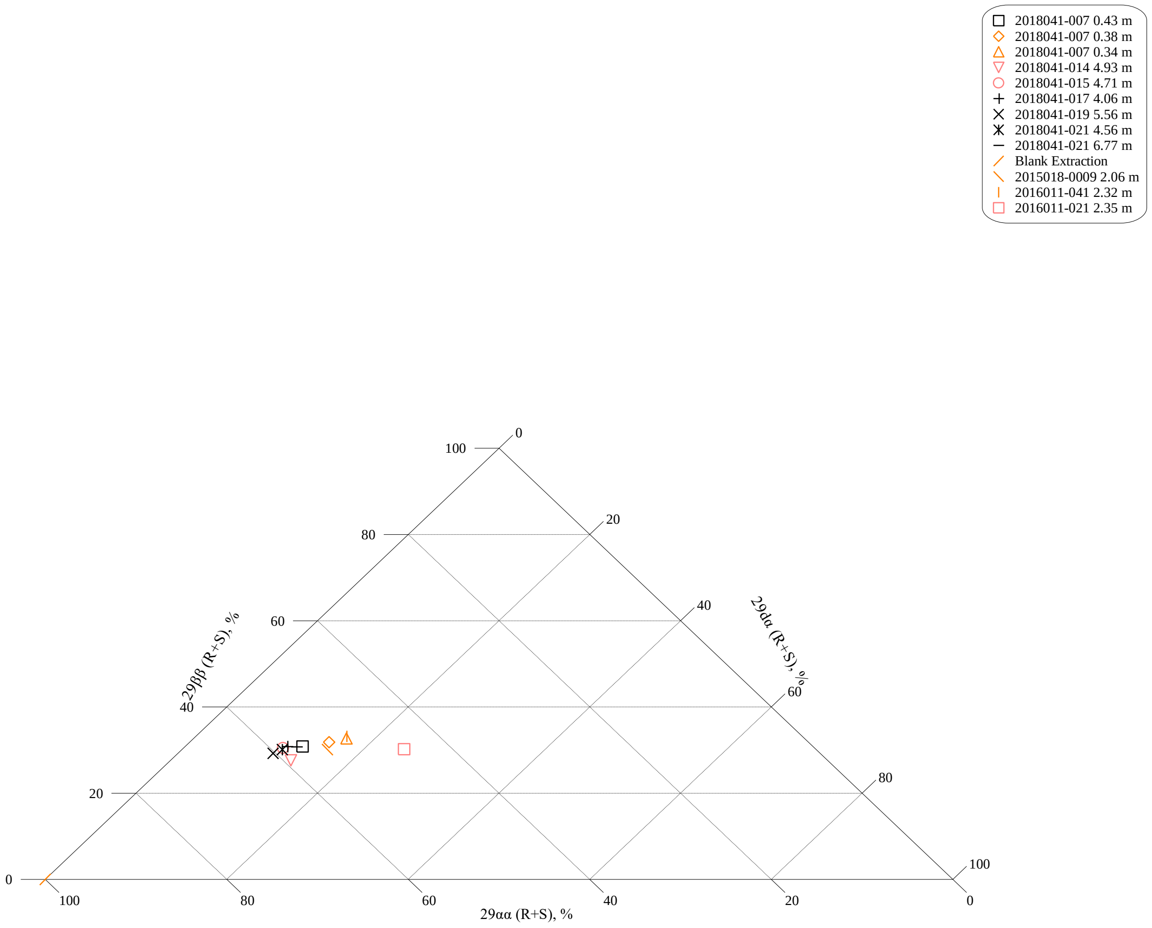
Abbreviations of diamandoids analysed by GC-MS

Adamantane	A
1-Methyladamantane	1-MA
2- Methyladamantane	2-MA
1-Ethyladamantane	1-EtA
2-Ethyladamantane	2-EtA
1,3-Dimethyladamantane	1,3-DMA
cis-1,4-Dimethyladamantane	cis-1,4-DMA
trans-1,4-Dimethyladamantane	trans-1,4-DMA
1,2-Dimethyladamantane	1,2-DMA
1-Et, 3-Madamantane	1-Et, 3-MA
1,3,5-Trimethyladamantane	1,3,5-TMA
1,3,6-Trimethyladamantane	1,3,6-TMA
cis-1,3,4-Trimethyladamantane	cis-1,3,4-TMA
trans-1,3,4-Trimethyladamantane	trans-1,3,4-TMA
1-Et, 3,5-Dimethyladamantane	1-Et, 3,5-DMA
1,3,5,7-Tetramethyladamantane	1,3,5,7-TeMA
1,2,5,7-Tetramethyladamantane	1,2,5,7-TeMA
Diamantane	DIA
4-Methyldiamantane	4-MDIA
1-Methyldiamantane	1-MDIA
3-Methyldiamantane	3-MDIA
4,9-Dimethyldiamantane	4,9-DMDIA
1,4+2,4-Dimethyldiamantane	1,4+2,4-DMDIA
4,8-Dimethyldiamantane	4,8-DMDIA
3,4-Dimethyldiamantane	3,4-DMDIA
1,4,9-Trimethyldiamantane	1,4,9-TMDIA
3,4,9-Trimethyldiamantane	3,4,9-TMDIA

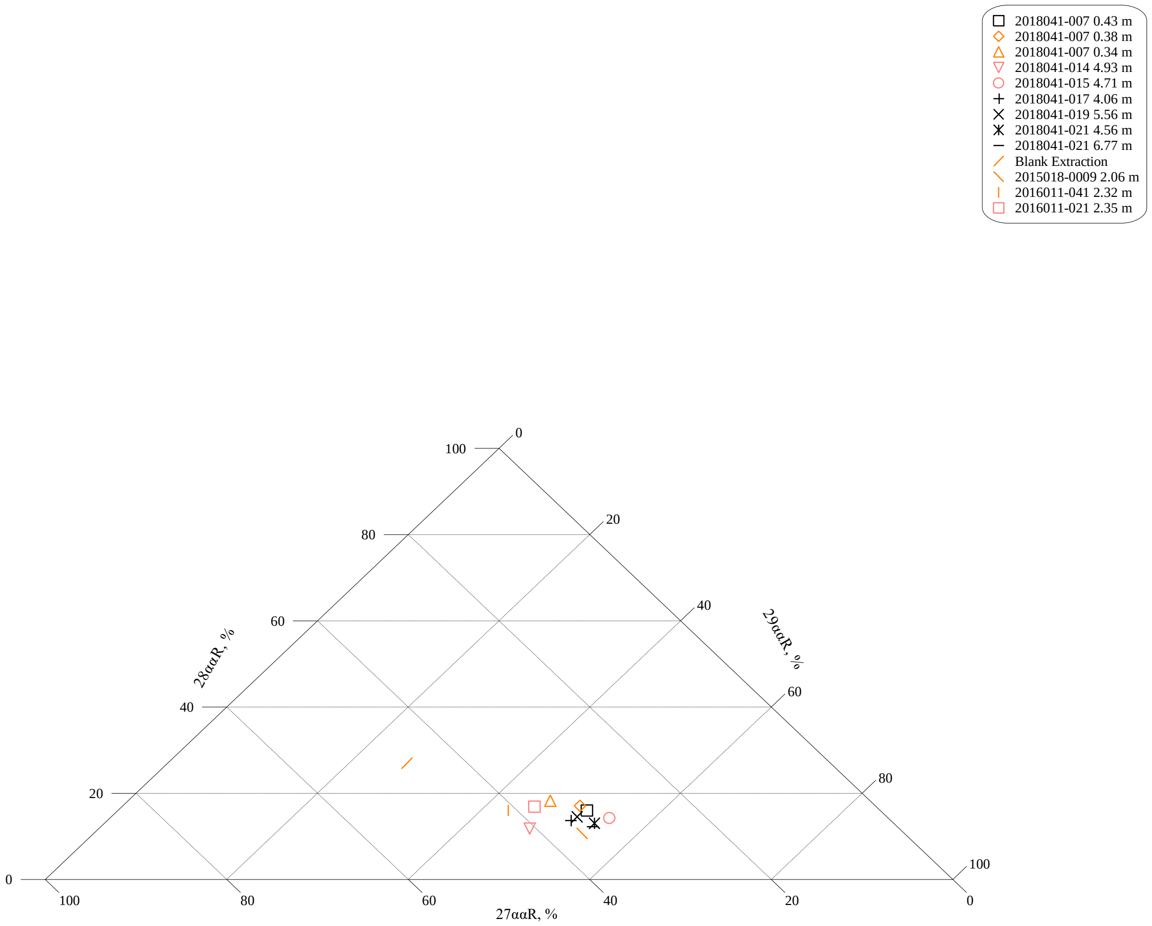
Table 20. Isotopes of fractions, δ¹³C (‰ VPDB)

Well	Sample type	Upper Depth (m)	Lower Depth (m)	APT ID	$\delta^{13}C$-Oil/EOM	$\delta^{13}C$-Sat	$\delta^{13}C$-Aro	$\delta^{13}C$-Pol	$\delta^{13}C$-Asp	$\delta^{13}C$-Ker
2018041-007	Mud	0.38	0.43	200067		-29.4	-28.8			
2018041-007	Mud	0.34	0.38	200068		-28.6	-28.2			
2018041-007	Mud	0.32	0.34	200069		-28.5	-28.4			
2018041-014	Mud	4.88	4.93	200079		-31.0	-28.7			
2018041-015	Mud	4.66	4.71	200083		-30.9	-29.7			
2018041-021	Mud	6.72	6.77	200098		-30.8	-30.1			

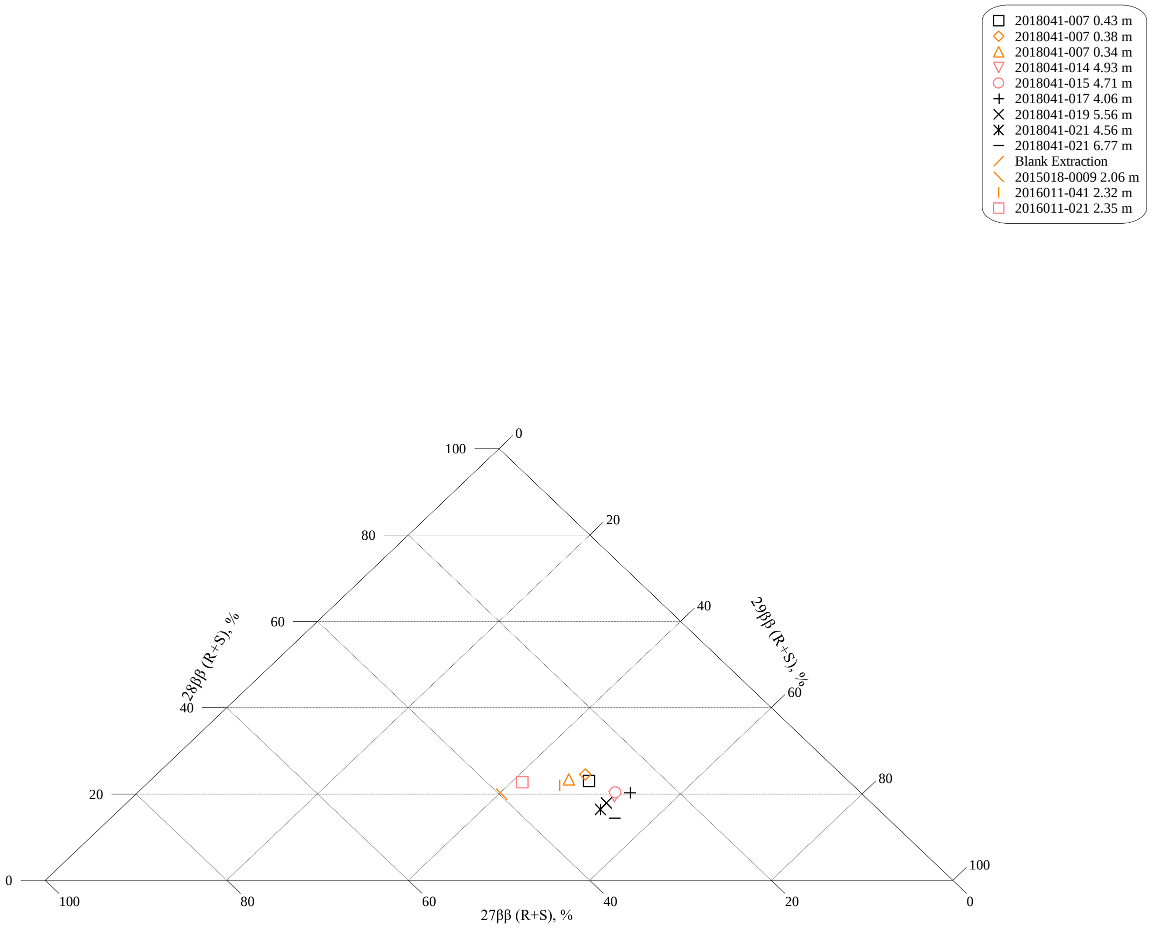
Steranes Triangle Plots



2018041-007 0.43 m
2018041-007 0.38 m
2018041-007 0.34 m
2018041-014 4.93 m
2018041-015 4.71 m
2018041-017 4.06 m
2018041-019 5.56 m
2018041-021 4.56 m
2018041-021 6.77 m
Blank Extraction
2015018-0009 2.06 m
2016011-041 2.32 m
2016011-021 2.35 m
29ββ (R+S), %
29αα (R+S), %
29βα (R+S), %

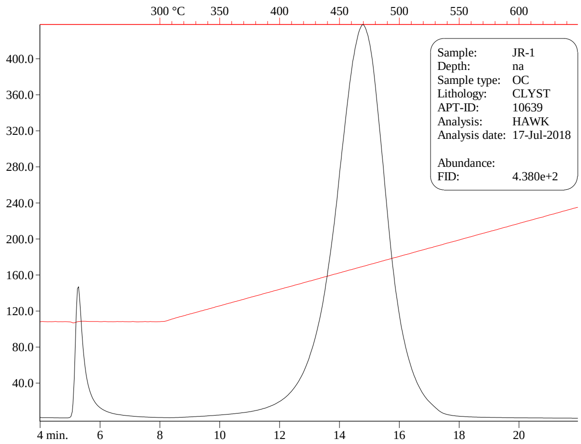


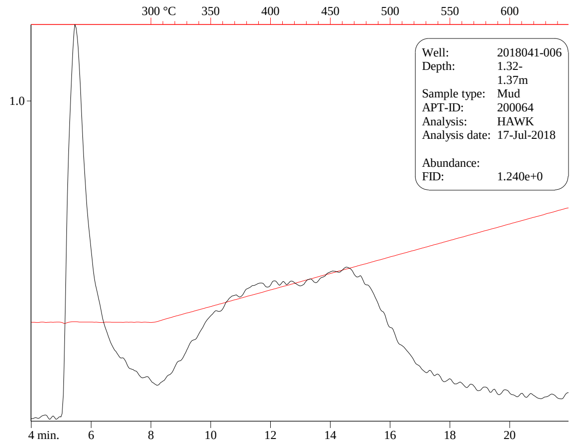
2018041-007 0.43 m
2018041-007 0.38 m
2018041-007 0.34 m
2018041-014 4.93 m
2018041-015 4.71 m
2018041-017 4.06 m
2018041-019 5.56 m
2018041-021 4.56 m
2018041-021 6.77 m
Blank Extraction
2015018-0009 2.06 m
2016011-041 2.32 m
2016011-021 2.35 m
28ααR, %
27ααR, %
29ααR, %

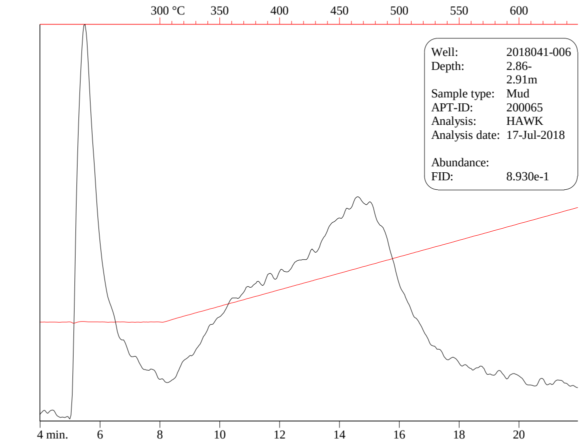

2018041-007 0.43 m
2018041-007 0.38 m
2018041-007 0.34 m
2018041-014 4.93 m
2018041-015 4.71 m
2018041-017 4.06 m
2018041-019 5.56 m
2018041-021 4.56 m
2018041-021 6.77 m
Blank Extraction
2015018-0009 2.06 m
2016011-041 2.32 m
2016011-021 2.35 m
28ββ (R+S), %
29ββ (R+S), %
27ββ (R+S), %
0
20
40
60
80
100

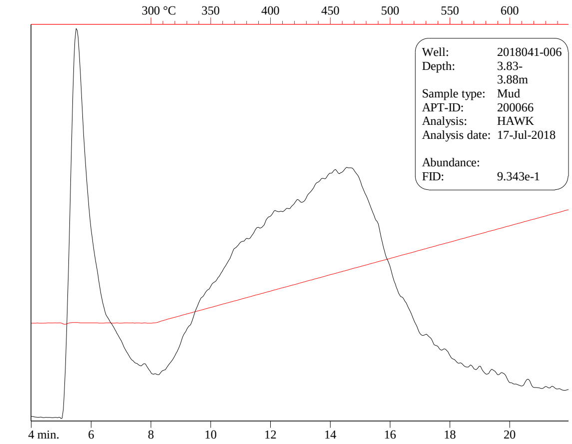
Rock-Eval pyrograms

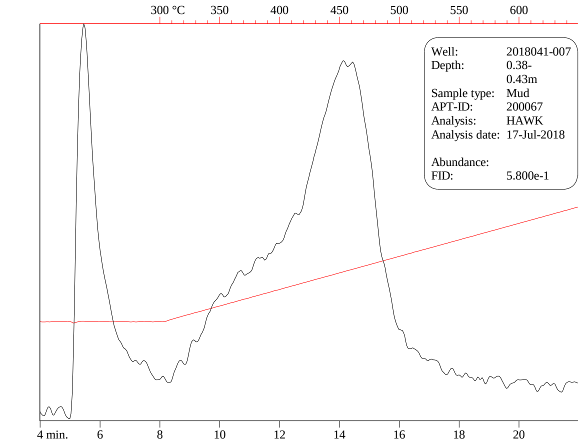
The temperature scale for the pyrograms is uncalibrated. The TMax temperature is lower than on the graphs.

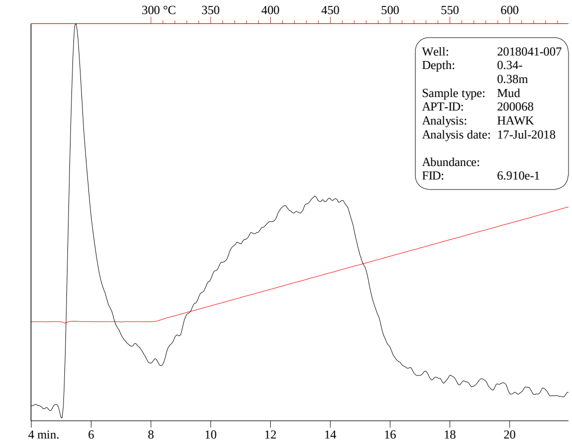


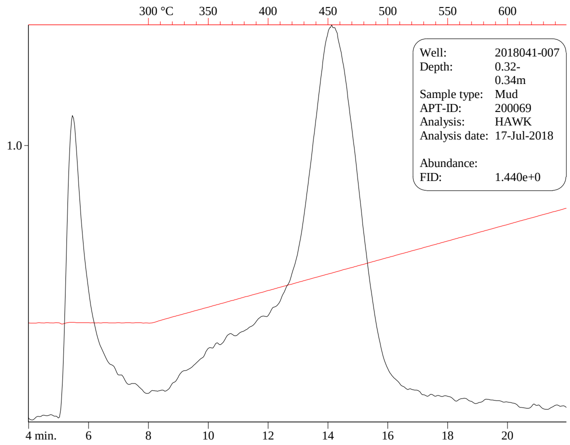


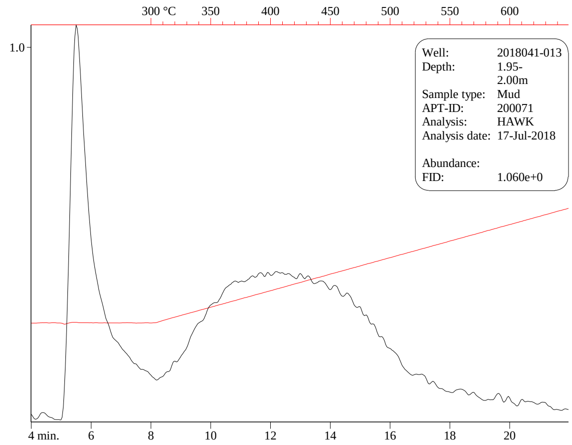


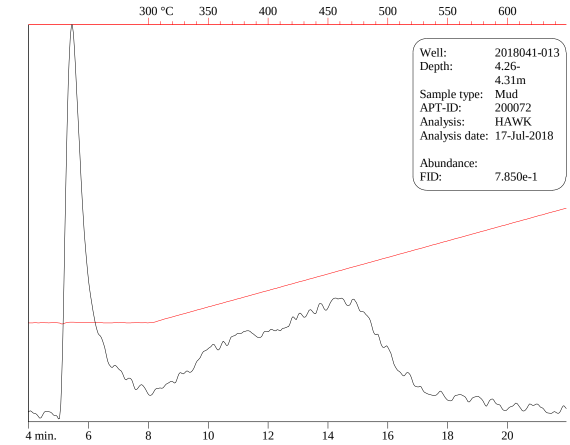


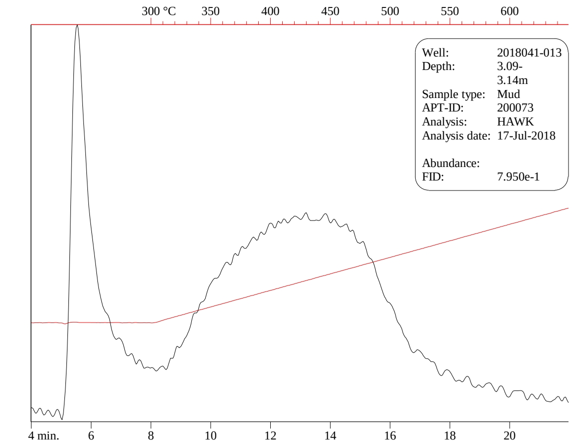


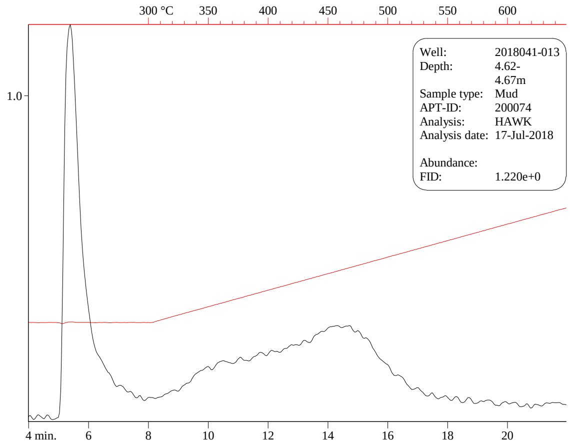


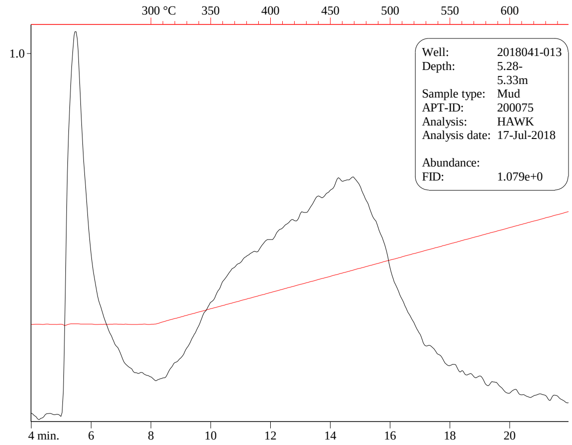

300 °C
350
400
450
500
550
600
1.0
Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
APT-ID: 200069
Analysis: HAWK
Analysis date: 17-Jul-2018
Abundance:
FID: 1.440e+0
4 min.
6
8
10
12
14
16
18
20

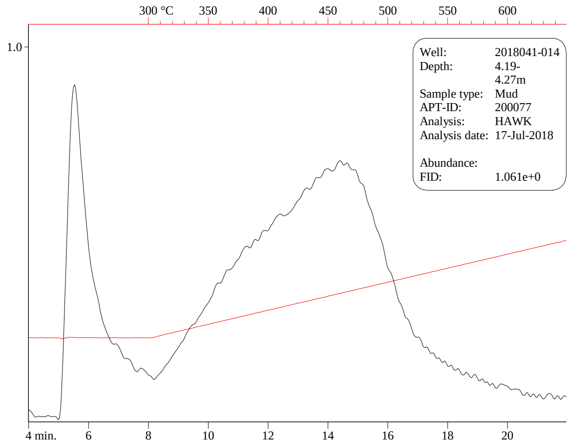

300 °C
350
400
450
500
550
600
1.0
Well: 2018041-013
Depth: 1.95-2.00m
Sample type: Mud
APT-ID: 200071
Analysis: HAWK
Analysis date: 17-Jul-2018
Abundance:
FID: 1.060e+0
4 min.
6
8
10
12
14
16
18
20

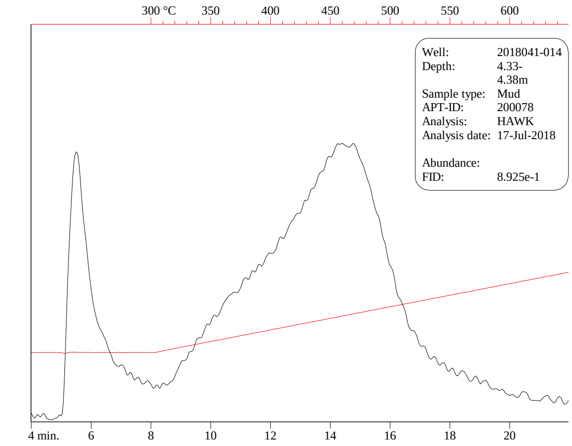

300 °C
350
400
450
500
550
600
Well: 2018041-013
Depth: 4.26-4.31m
Sample type: Mud
APT-ID: 200072
Analysis: HAWK
Analysis date: 17-Jul-2018
Abundance:
FID: 7.850e-1
4 min.
6
8
10
12
14
16
18
20

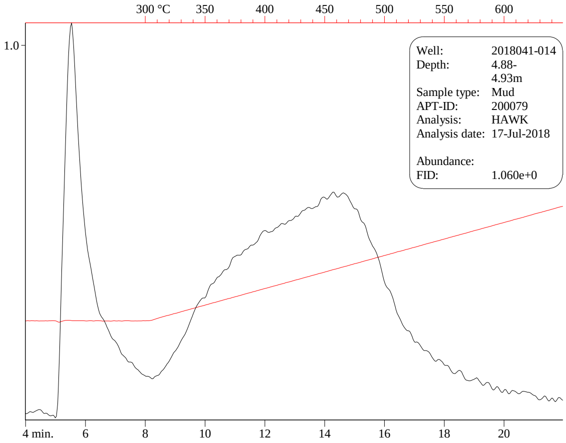

300 °C
350
400
450
500
550
600
Well: 2018041-013
Depth: 3.09-3.14m
Sample type: Mud
APT-ID: 200073
Analysis: HAWK
Analysis date: 17-Jul-2018
Abundance:
FID: 7.950e-1
4 min.
6
8
10
12
14
16
18
20

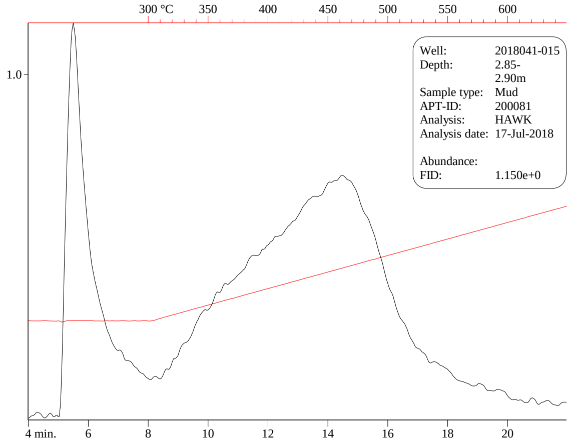

300 °C
350
400
450
500
550
600
1.0
Well: 2018041-013
Depth: 4.62-4.67m
Sample type: Mud
APT-ID: 200074
Analysis: HAWK
Analysis date: 17-Jul-2018
Abundance:
FID: 1.220e+0
4 min.
6
8
10
12
14
16
18
20

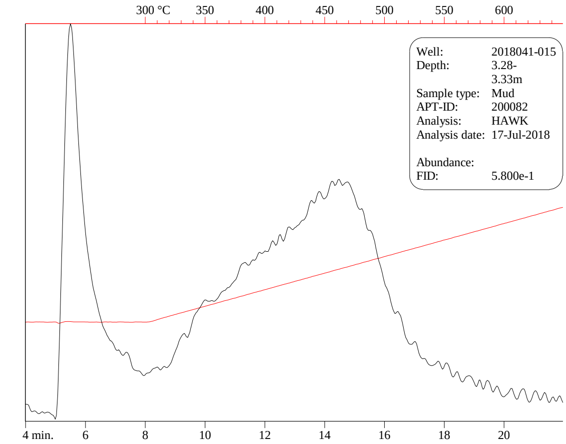

300 °C
350
400
450
500
550
600
1.0
Well: 2018041-013
Depth: 5.28-5.33m
Sample type: Mud
APT-ID: 200075
Analysis: HAWK
Analysis date: 17-Jul-2018
Abundance:
FID: 1.079e+0
4 min.
6
8
10
12
14
16
18
20

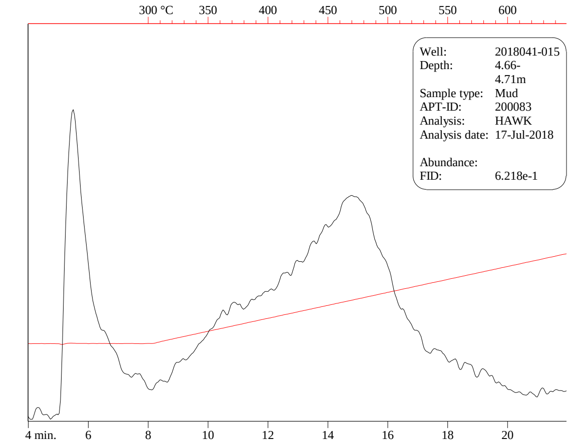

300 °C
350
400
450
500
550
600
1.0
Well: 2018041-014
Depth: 4.19-4.27m
Sample type: Mud
APT-ID: 200077
Analysis: HAWK
Analysis date: 17-Jul-2018
Abundance:
FID: 1.061e+0
4 min.
6
8
10
12
14
16
18
20

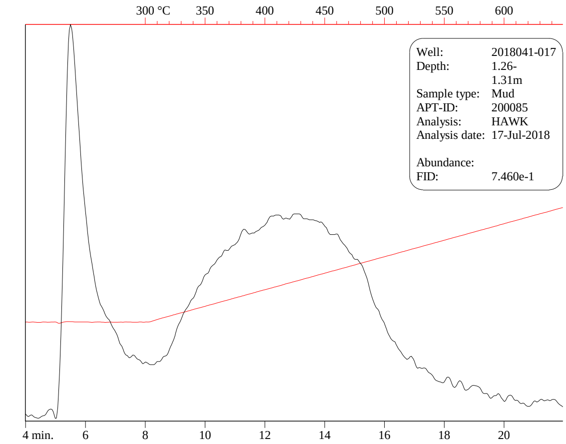

300 °C
350
400
450
500
550
600
Well: 2018041-014
Depth: 4.33-4.38m
Sample type: Mud
APT-ID: 200078
Analysis: HAWK
Analysis date: 17-Jul-2018
Abundance:
FID: 8.925e-1
4 min.
6
8
10
12
14
16
18
20

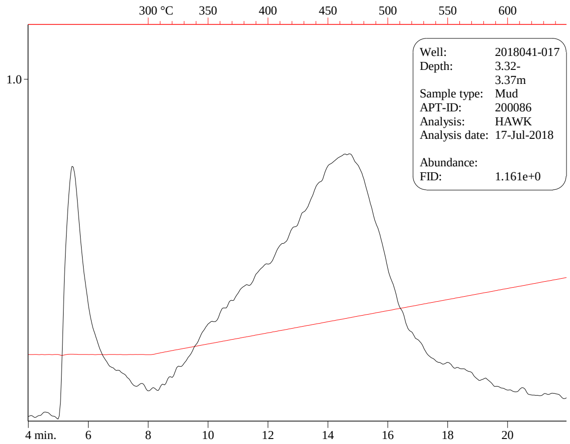

300 °C 350 400 450 500 550 600
1.0
Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
APT-ID: 200079
Analysis: HAWK
Analysis date: 17-Jul-2018
Abundance:
FID: 1.060e+0
4 min. 6 8 10 12 14 16 18 20

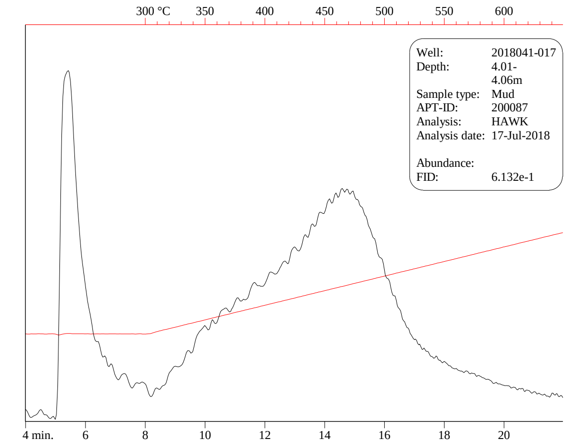

300 °C 350 400 450 500 550 600
1.0
Well: 2018041-015
Depth: 2.85-2.90m
Sample type: Mud
APT-ID: 200081
Analysis: HAWK
Analysis date: 17-Jul-2018
Abundance:
FID: 1.150e+0
4 min. 6 8 10 12 14 16 18 20

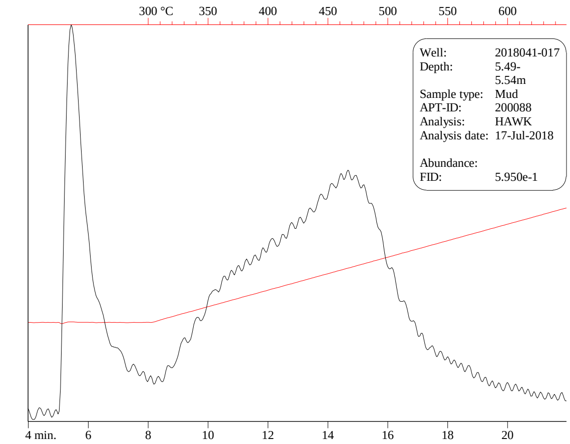

300 °C 350 400 450 500 550 600
Well: 2018041-015
Depth: 3.28-3.33m
Sample type: Mud
APT-ID: 200082
Analysis: HAWK
Analysis date: 17-Jul-2018
Abundance:
FID: 5.800e-1
4 min. 6 8 10 12 14 16 18 20

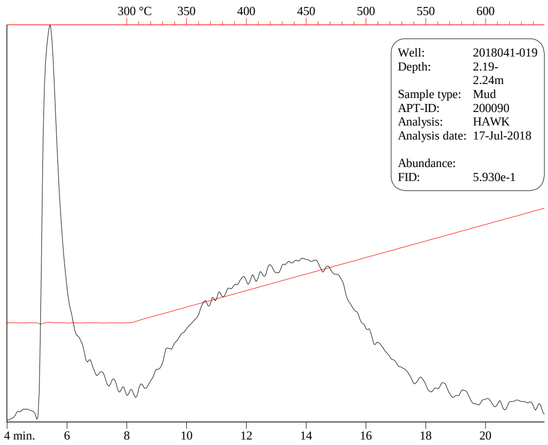

300 °C 350 400 450 500 550 600
Well: 2018041-015
Depth: 4.66-4.71m
Sample type: Mud
APT-ID: 200083
Analysis: HAWK
Analysis date: 17-Jul-2018
Abundance:
FID: 6.218e-1
4 min. 6 8 10 12 14 16 18 20

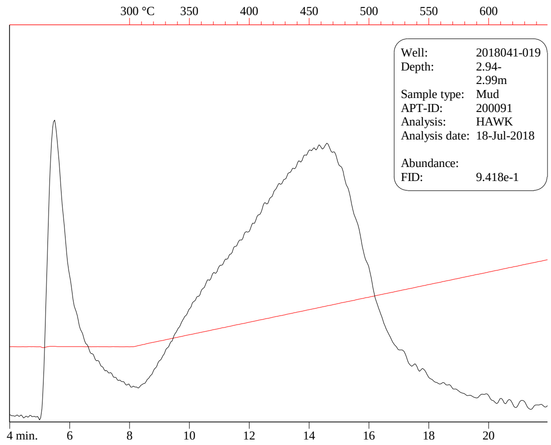

300 °C 350 400 450 500 550 600
Well: 2018041-017
Depth: 1.26-1.31m
Sample type: Mud
APT-ID: 200085
Analysis: HAWK
Analysis date: 17-Jul-2018
Abundance:
FID: 7.460e-1
4 min. 6 8 10 12 14 16 18 20

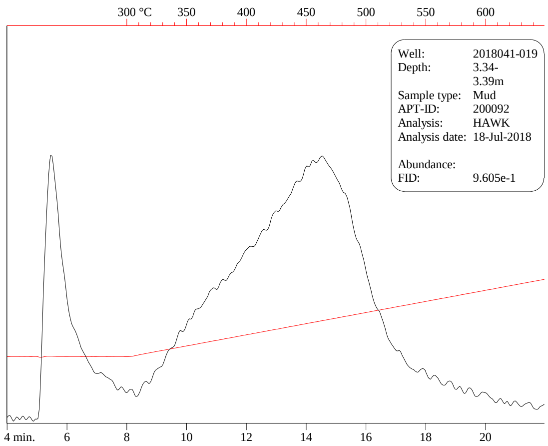

300 °C 350 400 450 500 550 600
1.0
Well: 2018041-017
Depth: 3.32-3.37m
Sample type: Mud
APT-ID: 200086
Analysis: HAWK
Analysis date: 17-Jul-2018
Abundance:
FID: 1.161e+0
4 min. 6 8 10 12 14 16 18 20

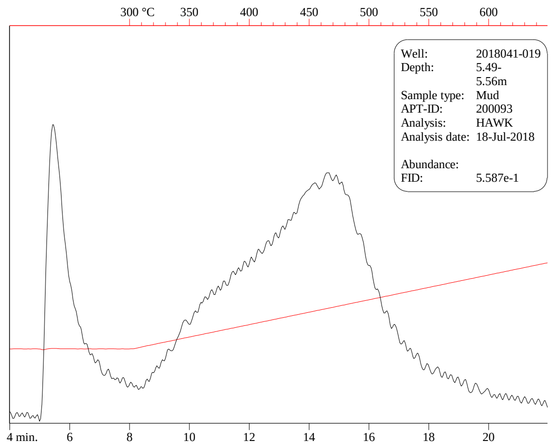

300 °C 350 400 450 500 550 600
Well: 2018041-017
Depth: 4.01-4.06m
Sample type: Mud
APT-ID: 200087
Analysis: HAWK
Analysis date: 17-Jul-2018
Abundance:
FID: 6.132e-1
4 min. 6 8 10 12 14 16 18 20

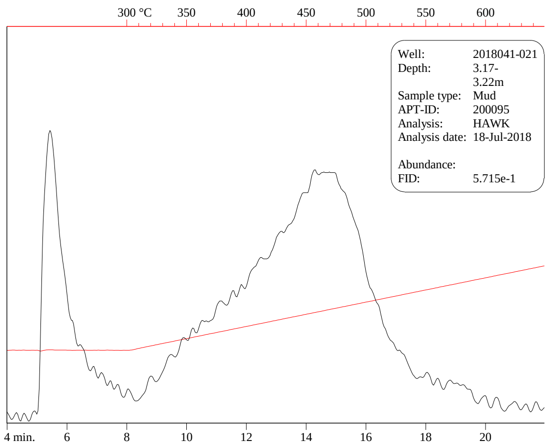

300 °C 350 400 450 500 550 600
Well: 2018041-017
Depth: 5.49-5.54m
Sample type: Mud
APT-ID: 200088
Analysis: HAWK
Analysis date: 17-Jul-2018
Abundance:
FID: 5.950e-1
4 min. 6 8 10 12 14 16 18 20

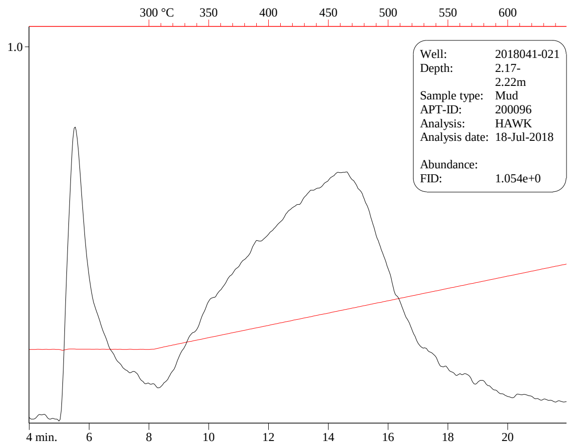

300 °C 350 400 450 500 550 600
Well: 2018041-019
Depth: 2.19-2.24m
Sample type: Mud
APT-ID: 200090
Analysis: HAWK
Analysis date: 17-Jul-2018
Abundance:
FID: 5.930e-1
4 min. 6 8 10 12 14 16 18 20

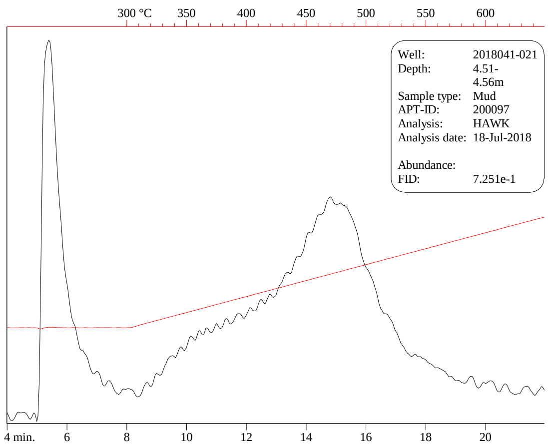

300 °C 350 400 450 500 550 600
Well: 2018041-019
Depth: 2.94-2.99m
Sample type: Mud
APT-ID: 200091
Analysis: HAWK
Analysis date: 18-Jul-2018
Abundance:
FID: 9.418e-1
4 min. 6 8 10 12 14 16 18 20

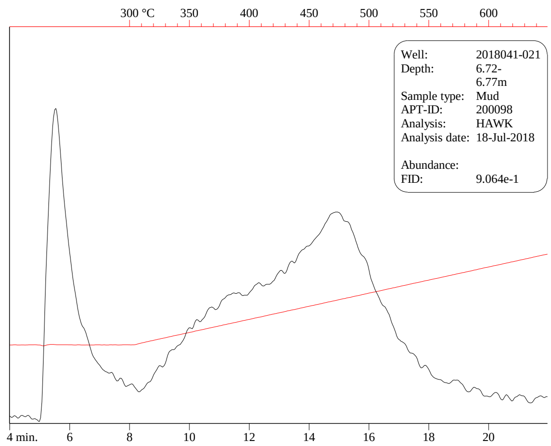

300 °C 350 400 450 500 550 600
Well: 2018041-019
Depth: 3.34-3.39m
Sample type: Mud
APT-ID: 200092
Analysis: HAWK
Analysis date: 18-Jul-2018
Abundance:
FID: 9.605e-1
4 min. 6 8 10 12 14 16 18 20

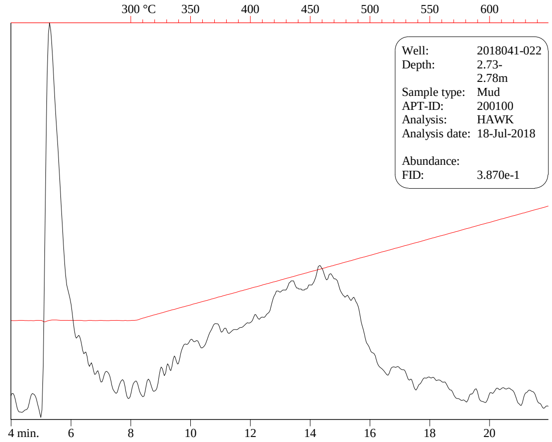

300 °C 350 400 450 500 550 600
Well: 2018041-019
Depth: 5.49-5.56m
Sample type: Mud
APT-ID: 200093
Analysis: HAWK
Analysis date: 18-Jul-2018
Abundance:
FID: 5.587e-1
4 min. 6 8 10 12 14 16 18 20

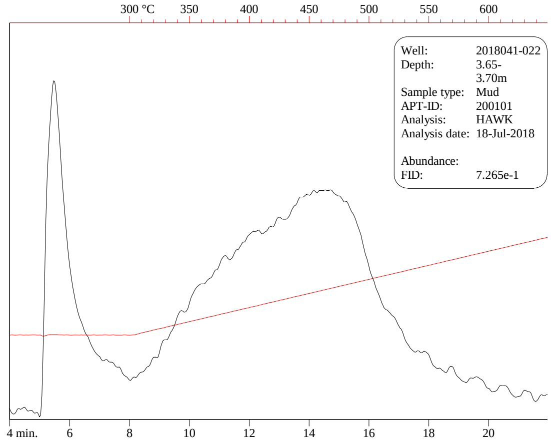

300 °C 350 400 450 500 550 600
Well: 2018041-021
Depth: 3.17-3.22m
Sample type: Mud
APT-ID: 200095
Analysis: HAWK
Analysis date: 18-Jul-2018
Abundance:
FID: 5.715e-1
4 min. 6 8 10 12 14 16 18 20

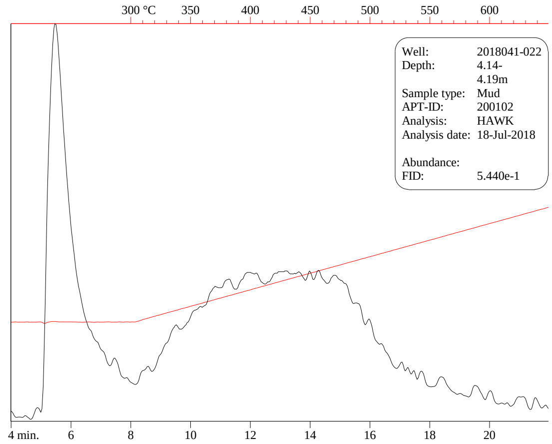

300 °C 350 400 450 500 550 600
1.0
Well: 2018041-021
Depth: 2.17-2.22m
Sample type: Mud
APT-ID: 200096
Analysis: HAWK
Analysis date: 18-Jul-2018
Abundance:
FID: 1.054e+0
4 min. 6 8 10 12 14 16 18 20

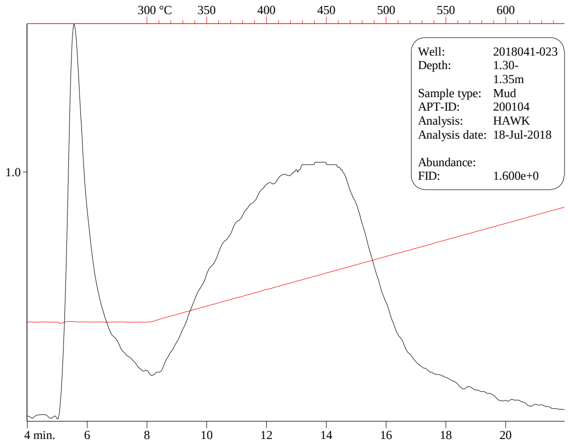

300 °C 350 400 450 500 550 600
Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
APT-ID: 200097
Analysis: HAWK
Analysis date: 18-Jul-2018
Abundance:
FID: 7.251e-1
4 min. 6 8 10 12 14 16 18 20

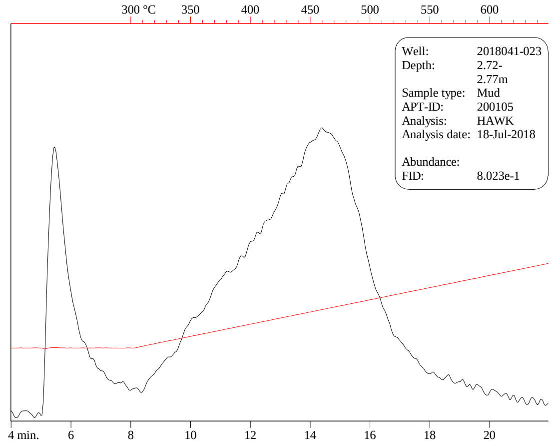

300 °C 350 400 450 500 550 600
Well: 2018041-021
Depth: 6.72-6.77m
Sample type: Mud
APT-ID: 200098
Analysis: HAWK
Analysis date: 18-Jul-2018
Abundance:
FID: 9.064e-1
4 min. 6 8 10 12 14 16 18 20

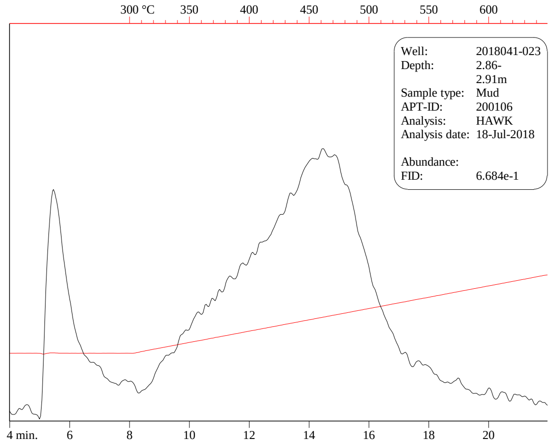

300 °C 350 400 450 500 550 600
Well: 2018041-022
Depth: 2.73-2.78m
Sample type: Mud
APT-ID: 200100
Analysis: HAWK
Analysis date: 18-Jul-2018
Abundance:
FID: 3.870e-1
4 min. 6 8 10 12 14 16 18 20


300 °C 350 400 450 500 550 600
Well: 2018041-022
Depth: 3.65-3.70m
Sample type: Mud
APT-ID: 200101
Analysis: HAWK
Analysis date: 18-Jul-2018
Abundance:
FID: 7.265e-1
4 min. 6 8 10 12 14 16 18 20

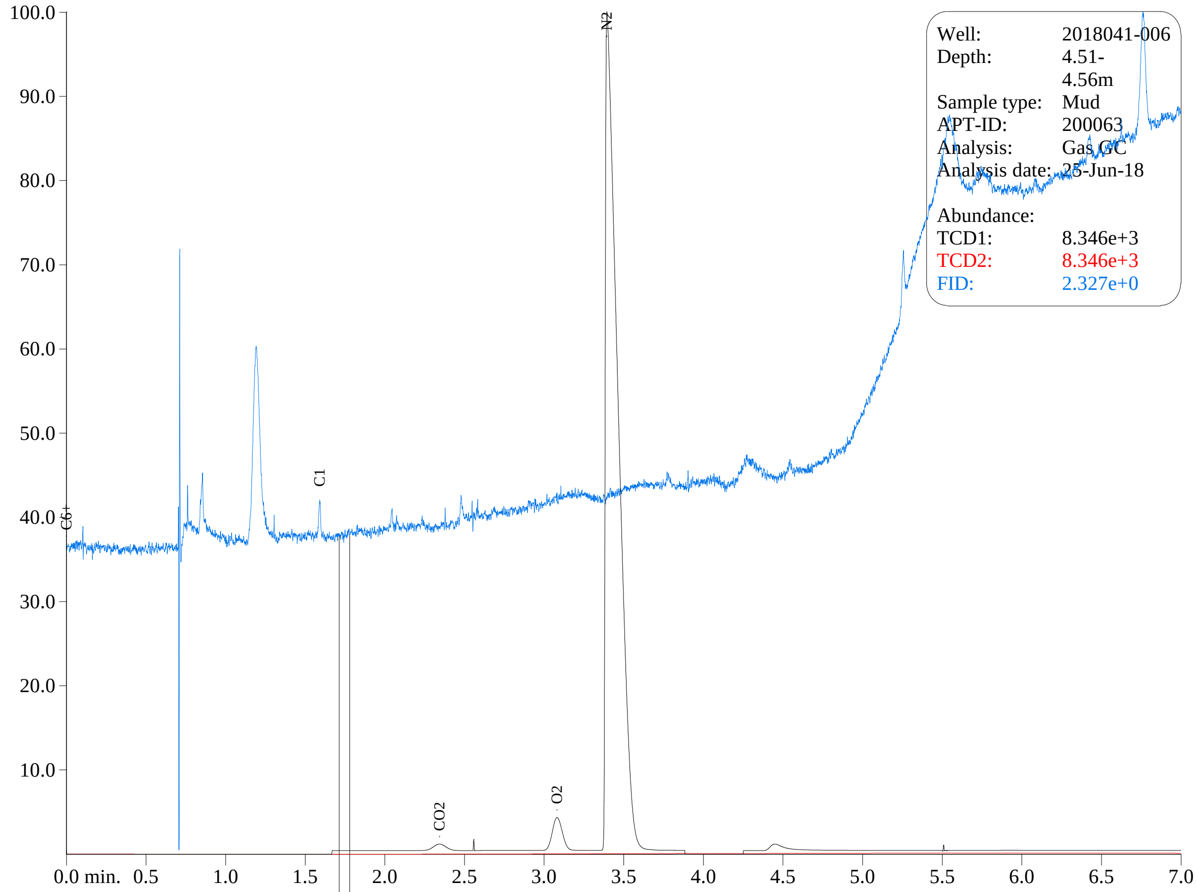

300 °C 350 400 450 500 550 600
Well: 2018041-022
Depth: 4.14-4.19m
Sample type: Mud
APT-ID: 200102
Analysis: HAWK
Analysis date: 18-Jul-2018
Abundance:
FID: 5.440e-1
4 min. 6 8 10 12 14 16 18 20


300 °C 350 400 450 500 550 600
1.0
Well: 2018041-023
Depth: 1.30-1.35m
Sample type: Mud
APT-ID: 200104
Analysis: HAWK
Analysis date: 18-Jul-2018
Abundance:
FID: 1.600e+0
4 min. 6 8 10 12 14 16 18 20

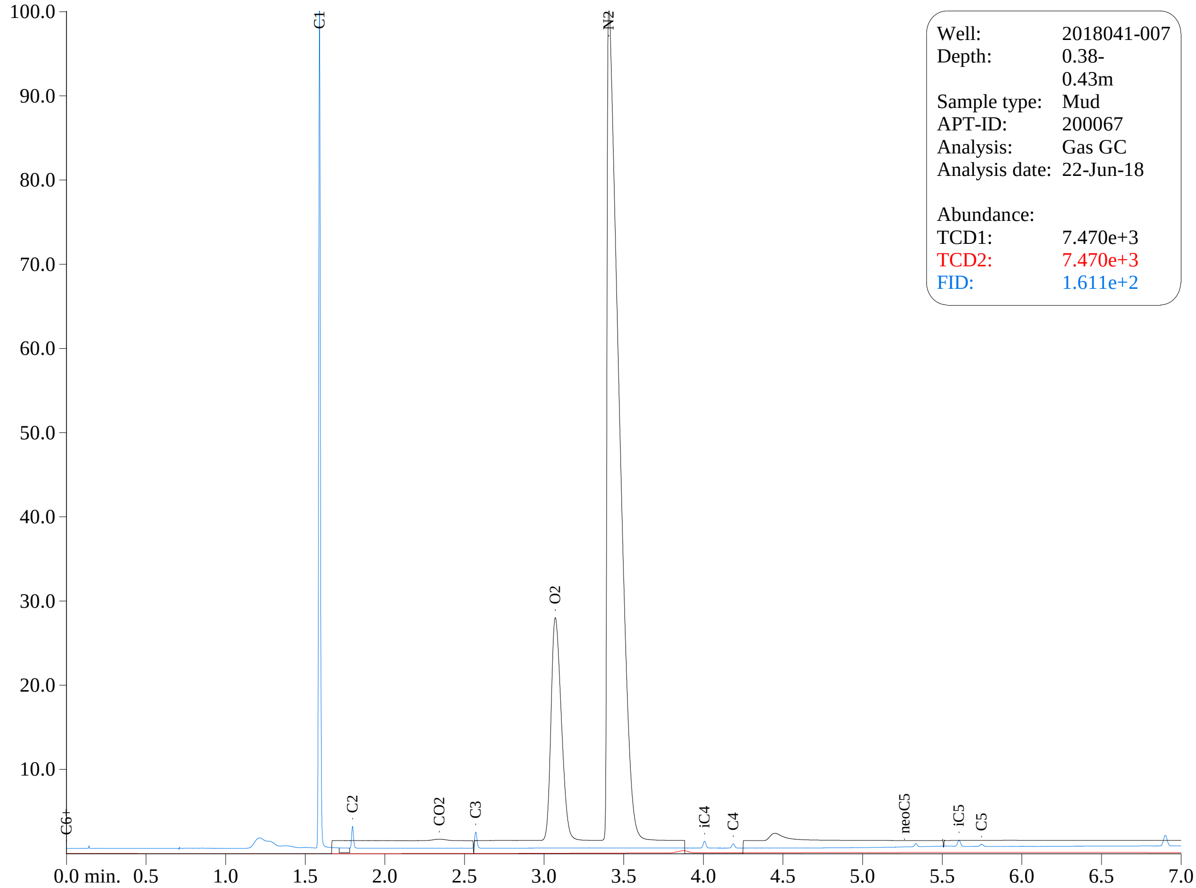

300 °C 350 400 450 500 550 600
Well: 2018041-023
Depth: 2.72-2.77m
Sample type: Mud
APT-ID: 200105
Analysis: HAWK
Analysis date: 18-Jul-2018
Abundance:
FID: 8.023e-1
4 min. 6 8 10 12 14 16 18 20


300 °C 350 400 450 500 550 600
Well: 2018041-023
Depth: 2.86-2.91m
Sample type: Mud
APT-ID: 200106
Analysis: HAWK
Analysis date: 18-Jul-2018
Abundance:
FID: 6.684e-1
4 min. 6 8 10 12 14 16 18 20

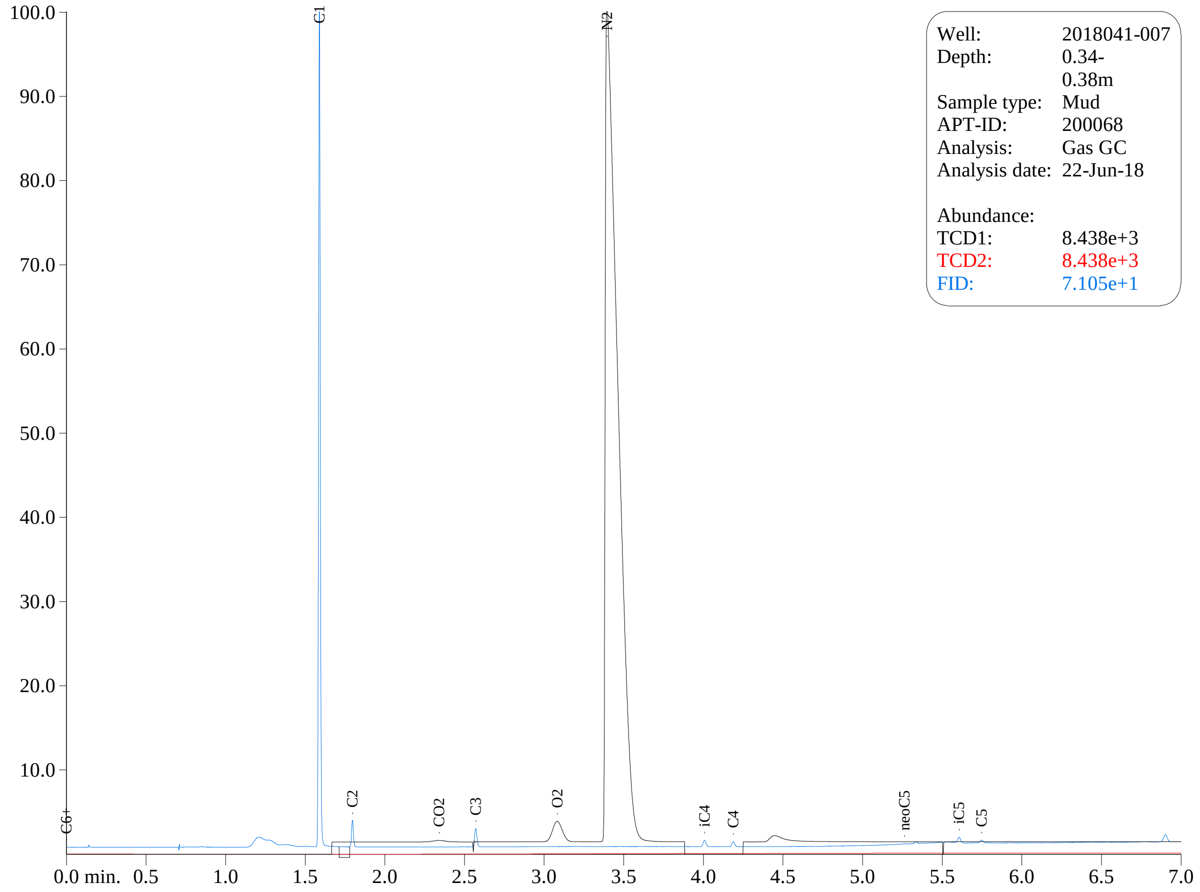
GC Chromatograms of Gas Samples



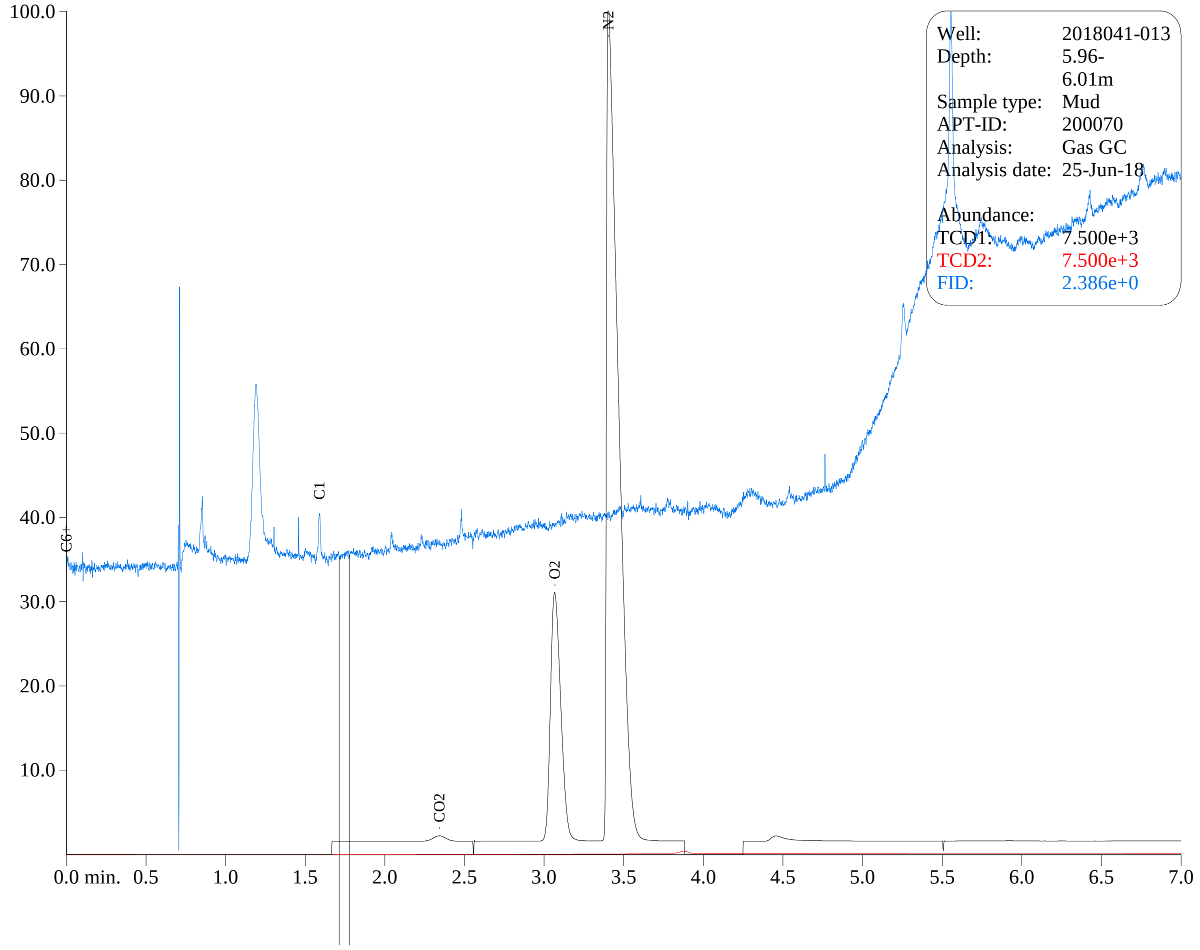
Well: 2018041-006
Depth: 4.51-4.56m
Sample type: Mud
APT-ID: 200063
Analysis: Gas GC
Analysis date: 25-Jun-18
Abundance:
TCD1: 8.346e+3
TCD2: 8.346e+3
FID: 2.327e+0
C6+
C1
CO2
O2
N2
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0 min. 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0



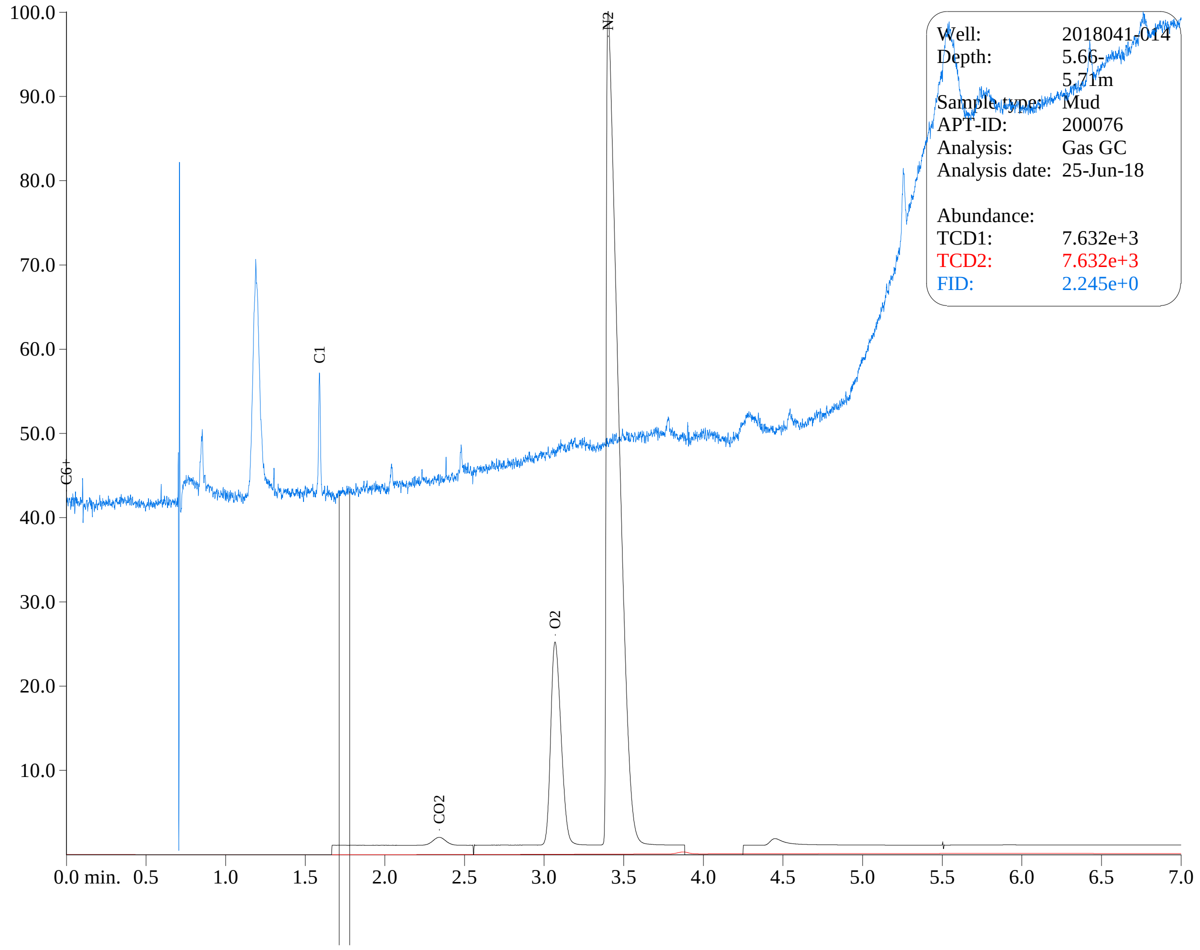
Well: 2018041-007
Depth: 0.38-0.43m
Sample type: Mud
APT-ID: 200067
Analysis: Gas GC
Analysis date: 22-Jun-18
Abundance:
TCD1: 7.470e+3
TCD2: 7.470e+3
FID: 1.611e+2
C6+
C1
C2
CO2
C3
O2
N2
iC4
C4
neoC5
iC5
C5
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0 min. 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0



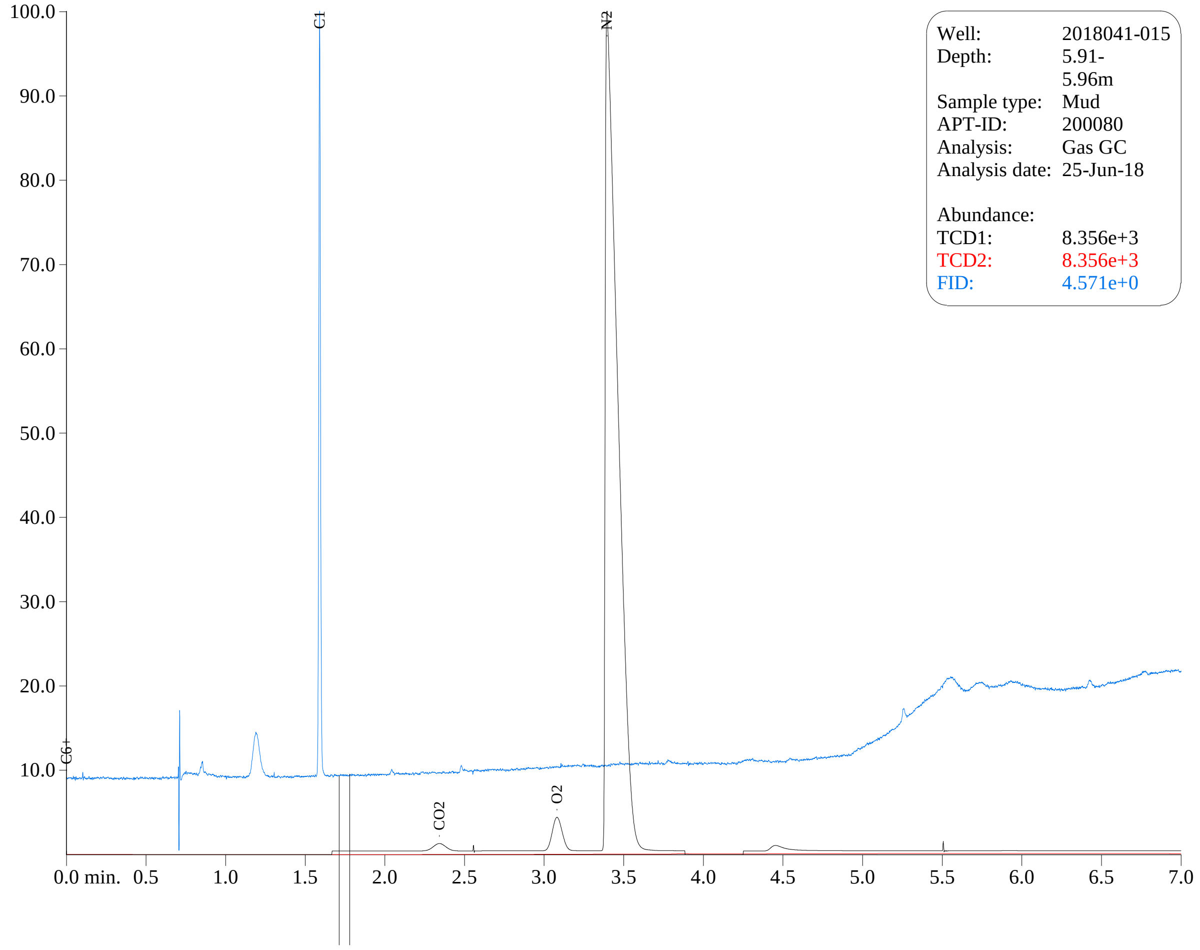
Well: 2018041-007
Depth: 0.34-0.38m
Sample type: Mud
APT-ID: 200068
Analysis: Gas GC
Analysis date: 22-Jun-18
Abundance:
TCD1: 8.438e+3
TCD2: 8.438e+3
FID: 7.105e+1
C6+
C1
C2
CO2
C3
O2
N2
iC4
C4
neoC5
iC5
C5
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0 min.
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
5.5
6.0
6.5
7.0



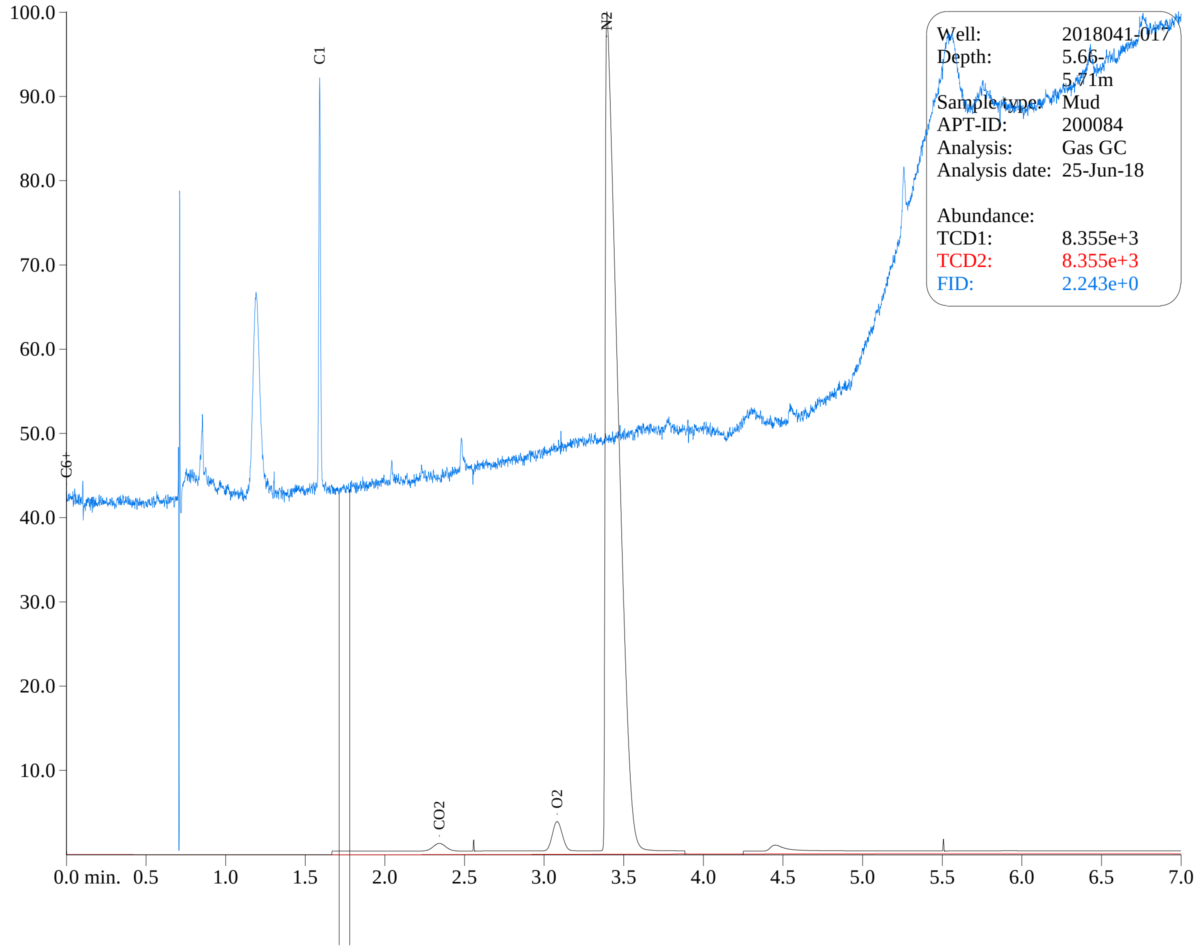
Well: 2018041-013
Depth: 5.96-6.01m
Sample type: Mud
APT-ID: 200070
Analysis: Gas GC
Analysis date: 25-Jun-18
Abundance:
TCD1: 7.500e+3
TCD2: 7.500e+3
FID: 2.386e+0
C6+
C1
CO2
O2
N2
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0 min.
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
5.5
6.0
6.5
7.0



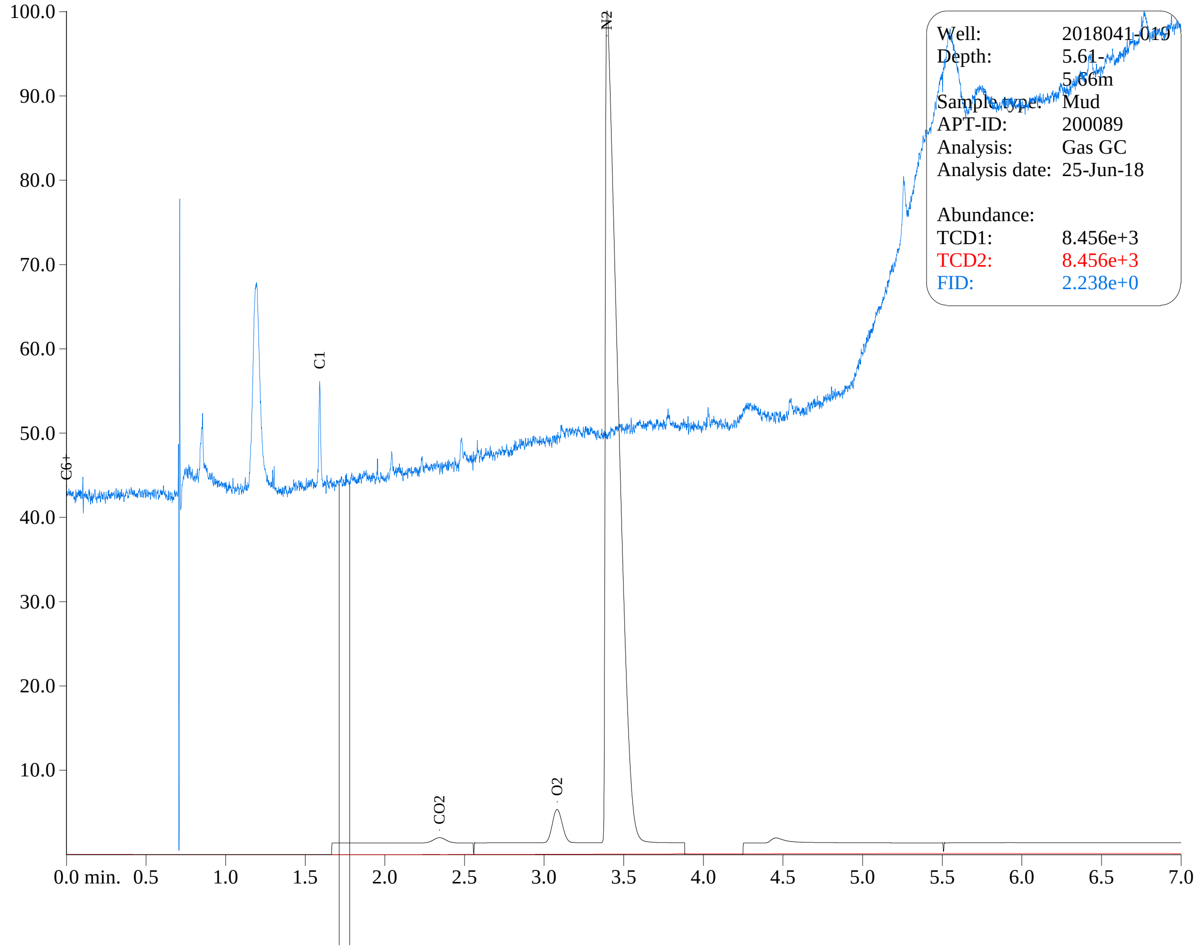
Well: 2018041-014
Depth: 5.66-5.71m
Sample type: Mud
APT-ID: 200076
Analysis: Gas GC
Analysis date: 25-Jun-18
Abundance:
TCD1: 7.632e+3
TCD2: 7.632e+3
FID: 2.245e+0
C6+
C1
CO2
O2
N2
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0 min. 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0



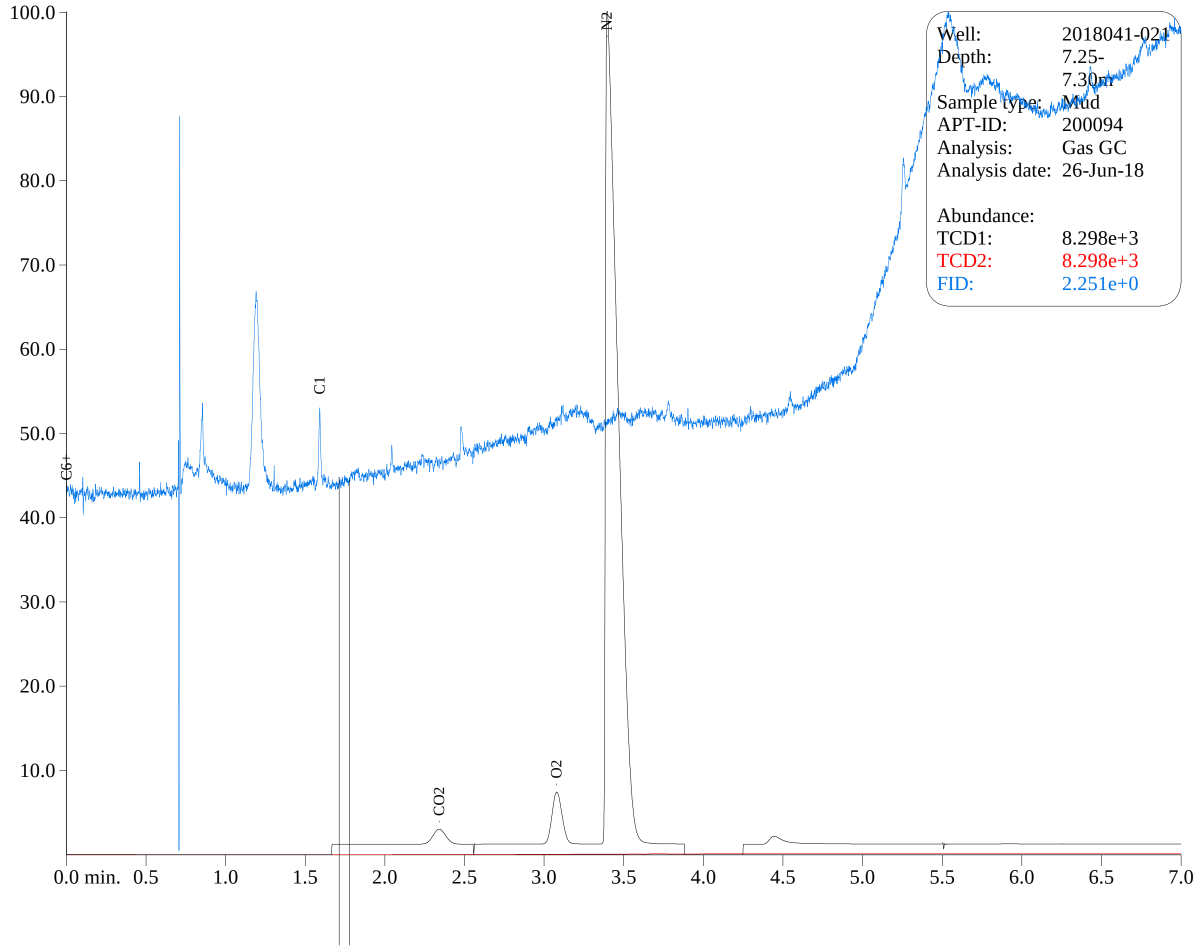
Well: 2018041-015
Depth: 5.91-5.96m
Sample type: Mud
APT-ID: 200080
Analysis: Gas GC
Analysis date: 25-Jun-18
Abundance:
TCD1: 8.356e+3
TCD2: 8.356e+3
FID: 4.571e+0
C6+
C1
CO2
O2
N2
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0 min. 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0

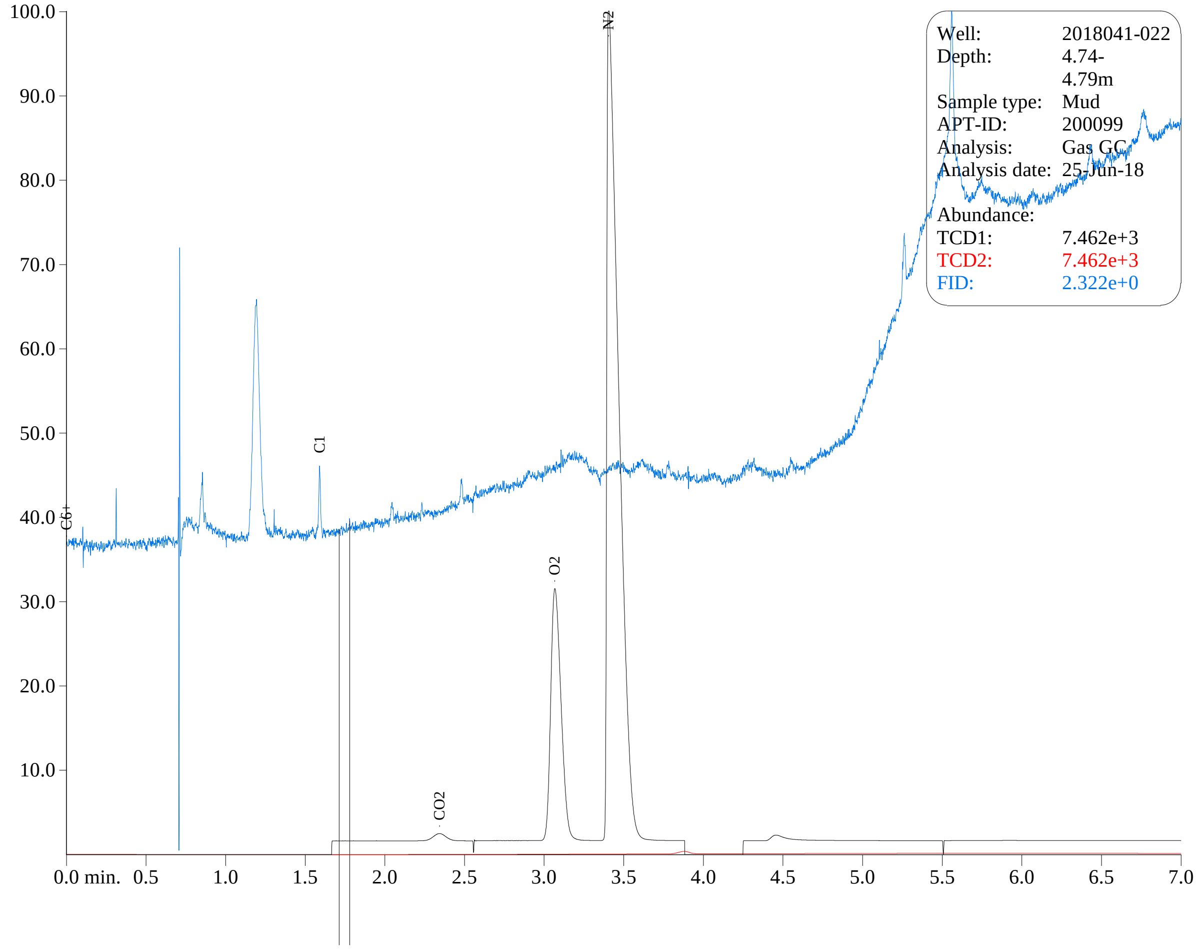


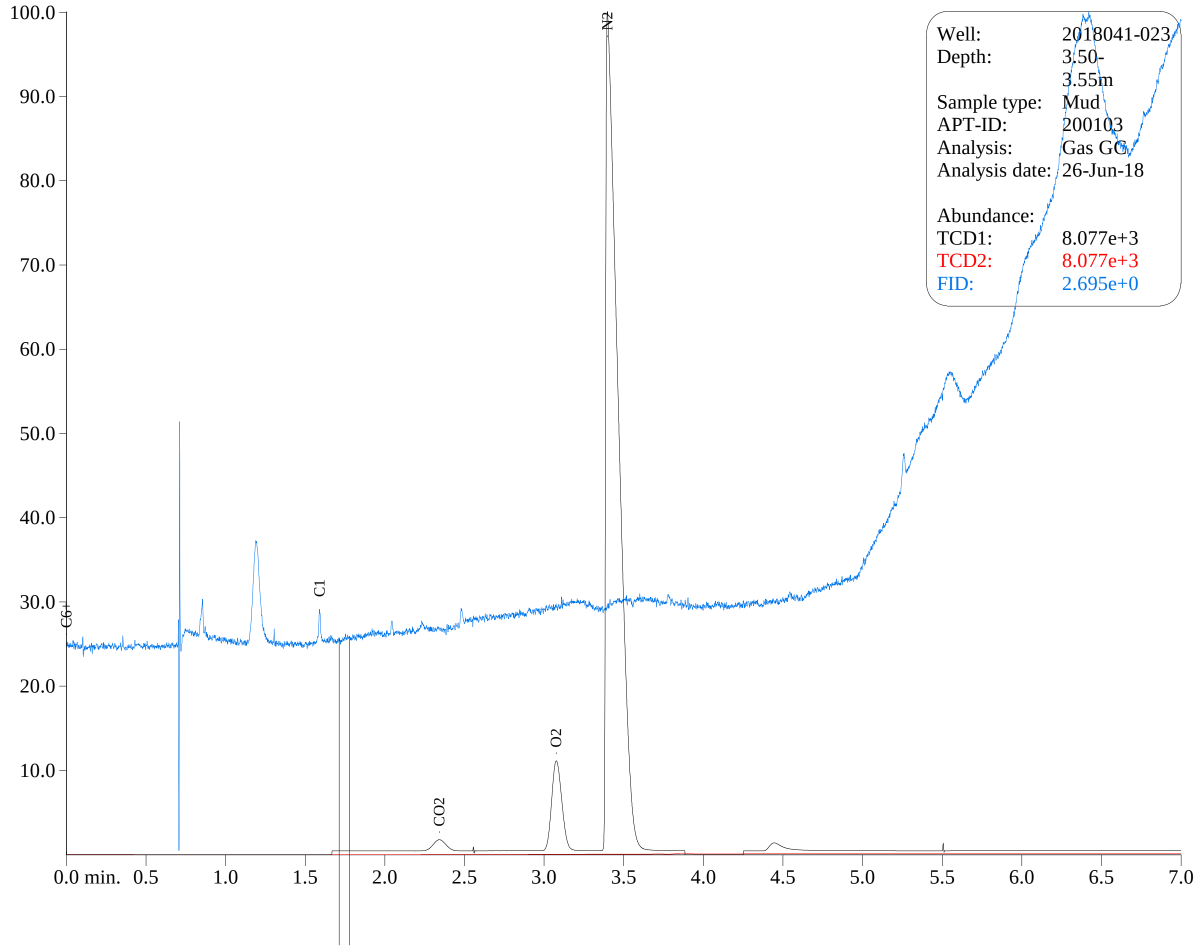
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0 min.
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
5.5
6.0
6.5
7.0
C6+
C1
N2
CO2
O2
Well: 2018041-017
Depth: 5.66-5.71m
Sample type: Mud
APT-ID: 200084
Analysis: Gas GC
Analysis date: 25-Jun-18
Abundance:
TCD1: 8.355e+3
TCD2: 8.355e+3
FID: 2.243e+0



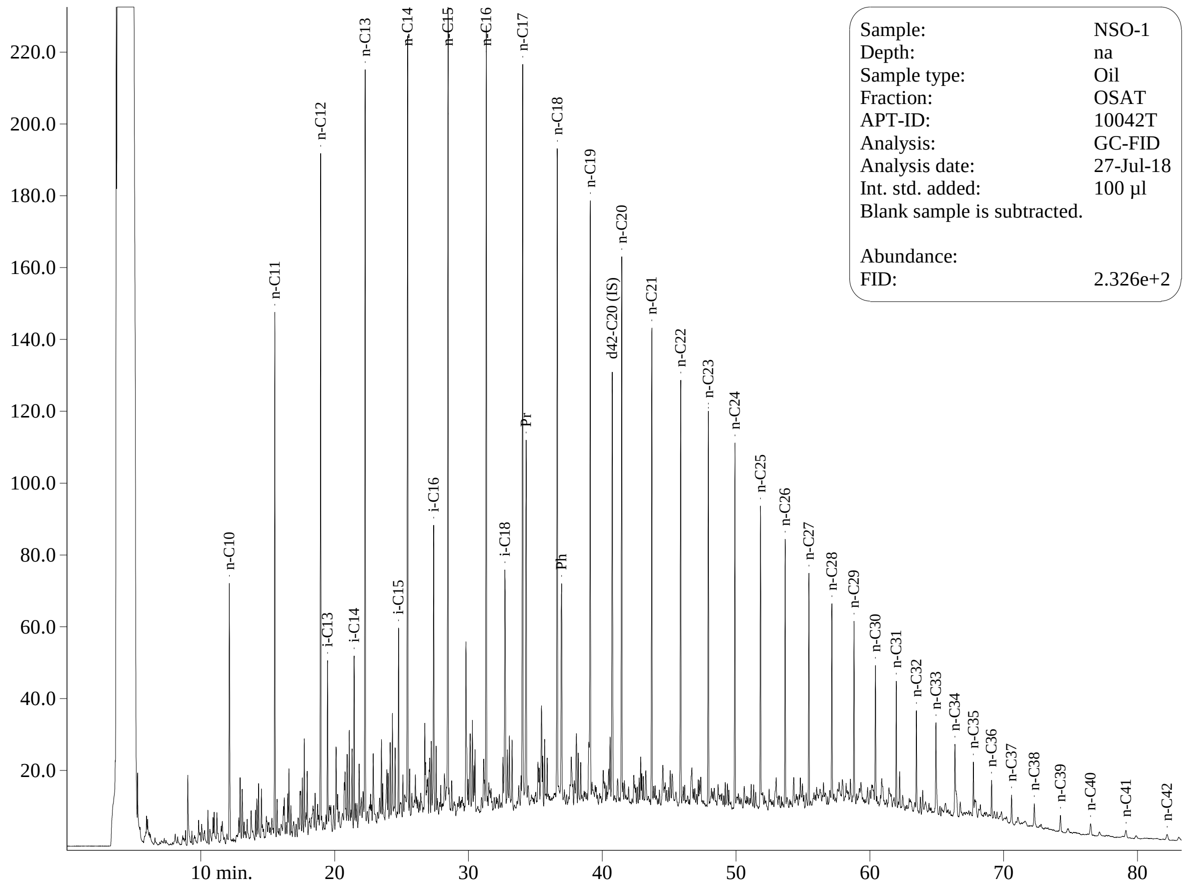
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0 min.
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
5.5
6.0
6.5
7.0
C6+
C1
N2
CO2
O2
Well: 2018041-019
Depth: 5.61-5.66m
Sample type: Mud
APT-ID: 200089
Analysis: Gas GC
Analysis date: 25-Jun-18
Abundance:
TCD1: 8.456e+3
TCD2: 8.456e+3
FID: 2.238e+0

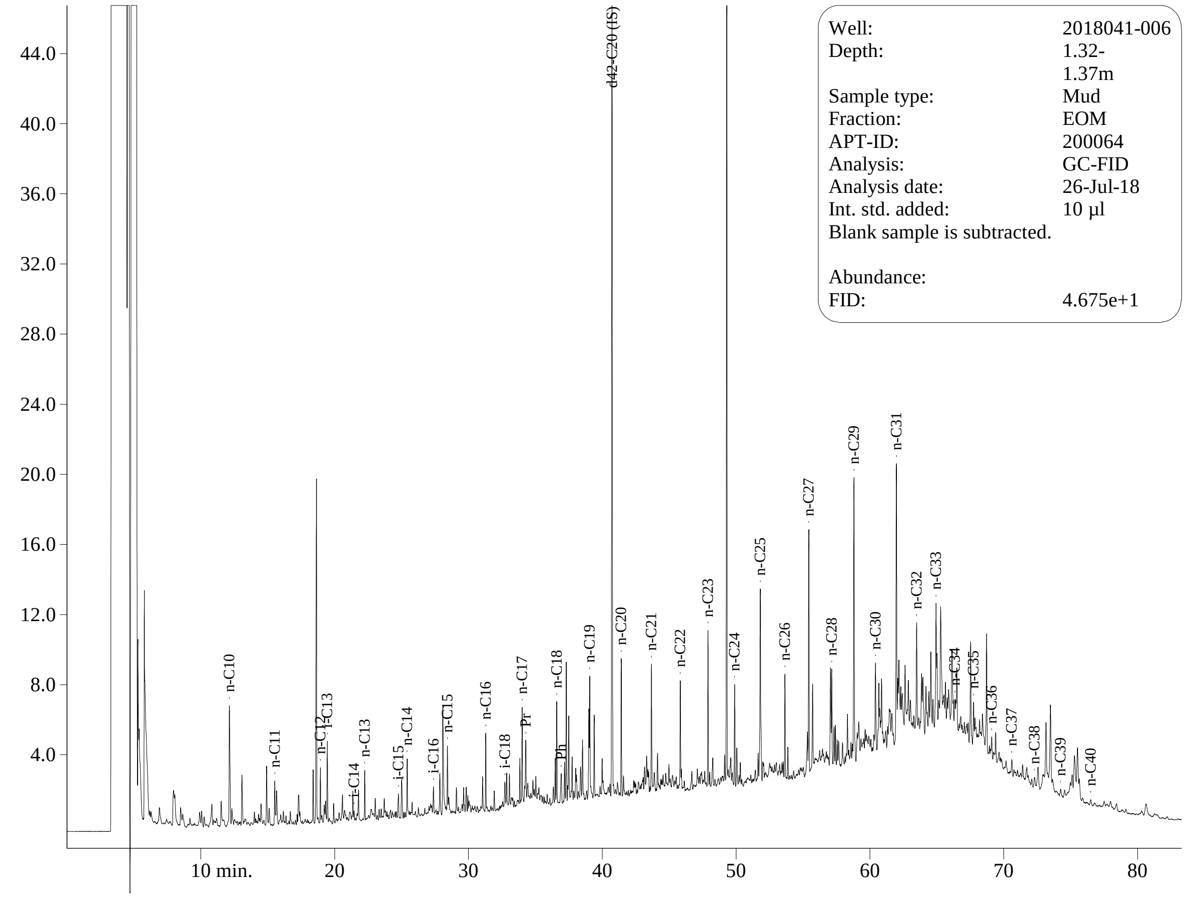

Well: 2018041-021
Depth: 7.25-7.30m
Sample type: Mud
APT-ID: 200094
Analysis: Gas GC
Analysis date: 26-Jun-18
Abundance:
TCD1: 8.298e+3
TCD2: 8.298e+3
FID: 2.251e+0
N2
C1
C6+
CO2
O2
0.0 min. 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0
100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0

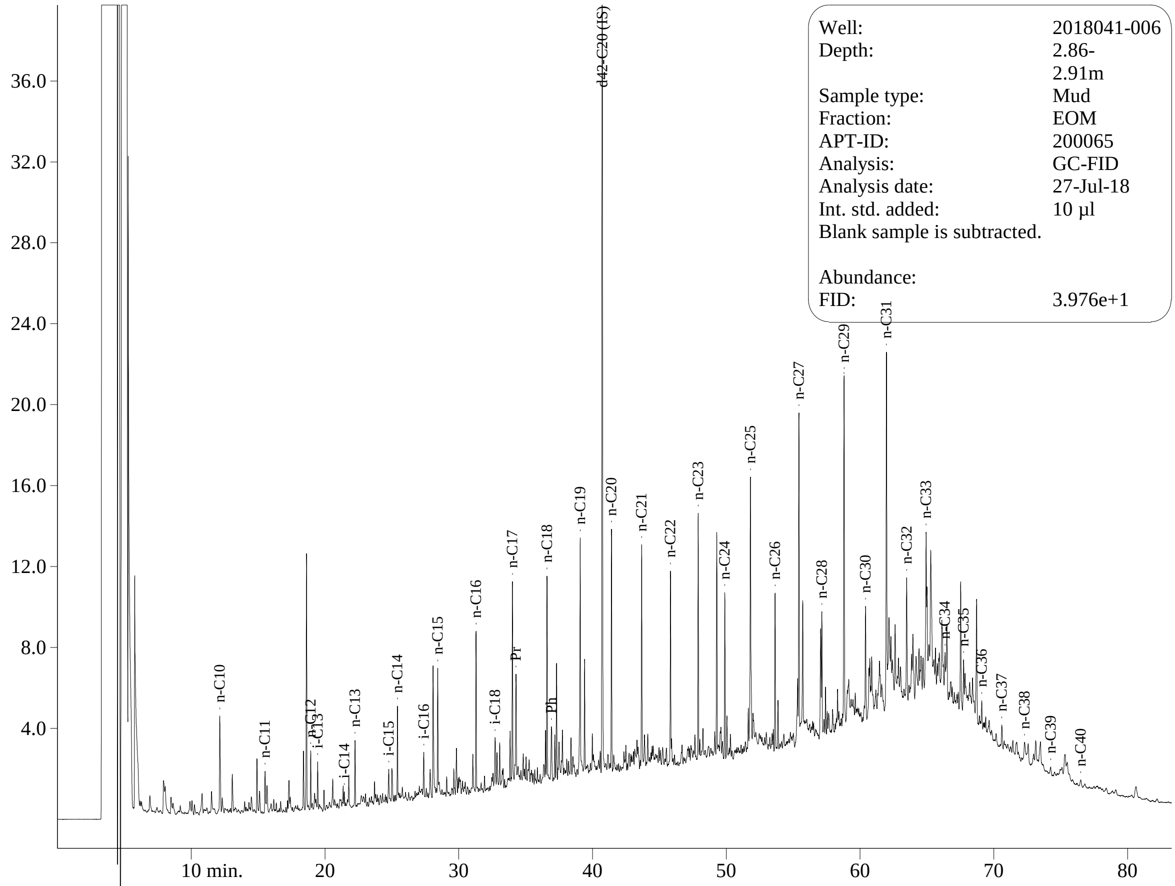

Well: 2018041-022
Depth: 4.74-4.79m
Sample type: Mud
APT-ID: 200099
Analysis: Gas GC
Analysis date: 25-Jun-18
Abundance:
TCD1: 7.462e+3
TCD2: 7.462e+3
FID: 2.322e+0
N2
C1
C6+
O2
CO2
0.0 min. 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0
100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0


Well: 2018041-023
Depth: 3.50-3.55m
Sample type: Mud
APT-ID: 200103
Analysis: Gas GC
Analysis date: 26-Jun-18
Abundance:
TCD1: 8.077e+3
TCD2: 8.077e+3
FID: 2.695e+0
N2
O2
CO2
C1
C6+
0.0 min.
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
5.5
6.0
6.5
7.0

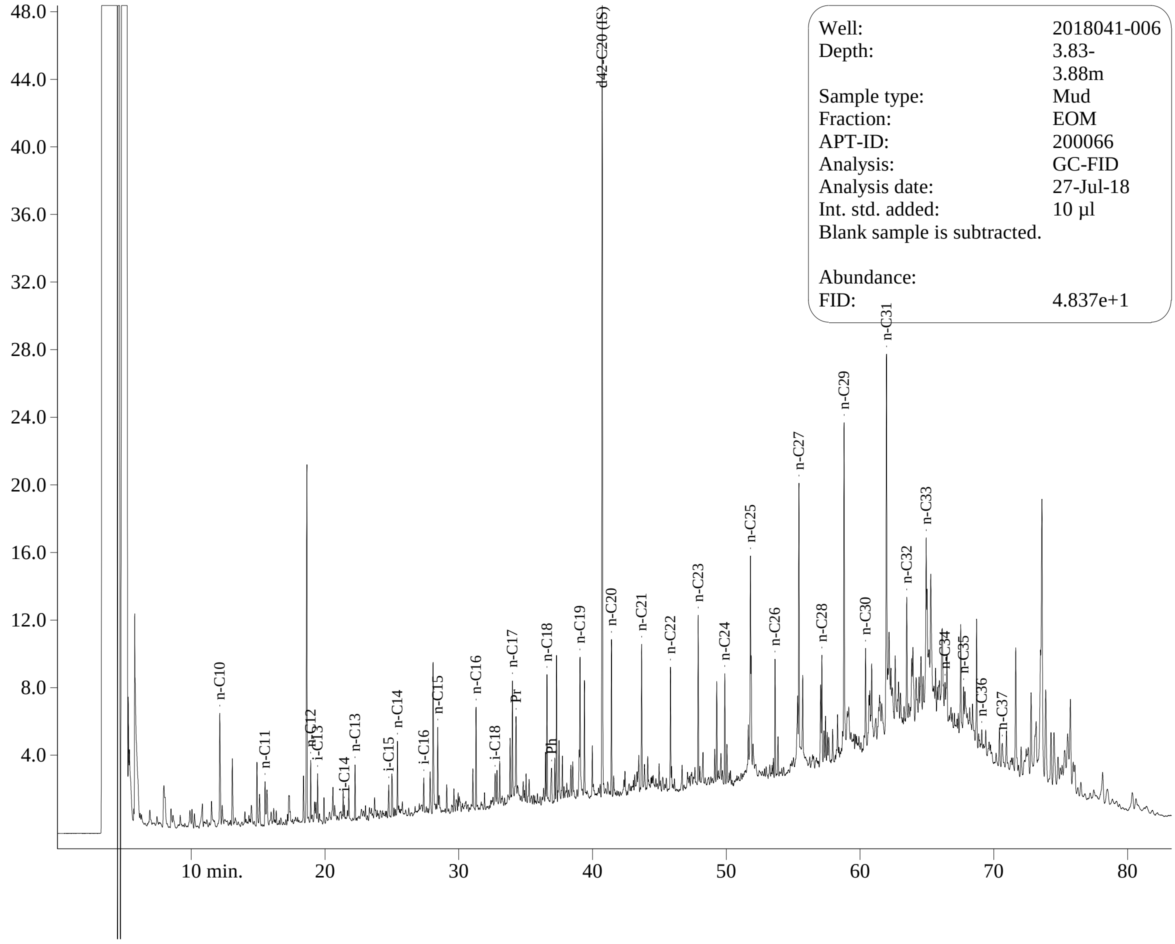
GC Chromatograms of EOM Fractions


Sample: NSO-1
Depth: na
Sample type: Oil
Fraction: OSAT
APT-ID: 10042T
Analysis: GC-FID
Analysis date: 27-Jul-18
Int. std. added: 100 µl
Blank sample is subtracted.
Abundance:
FID: 2.326e+2
10 min.
20
30
40
50
60
70
80
n-C10
n-C11
n-C12
n-C13
n-C14
n-C15
n-C16
n-C17
n-C18
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
n-C40
n-C41
n-C42
i-C13
i-C14
i-C15
i-C16
i-C18
Pr
Ph
d42-C20 (IS)

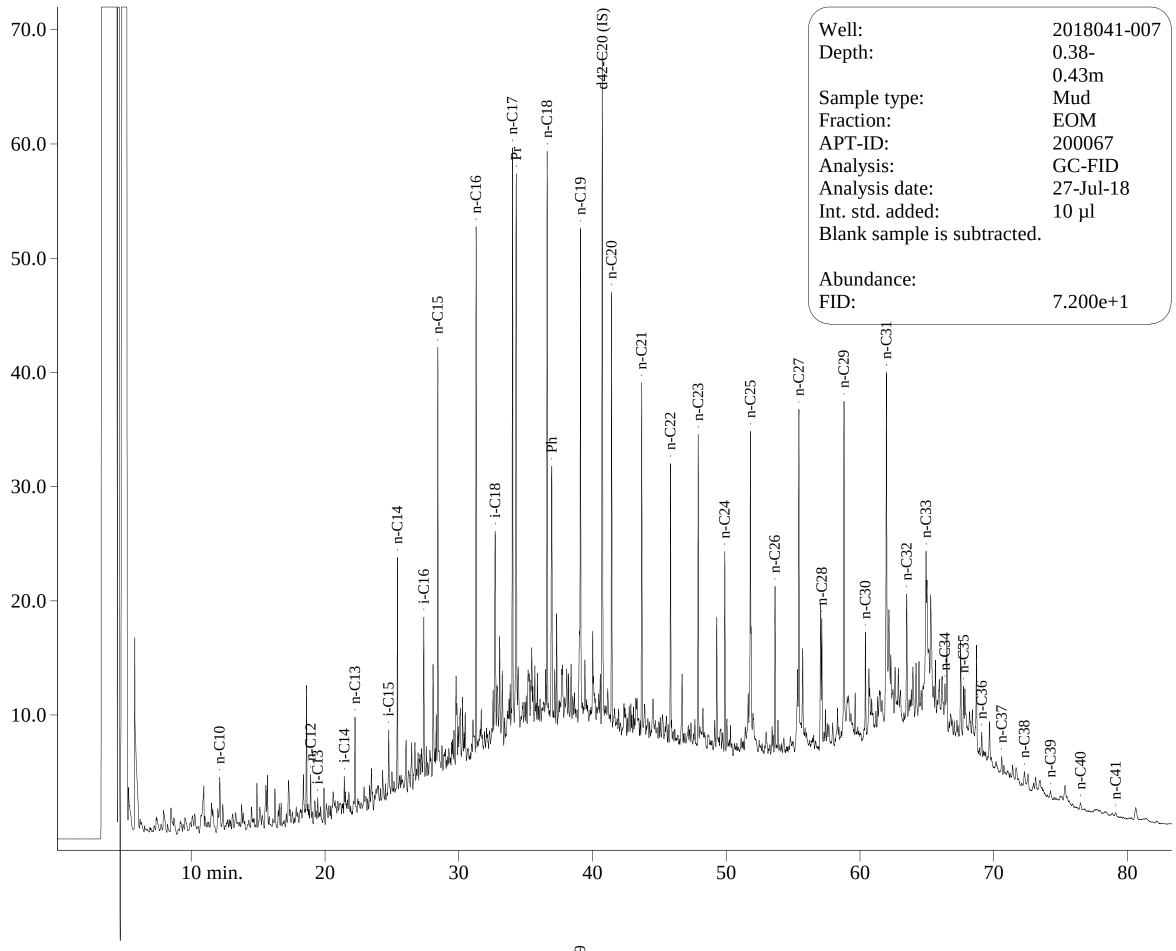

Well: 2018041-006
Depth: 1.32-1.37m
Sample type: Mud
Fraction: EOM
APT-ID: 200064
Analysis: GC-FID
Analysis date: 26-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 4.675e+1
10 min.
20
30
40
50
60
70
80
n-C10
n-C11
n-C12
n-C13
n-C14
n-C15
n-C16
n-C17
n-C18
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
n-C40
i-C13
i-C14
i-C15
i-C16
i-C18
Pr
Ph
d42-C20 (IS)

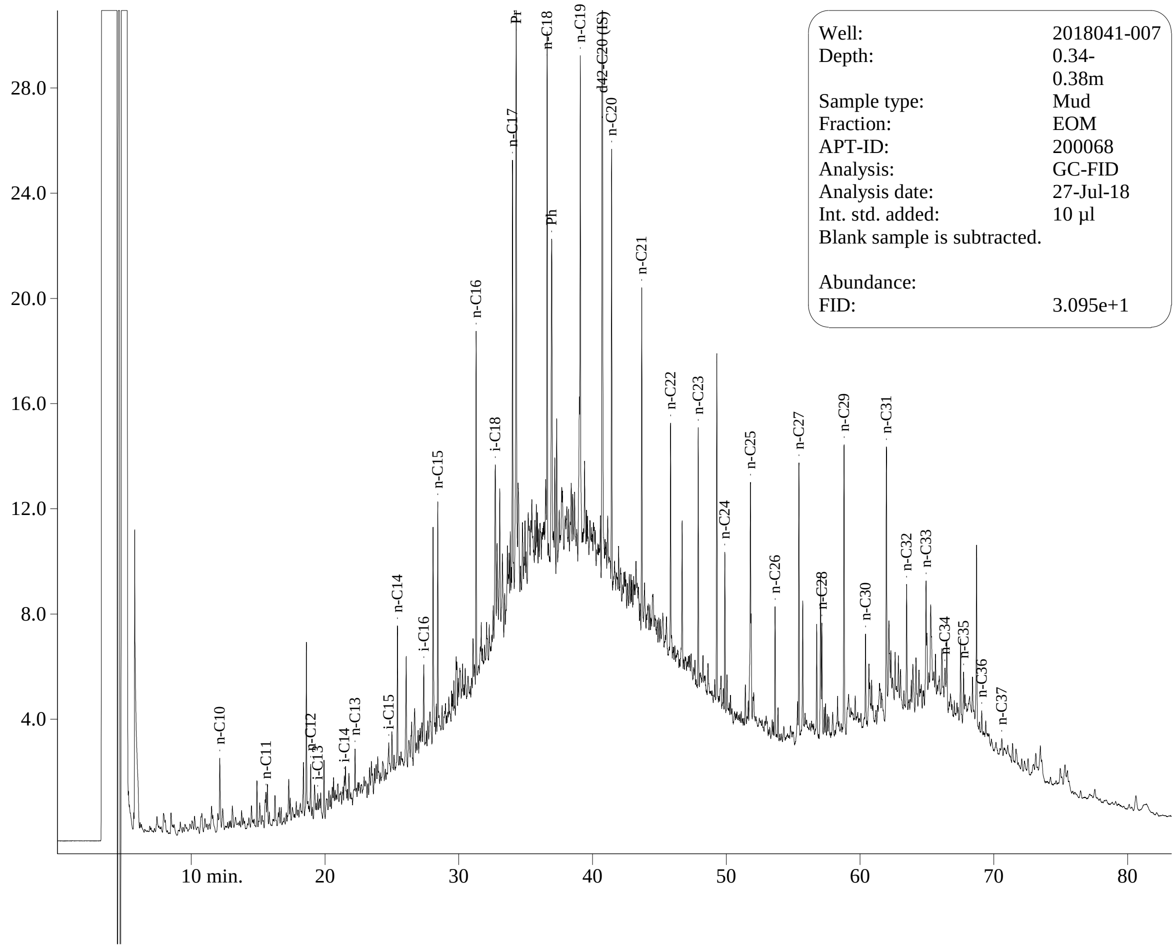


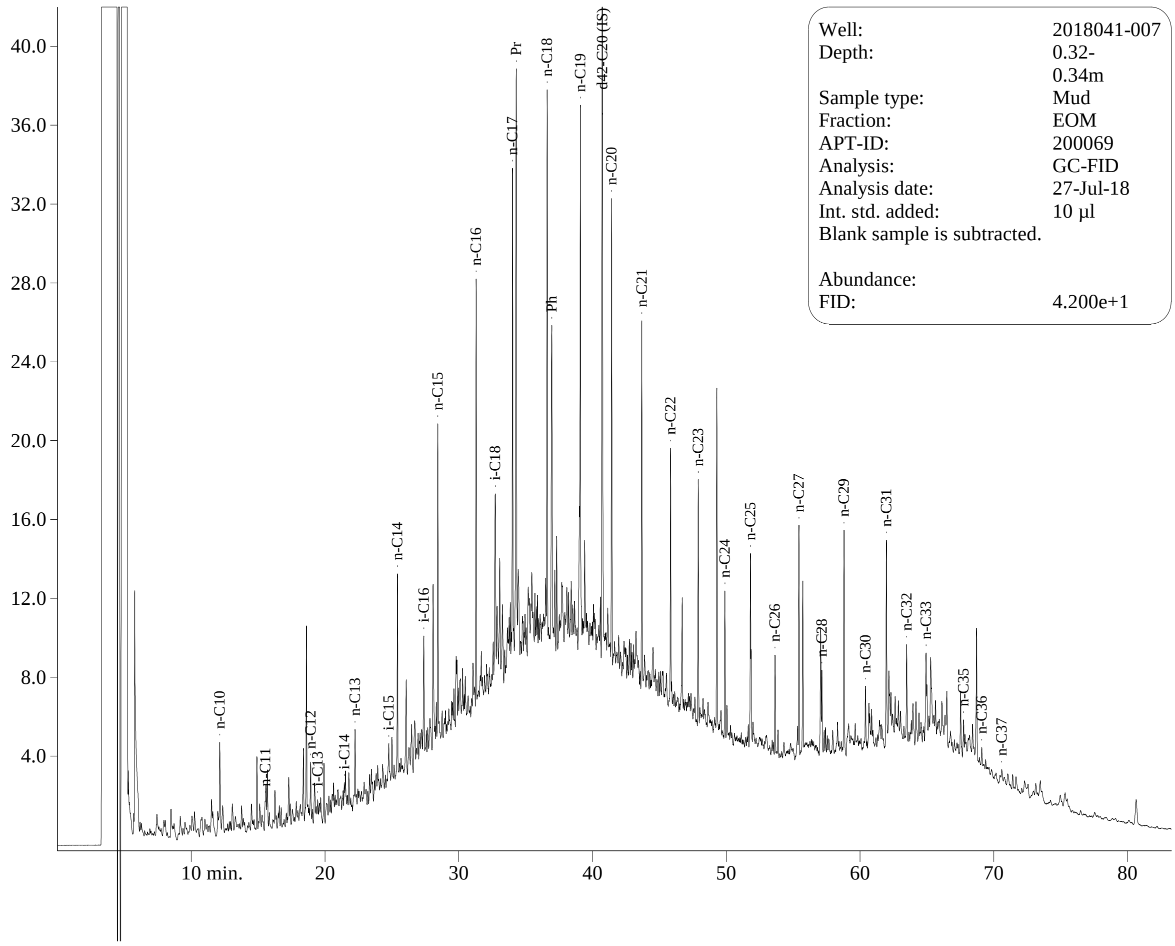
Well: 2018041-006
Depth: 2.86-2.91m
Sample type: Mud
Fraction: EOM
APT-ID: 200065
Analysis: GC-FID
Analysis date: 27-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 3.976e+1
d42-C20 (IS)
n-C10
n-C11
Pr
i-C13
n-C12
i-C14
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
i-C18
n-C17
Pr
n-C18
Ph
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
n-C40
10 min.
20
30
40
50
60
70
80

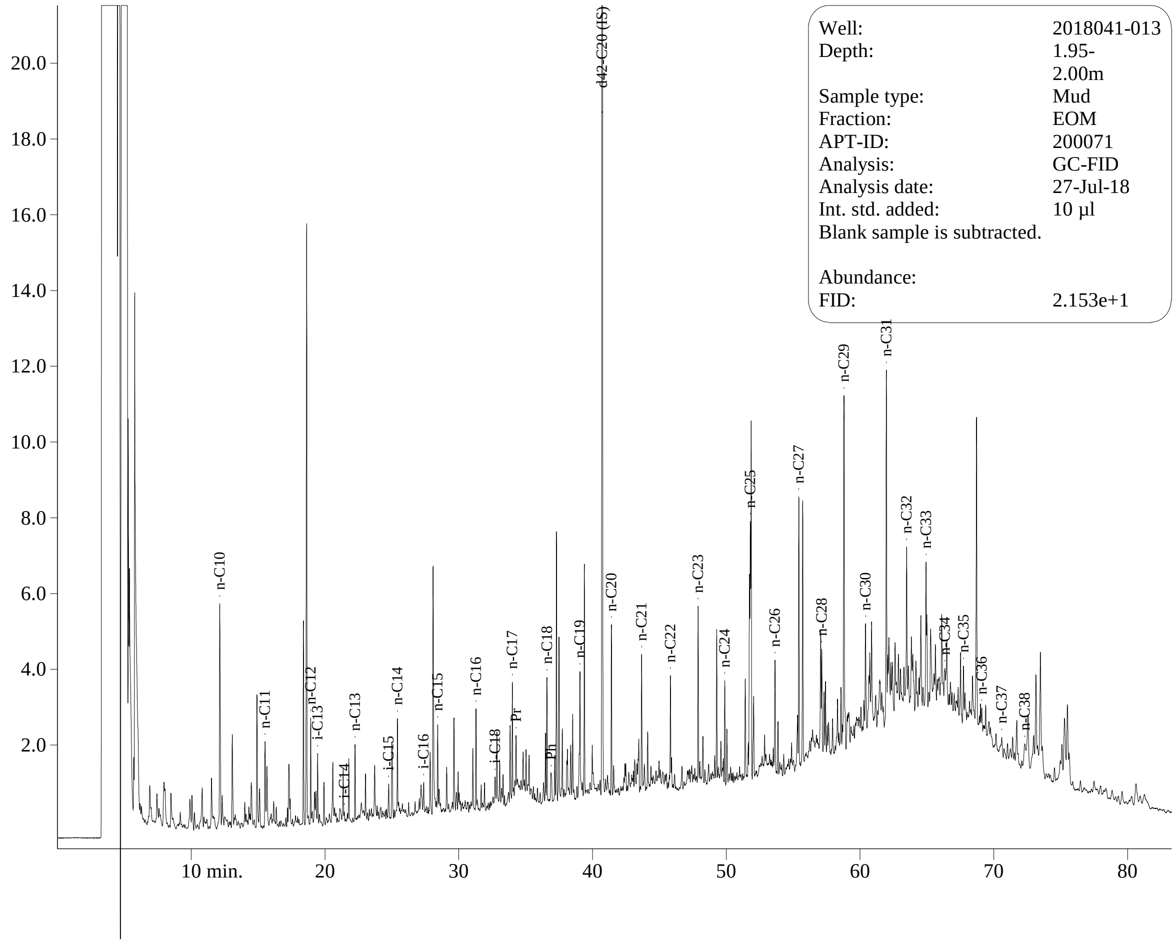


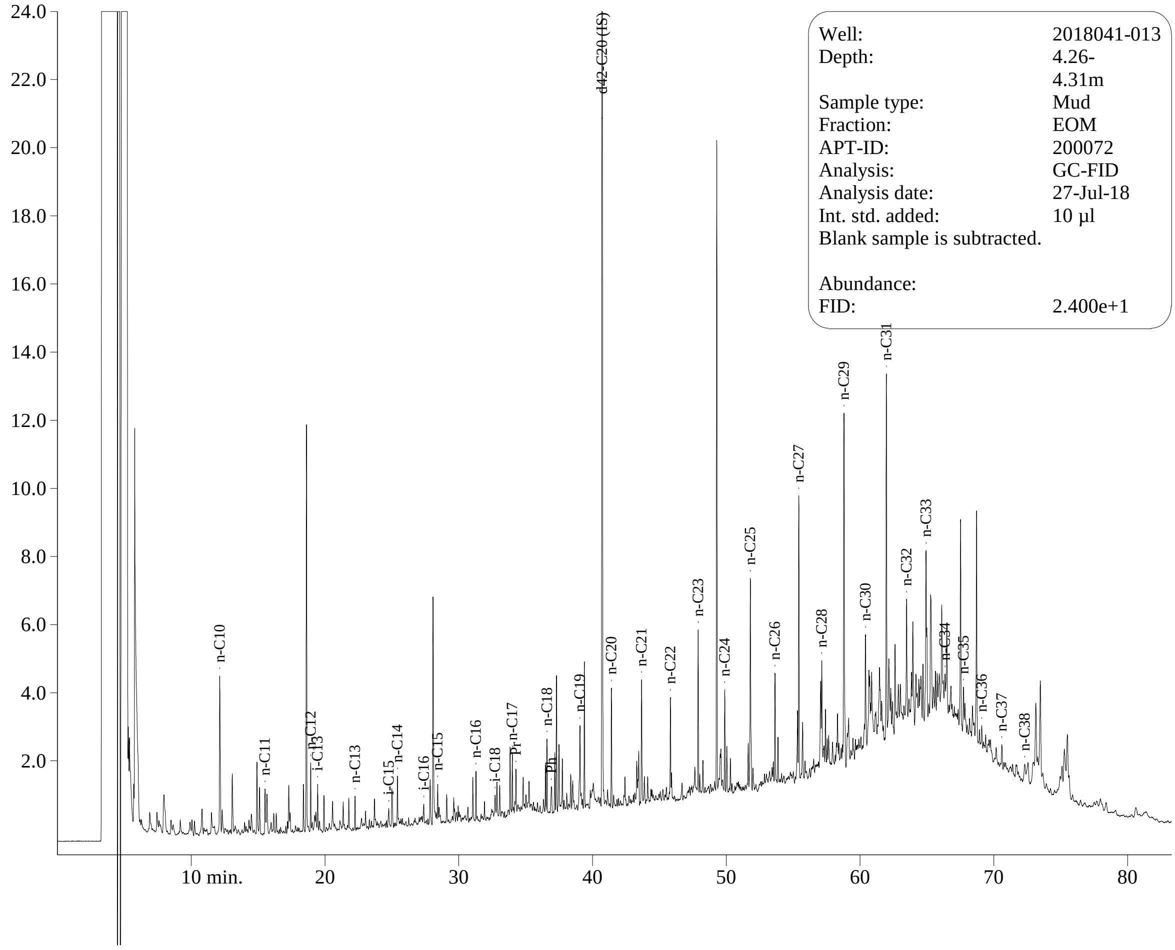
Well: 2018041-006
Depth: 3.83-3.88m
Sample type: Mud
Fraction: EOM
APT-ID: 200066
Analysis: GC-FID
Analysis date: 27-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 4.837e+1
d42-C20 (IS)
n-C10
n-C11
Pr
i-C13
n-C12
i-C14
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
i-C18
n-C17
Pr
n-C18
Ph
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
10 min.
20
30
40
50
60
70
80

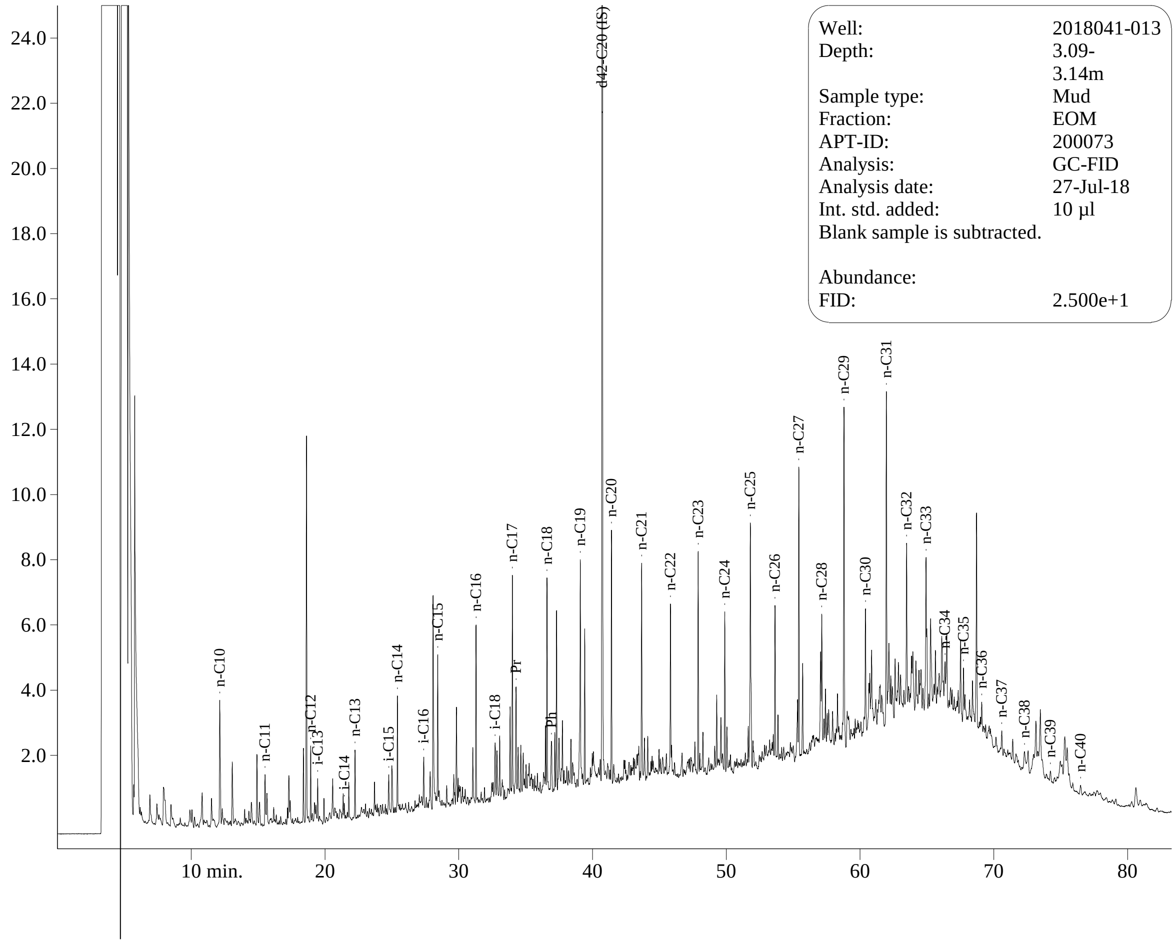

Well: 2018041-007
Depth: 0.38-0.43m
Sample type: Mud
Fraction: EOM
APT-ID: 200067
Analysis: GC-FID
Analysis date: 27-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 7.200e+1

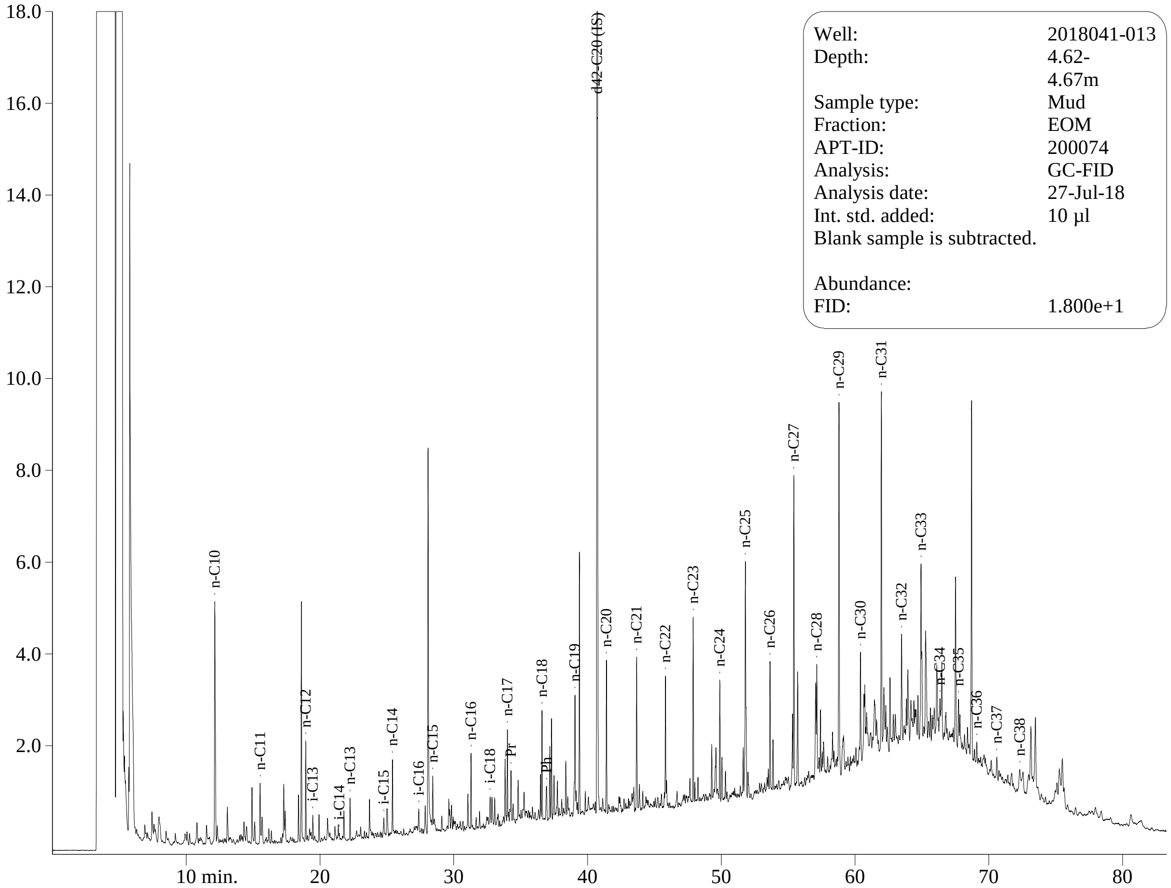

Well: 2018041-007
Depth: 0.34-0.38m
Sample type: Mud
Fraction: EOM
APT-ID: 200068
Analysis: GC-FID
Analysis date: 27-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 3.095e+1

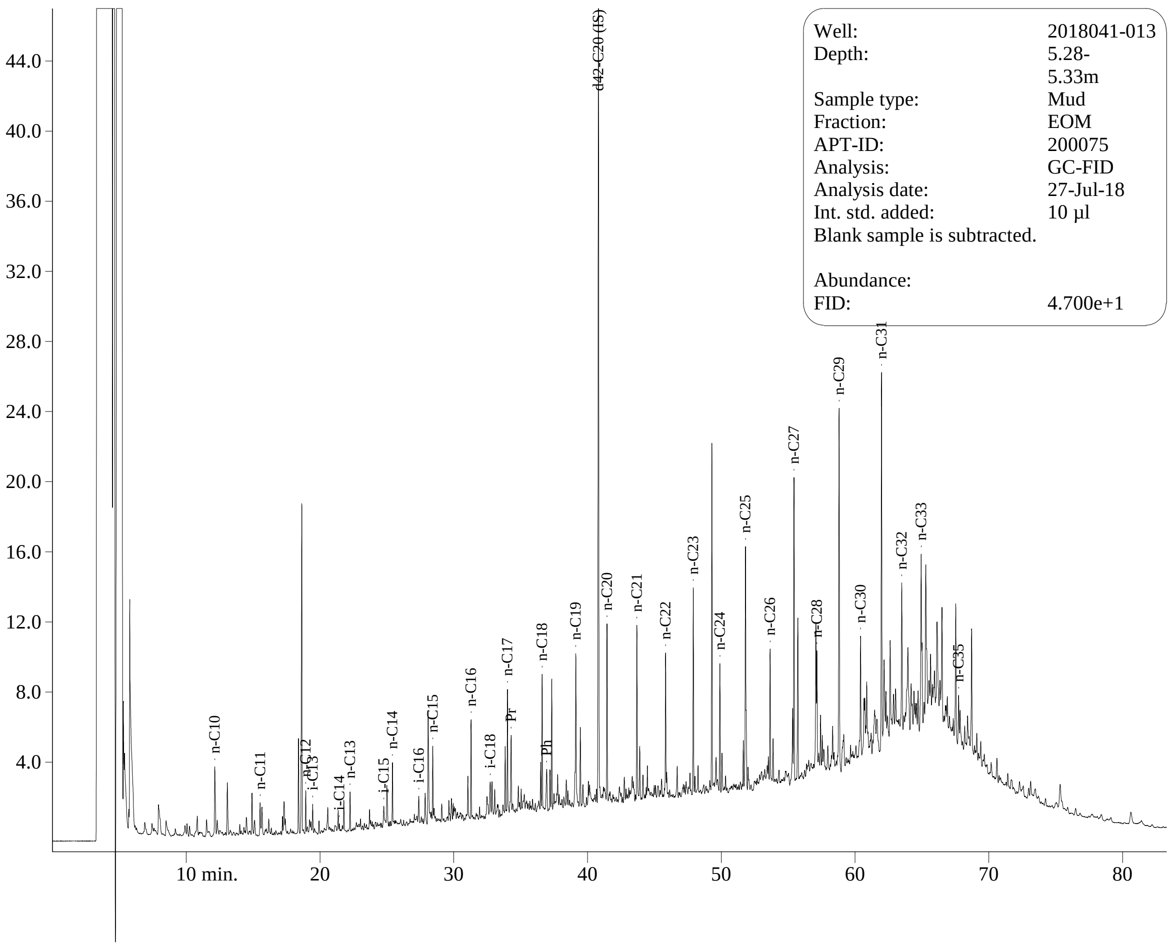

Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: EOM
APT-ID: 200069
Analysis: GC-FID
Analysis date: 27-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 4.200e+1
n-C10
n-C11
n-C12
i-C13
n-C13
i-C14
n-C14
i-C15
n-C15
i-C16
n-C16
i-C18
n-C17
Pr
n-C18
Ph
n-C19
d42-C20 (IS)
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C35
n-C36
n-C37
10 min.
20
30
40
50
60
70
80

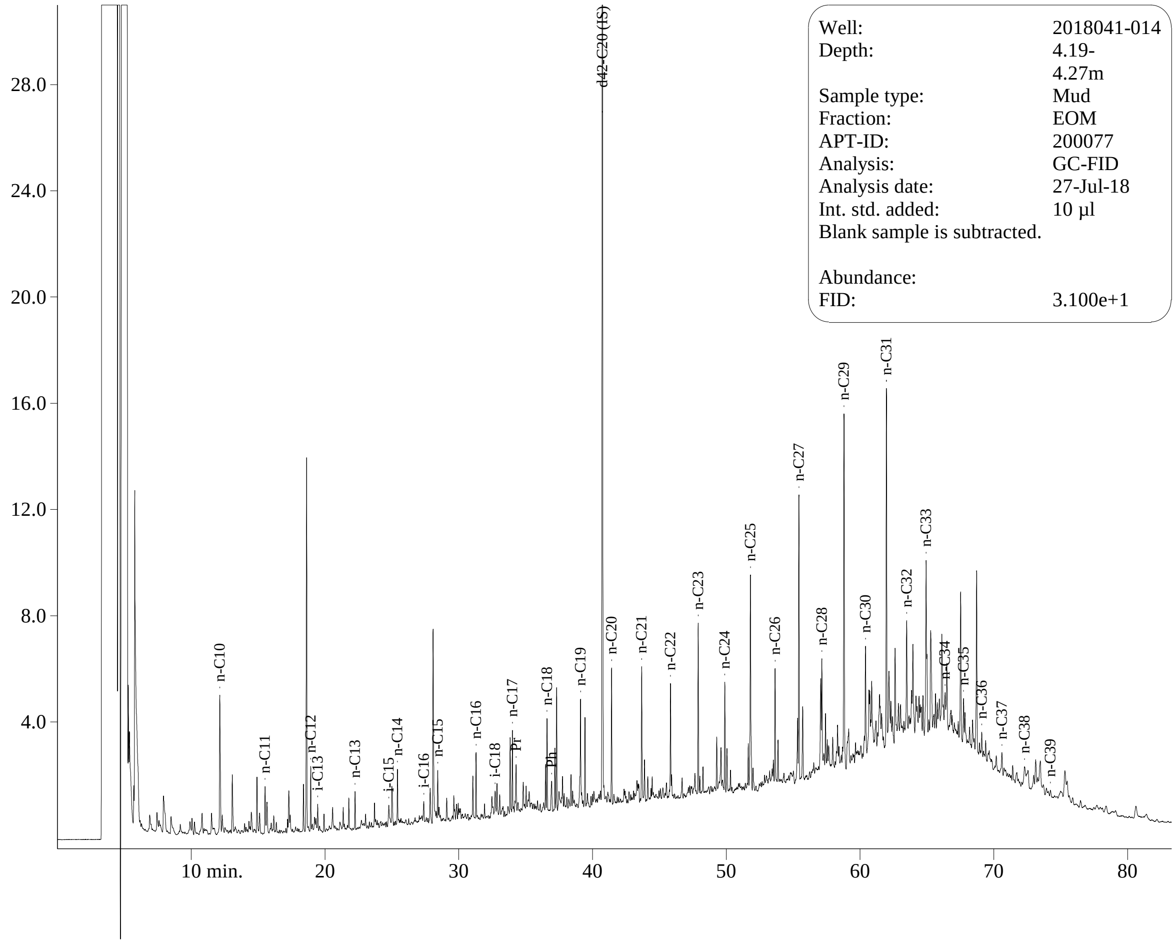

Well: 2018041-013
Depth: 1.95-2.00m
Sample type: Mud
Fraction: EOM
APT-ID: 200071
Analysis: GC-FID
Analysis date: 27-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 2.153e+1
n-C10
n-C11
n-C12
i-C13
n-C13
i-C14
n-C14
i-C15
n-C15
i-C16
n-C16
i-C18
n-C17
Pr
n-C18
Ph
n-C19
d42-C20 (IS)
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
10 min.
20
30
40
50
60
70
80

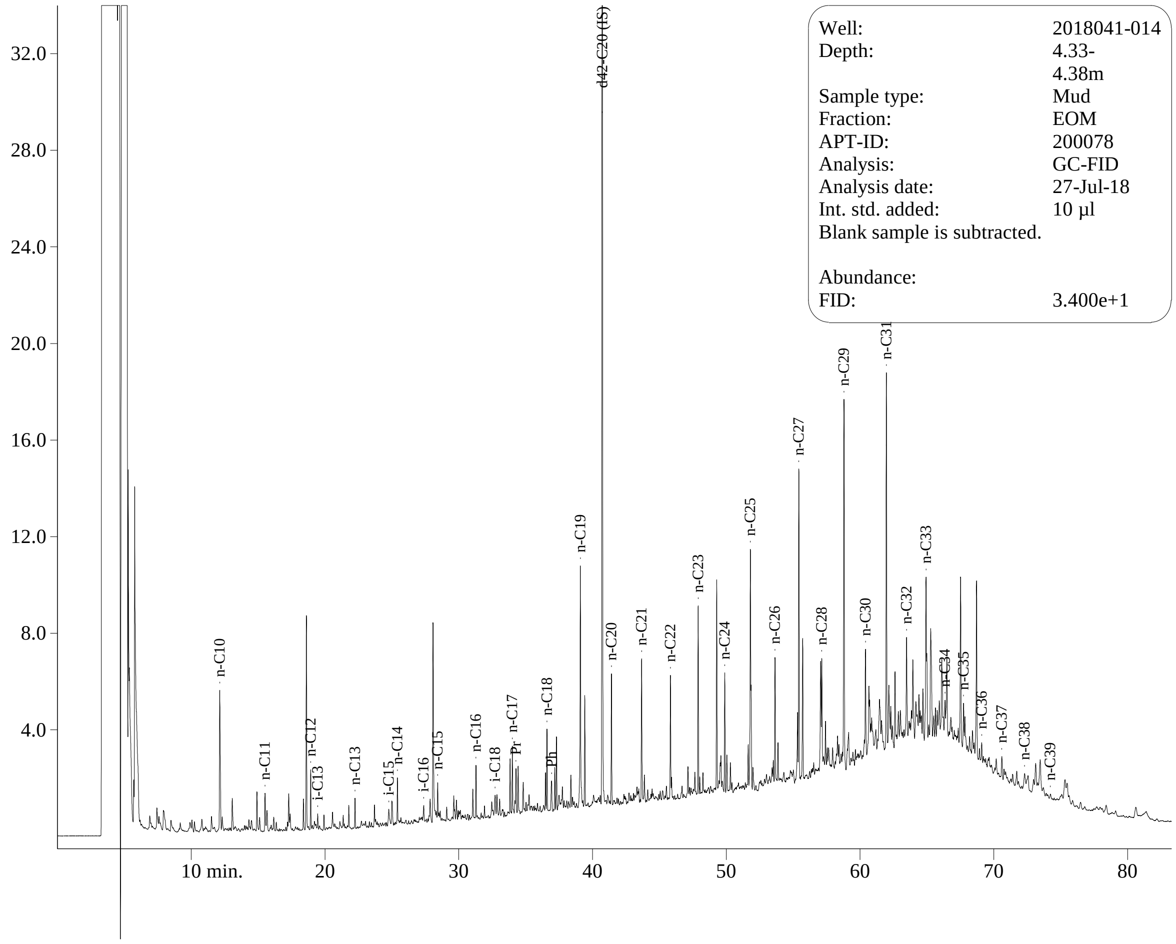

Well: 2018041-013
Depth: 4.26-4.31m
Sample type: Mud
Fraction: EOM
APT-ID: 200072
Analysis: GC-FID
Analysis date: 27-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 2.400e+1
d42-C20 (IS)
n-C10
n-C11
n-C12
i-C13
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
i-C18
Pr
n-C17
n-C18
Ph
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
10 min.
20
30
40
50
60
70
80

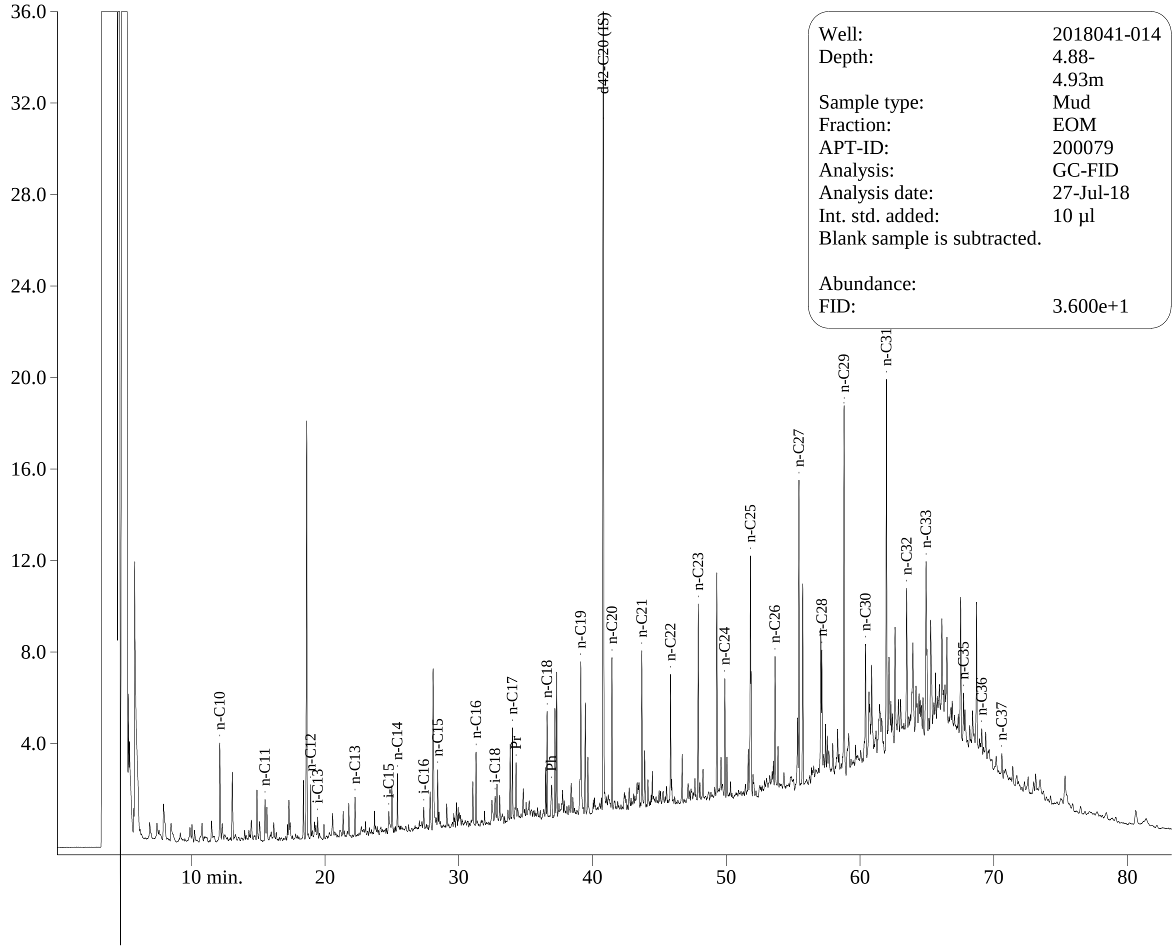

Well: 2018041-013
Depth: 3.09-3.14m
Sample type: Mud
Fraction: EOM
APT-ID: 200073
Analysis: GC-FID
Analysis date: 27-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 2.500e+1
d42-C20 (IS)
n-C10
n-C11
n-C12
i-C13
i-C14
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
i-C18
Pr
n-C17
n-C18
Ph
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
n-C40
10 min.
20
30
40
50
60
70
80

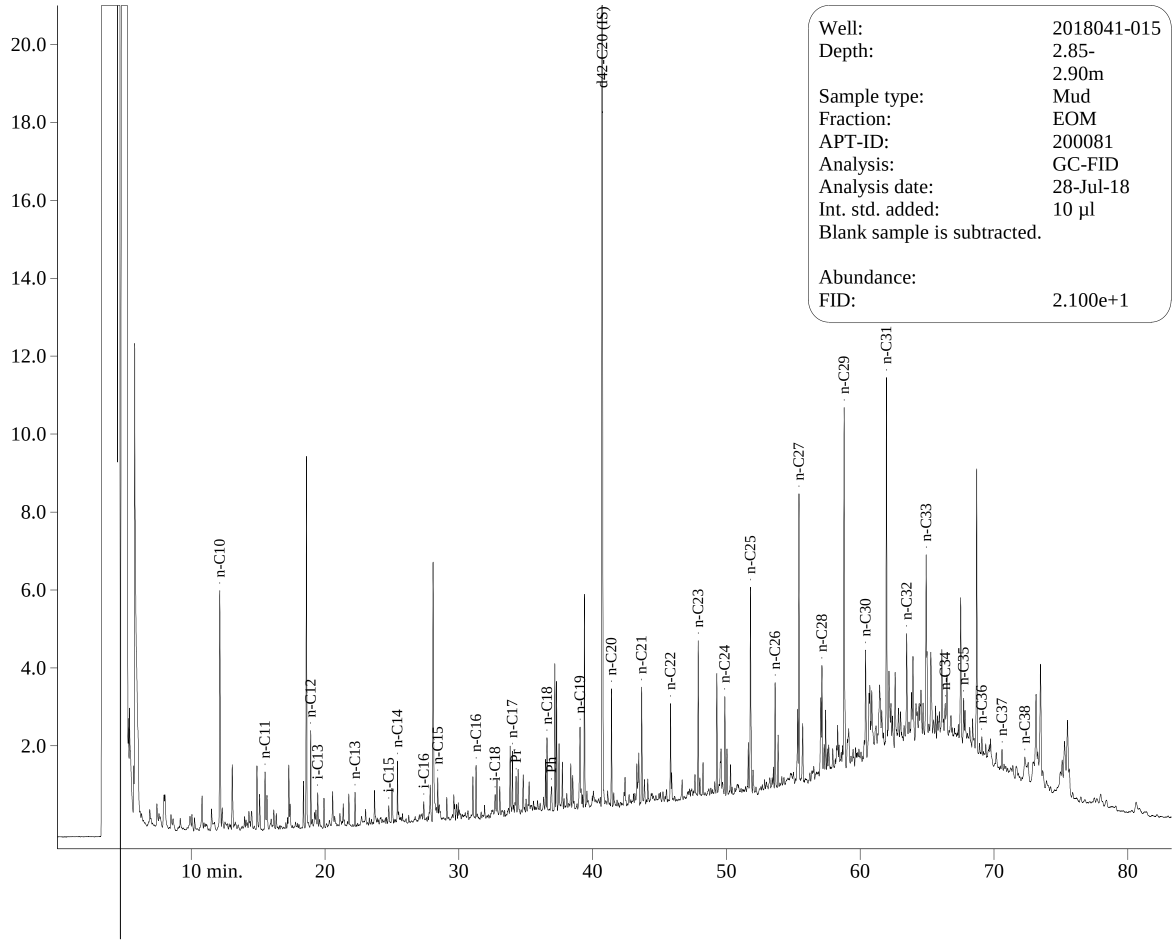

Well: 2018041-013
Depth: 4.62-4.67m
Sample type: Mud
Fraction: EOM
APT-ID: 200074
Analysis: GC-FID
Analysis date: 27-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 1.800e+1
d42-C20 (IS)
n-C10
n-C11
n-C12
i-C13
n-C13
i-C14
n-C14
i-C15
i-C16
n-C15
n-C16
i-C18
n-C17
Pr
n-C18
Ph
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
10 min.

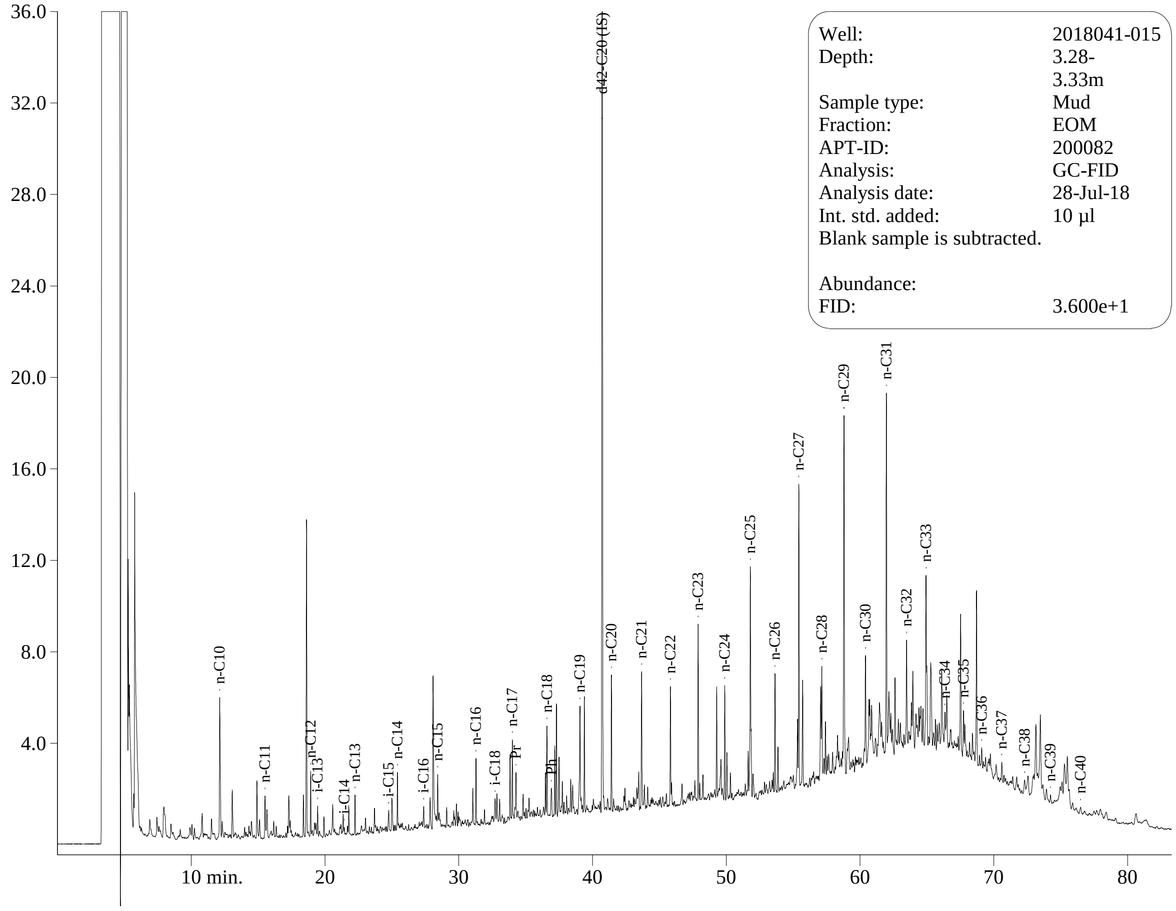

Well: 2018041-013
Depth: 5.28-5.33m
Sample type: Mud
Fraction: EOM
APT-ID: 200075
Analysis: GC-FID
Analysis date: 27-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 4.700e+1
d42-C20 (IS)
n-C10
n-C11
n-C12
i-C13
n-C13
i-C14
n-C14
i-C15
i-C16
n-C15
n-C16
i-C18
n-C17
Pr
n-C18
Ph
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C35
10 min.

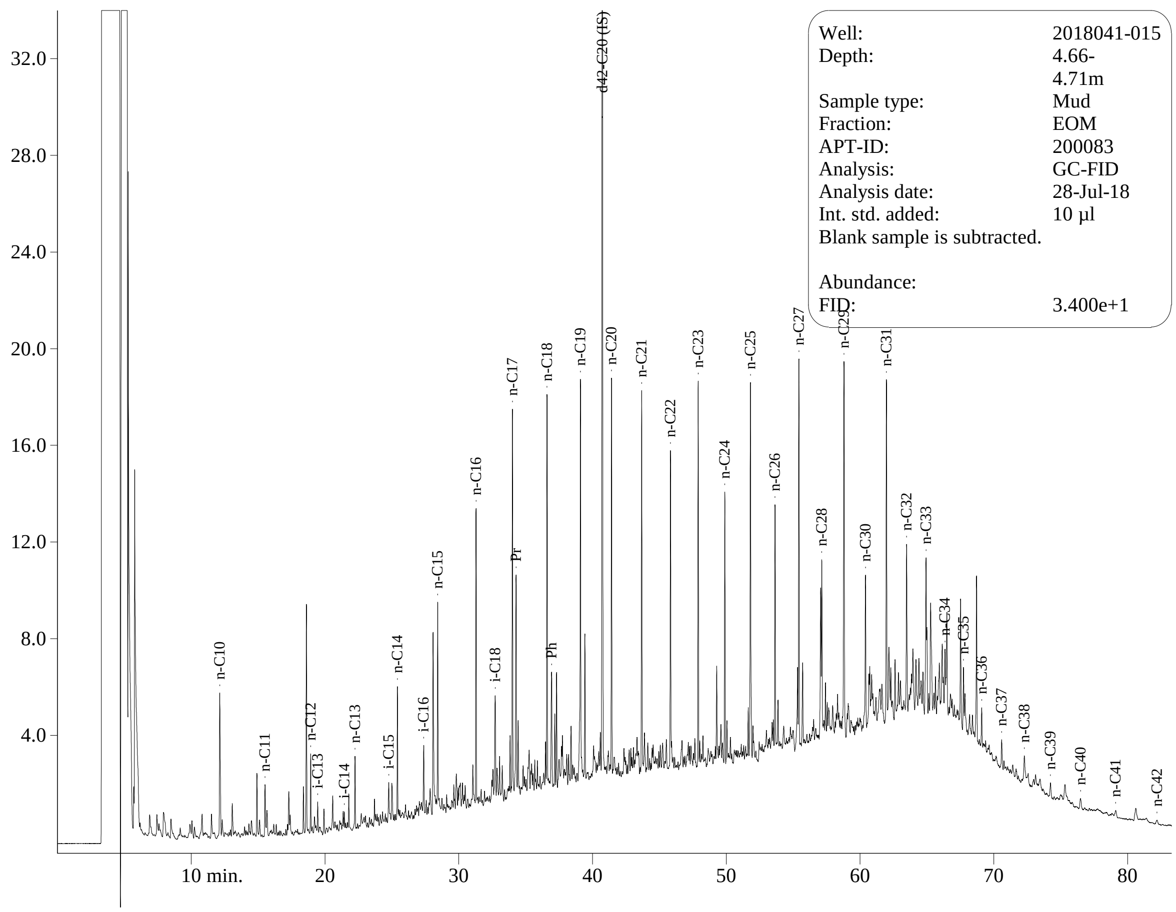

Well: 2018041-014
Depth: 4.19-4.27m
Sample type: Mud
Fraction: EOM
APT-ID: 200077
Analysis: GC-FID
Analysis date: 27-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 3.100e+1
d42-C20 (IS)
n-C10
n-C11
n-C12
i-C13
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
i-C18
n-C17
Pr
n-C18
Ph
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
10 min.

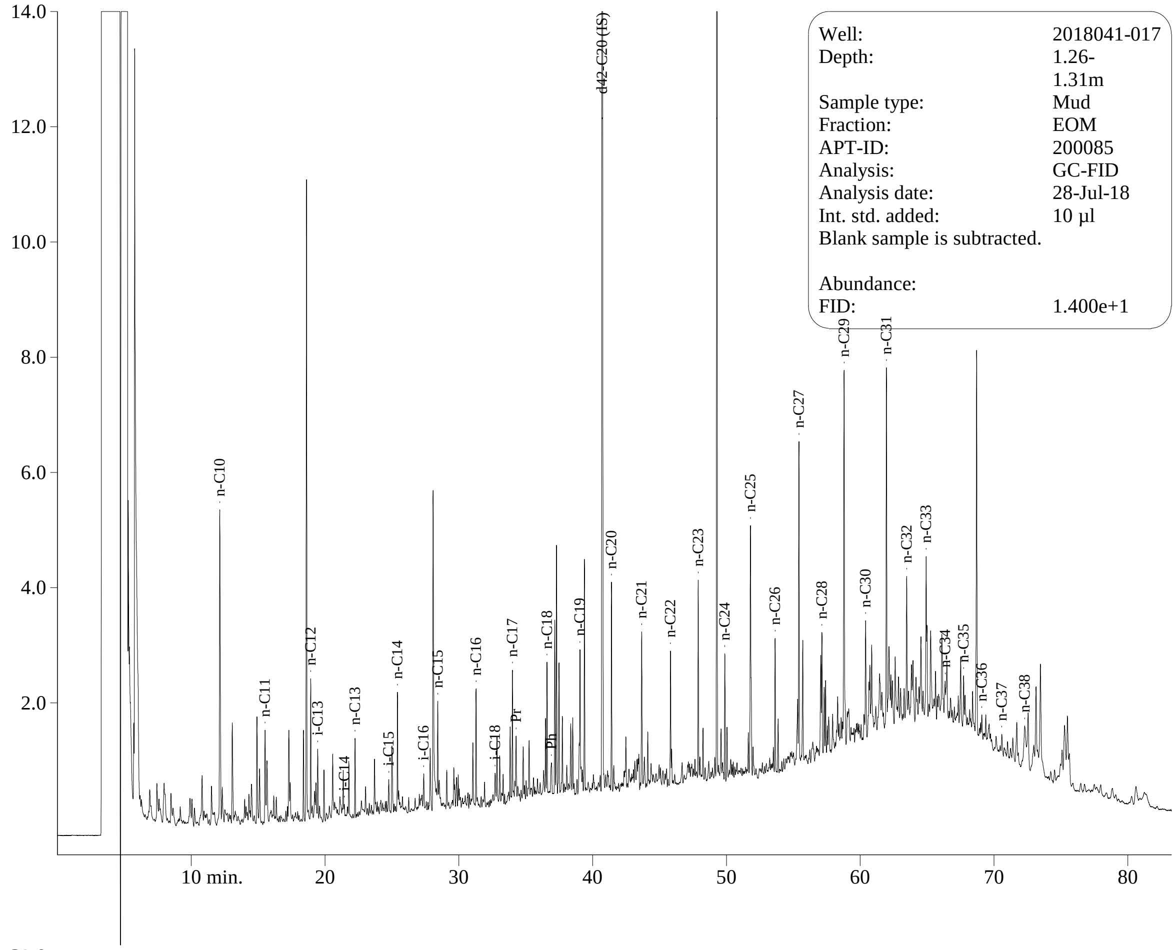

Well: 2018041-014
Depth: 4.33-4.38m
Sample type: Mud
Fraction: EOM
APT-ID: 200078
Analysis: GC-FID
Analysis date: 27-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 3.400e+1
d42-C20 (IS)
n-C10
n-C11
n-C12
i-C13
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
i-C18
n-C17
Pr
n-C18
Ph
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
10 min.

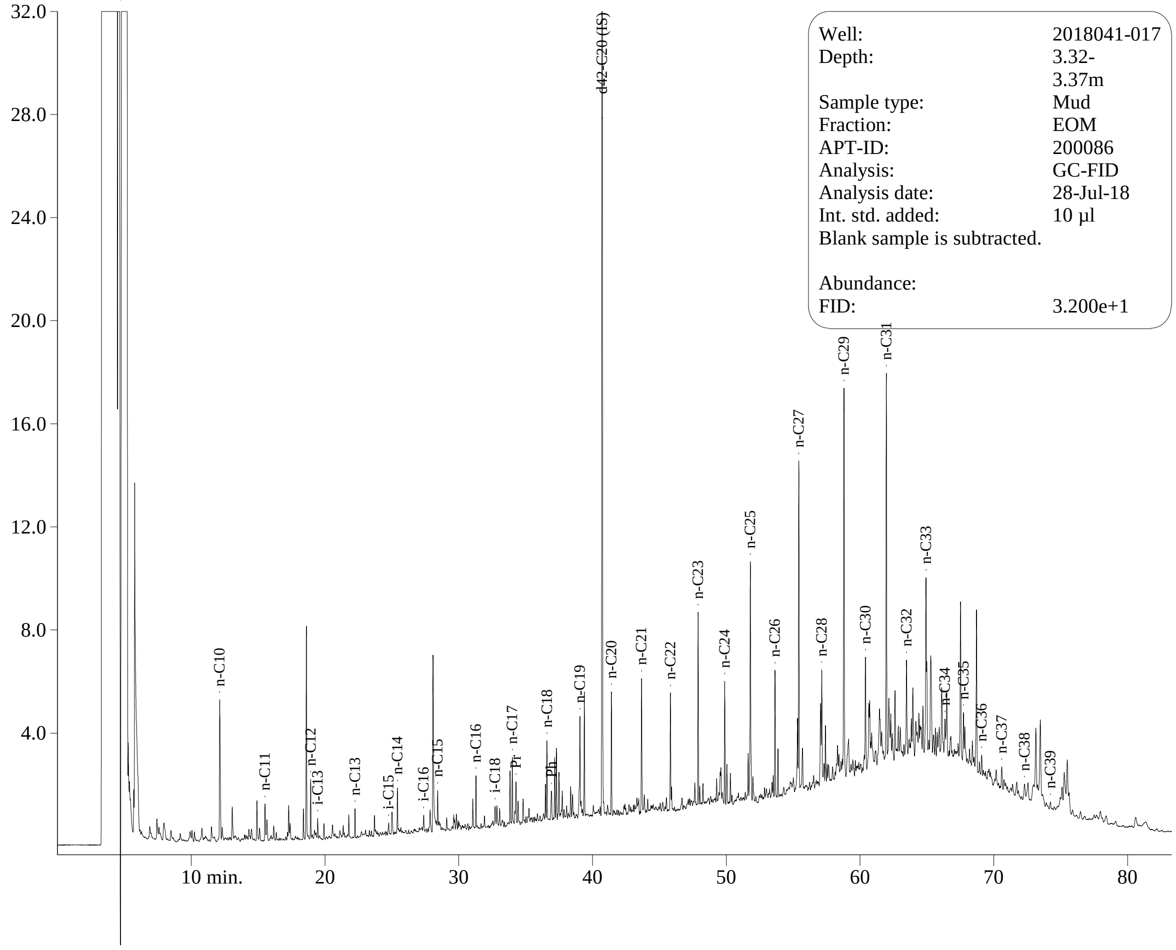

36.0
32.0
28.0
24.0
20.0
16.0
12.0
8.0
4.0
10 min.
20
30
40
50
60
70
80
n-C10
n-C11
n-C12
i-C13
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
i-C18
n-C17
Pr
n-C18
Ph
n-C19
d42-C20 (IS)
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C35
n-C36
n-C37
Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: EOM
APT-ID: 200079
Analysis: GC-FID
Analysis date: 27-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 3.600e+1

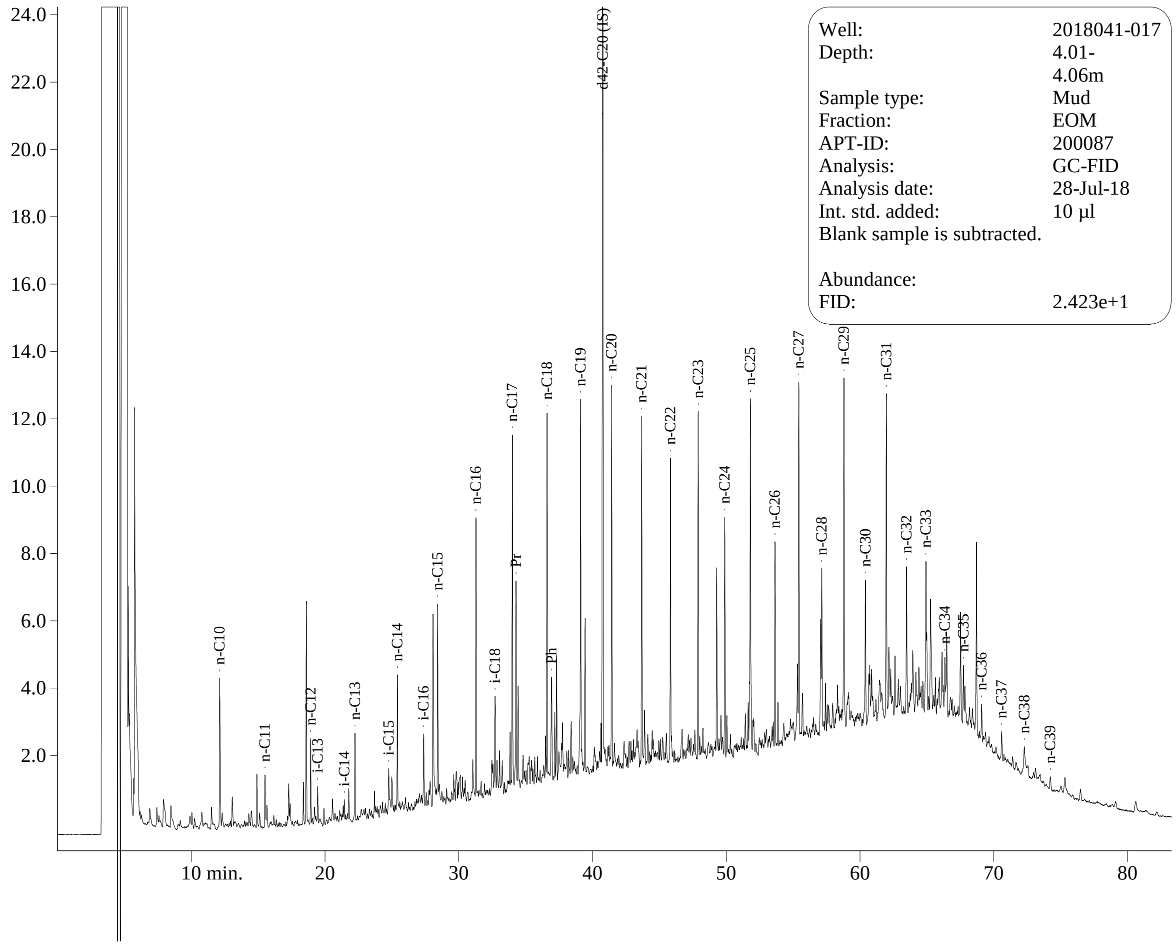

20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
10 min.
20
30
40
50
60
70
80
n-C10
n-C11
n-C12
i-C13
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
i-C18
n-C17
Pr
n-C18
Ph
n-C19
d42-C20 (IS)
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
Well: 2018041-015
Depth: 2.85-2.90m
Sample type: Mud
Fraction: EOM
APT-ID: 200081
Analysis: GC-FID
Analysis date: 28-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 2.100e+1

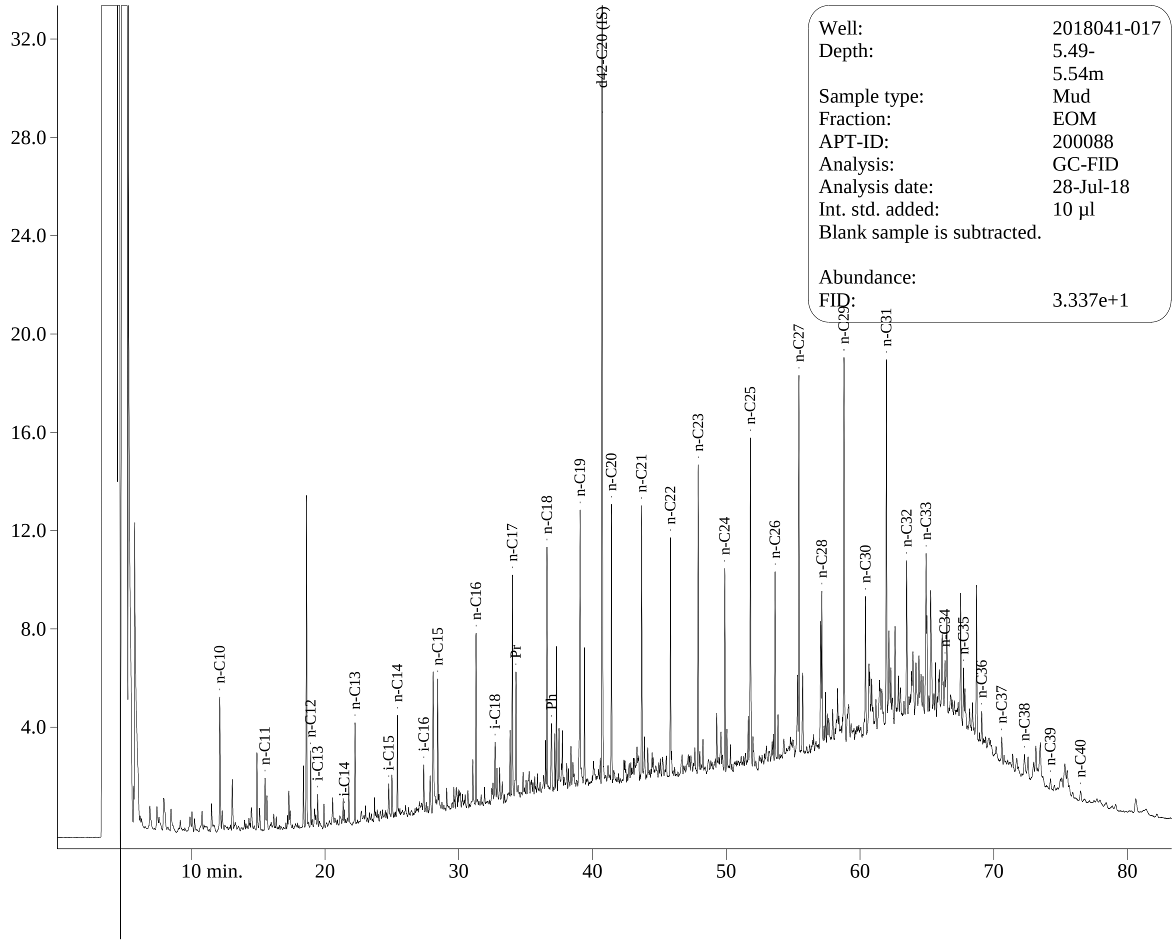

Well: 2018041-015
Depth: 3.28-3.33m
Sample type: Mud
Fraction: EOM
APT-ID: 200082
Analysis: GC-FID
Analysis date: 28-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 3.600e+1
10 min.
d42-C20 (IS)
Pr
Ph
n-C10
n-C11
n-C12
i-C13
n-C13
i-C14
n-C14
i-C15
n-C15
i-C16
n-C16
n-C17
i-C18
n-C18
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
n-C40

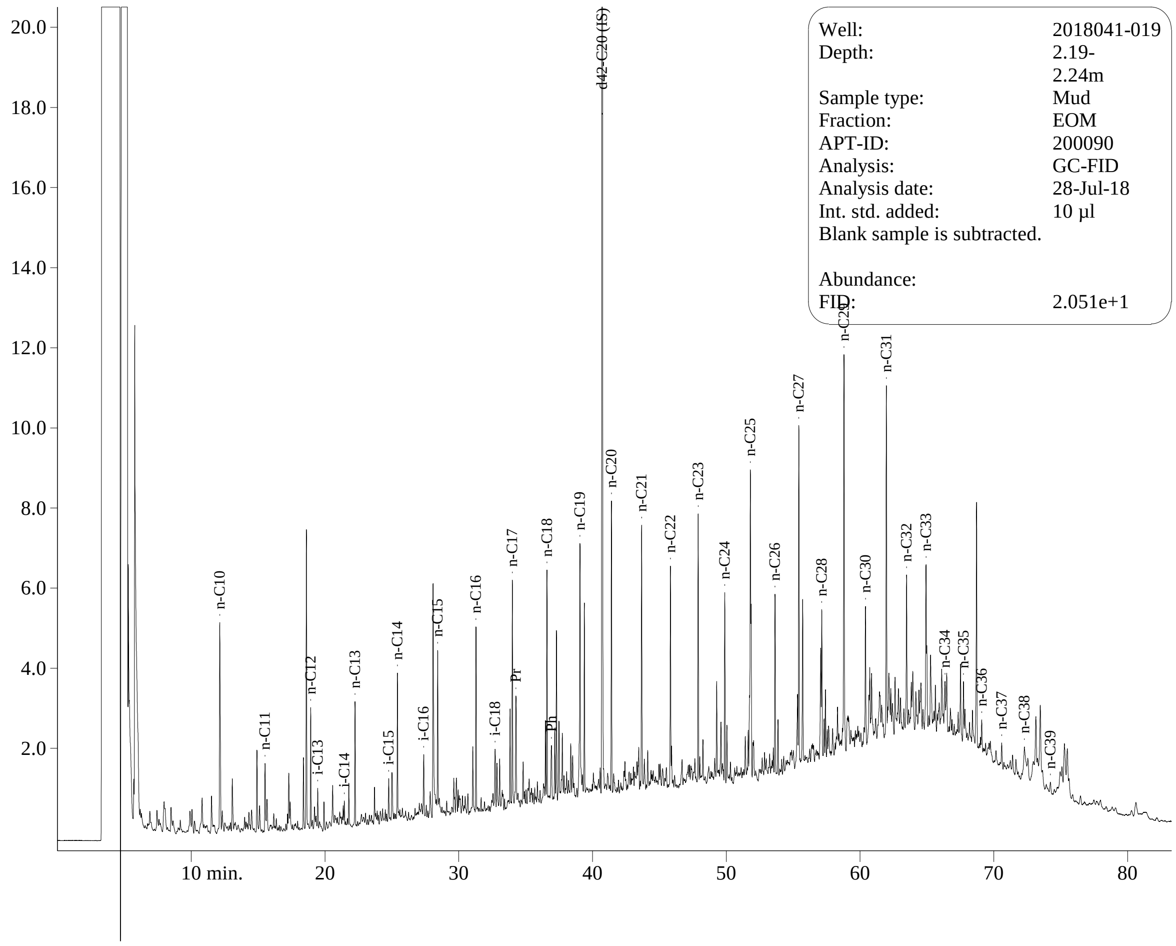

Well: 2018041-015
Depth: 4.66-4.71m
Sample type: Mud
Fraction: EOM
APT-ID: 200083
Analysis: GC-FID
Analysis date: 28-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 3.400e+1
10 min.
d42-C20 (IS)
Pr
Ph
n-C10
n-C11
n-C12
i-C13
n-C13
i-C14
n-C14
i-C15
n-C15
i-C16
n-C16
n-C17
i-C18
n-C18
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
n-C40
n-C41
n-C42

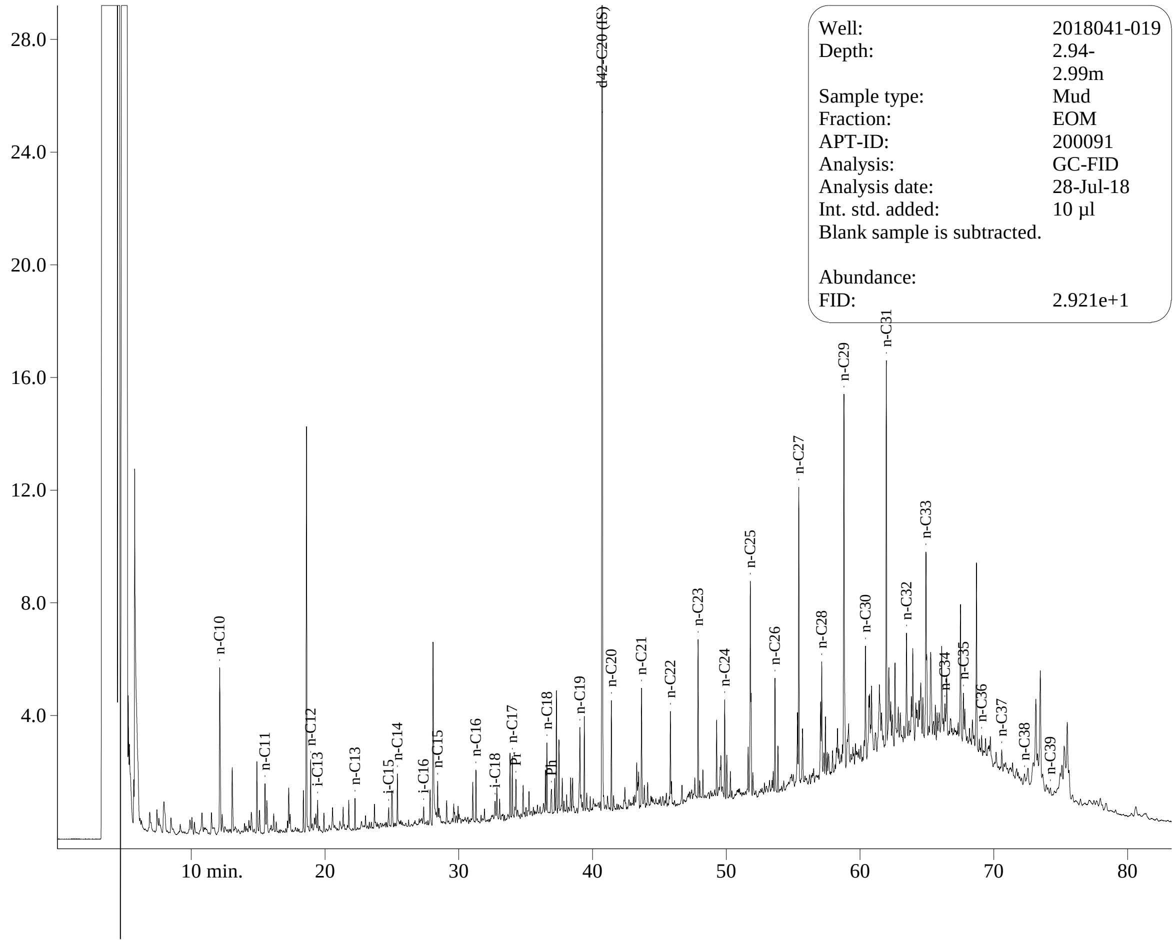

Well: 2018041-017
Depth: 1.26-1.31m
Sample type: Mud
Fraction: EOM
APT-ID: 200085
Analysis: GC-FID
Analysis date: 28-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 1.400e+1
d42-C20 (IS)
min.

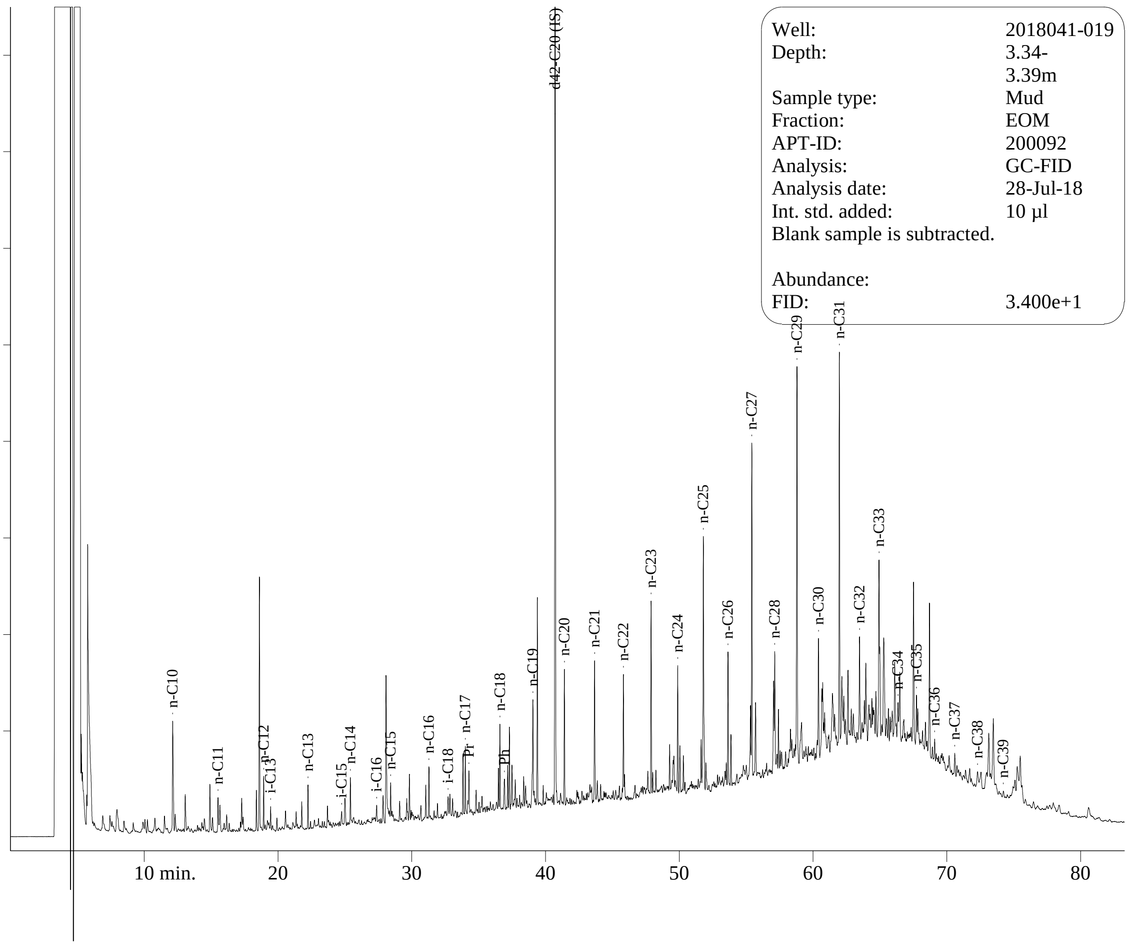

Well: 2018041-017
Depth: 3.32-3.37m
Sample type: Mud
Fraction: EOM
APT-ID: 200086
Analysis: GC-FID
Analysis date: 28-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 3.200e+1
d42-C20 (IS)
min.

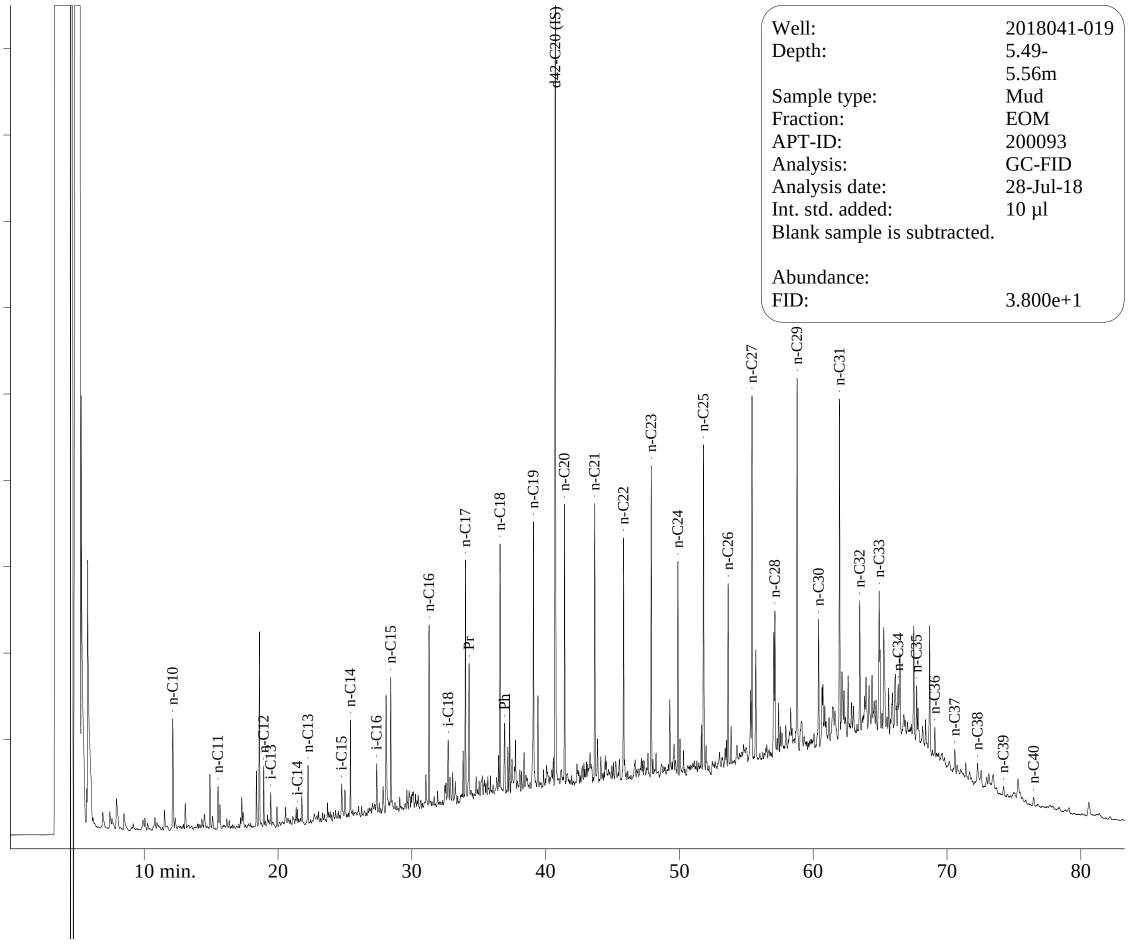

Well: 2018041-017
Depth: 4.01-4.06m
Sample type: Mud
Fraction: EOM
APT-ID: 200087
Analysis: GC-FID
Analysis date: 28-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 2.423e+1
d42-C20 (IS)
10 min.

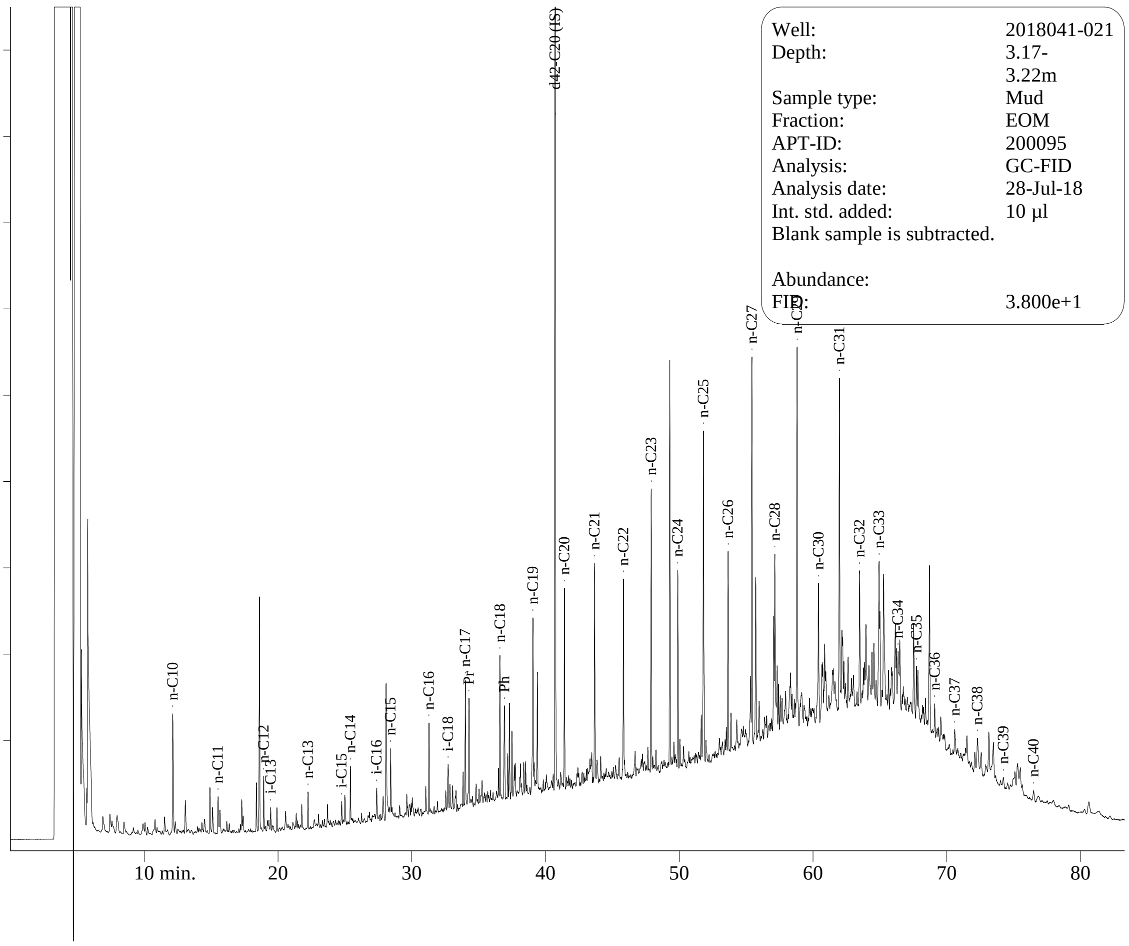

Well: 2018041-017
Depth: 5.49-5.54m
Sample type: Mud
Fraction: EOM
APT-ID: 200088
Analysis: GC-FID
Analysis date: 28-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 3.337e+1
d42-C20 (IS)
10 min.

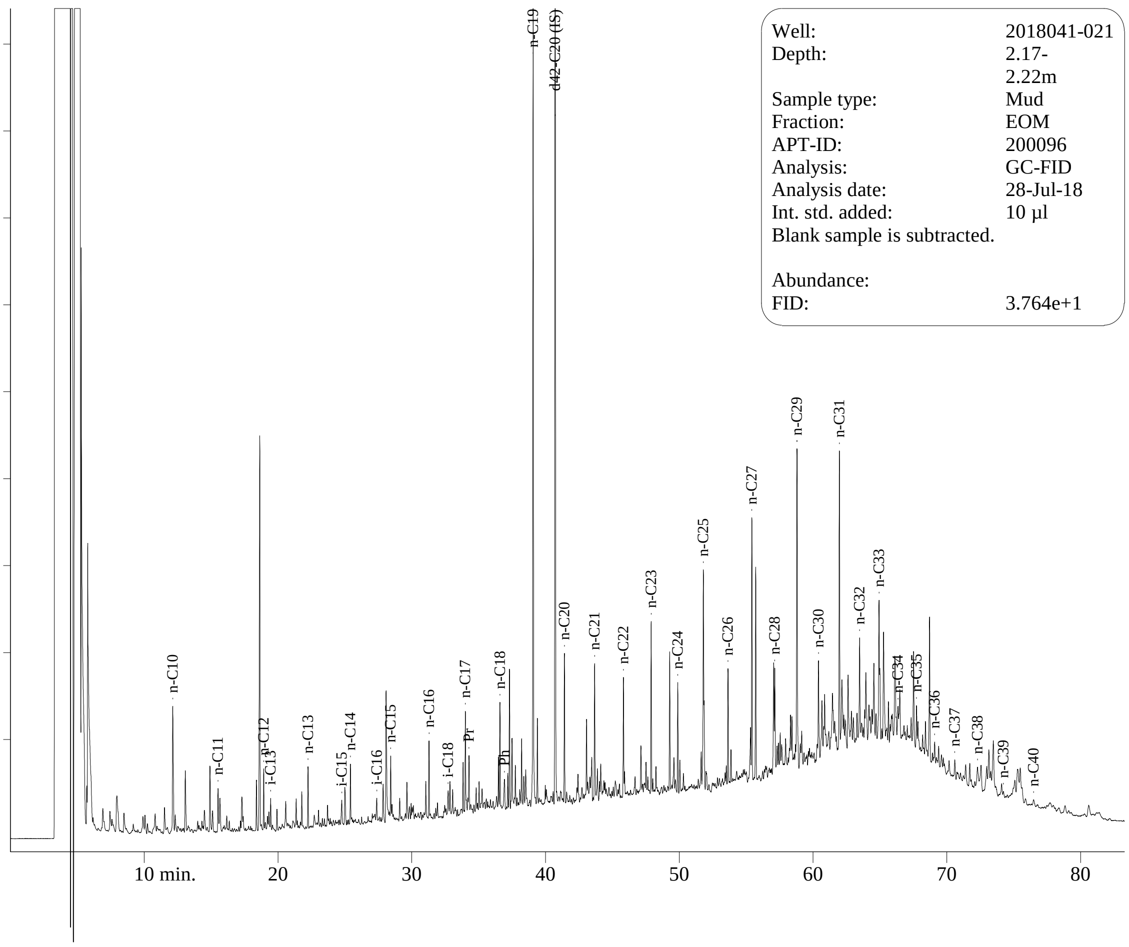

Well: 2018041-019
Depth: 2.19-2.24m
Sample type: Mud
Fraction: EOM
APT-ID: 200090
Analysis: GC-FID
Analysis date: 28-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 2.051e+1
d42-C20 (IS)
n-C10
n-C11
n-C12
i-C13
n-C13
i-C14
n-C14
i-C15
n-C15
i-C16
n-C16
i-C18
n-C17
Pr
n-C18
Ph
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
10 min.
20
30
40
50
60
70
80
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0

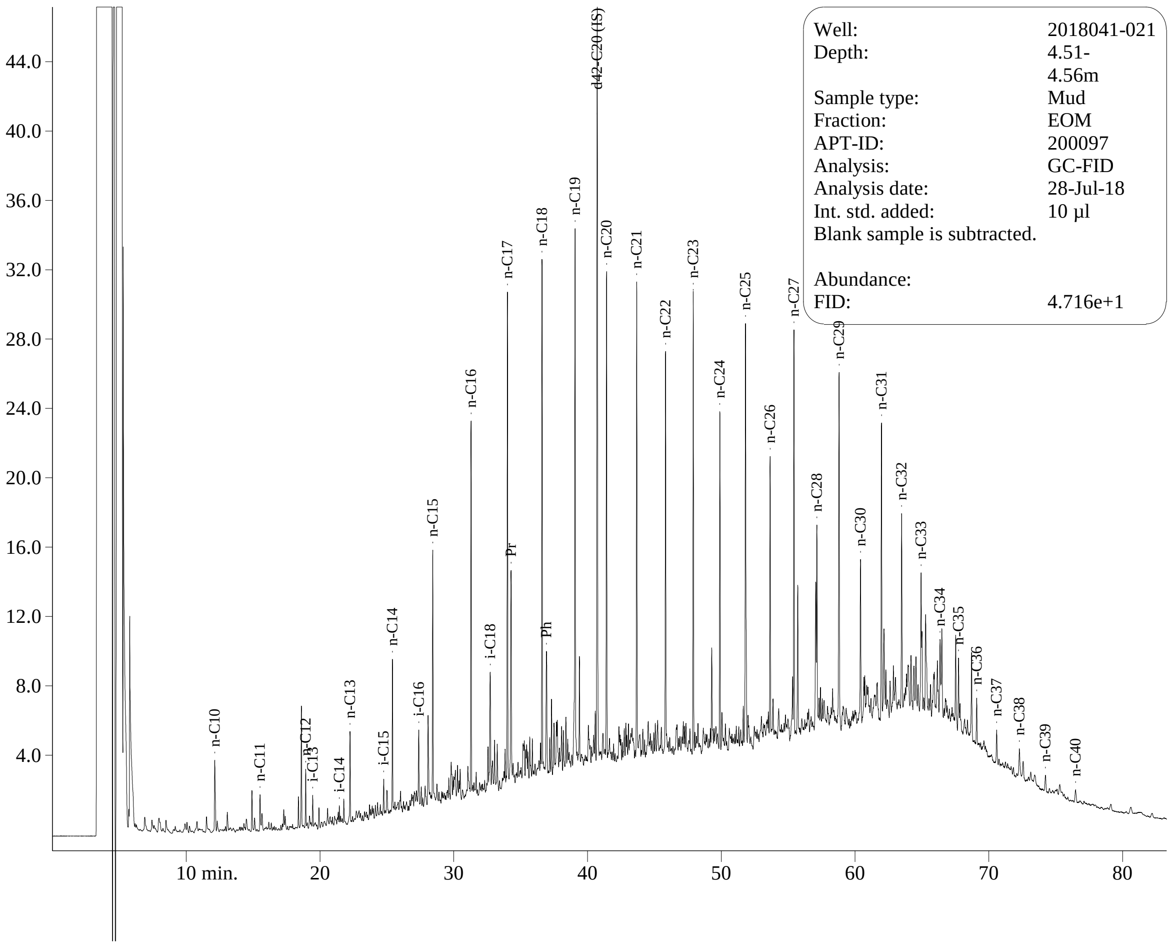

Well: 2018041-019
Depth: 2.94-2.99m
Sample type: Mud
Fraction: EOM
APT-ID: 200091
Analysis: GC-FID
Analysis date: 28-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 2.921e+1
d42-C20 (IS)
n-C10
n-C11
n-C12
i-C13
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
i-C18
Pr
n-C17
n-C18
Ph
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
10 min.
20
30
40
50
60
70
80
28.0
24.0
20.0
16.0
12.0
8.0
4.0

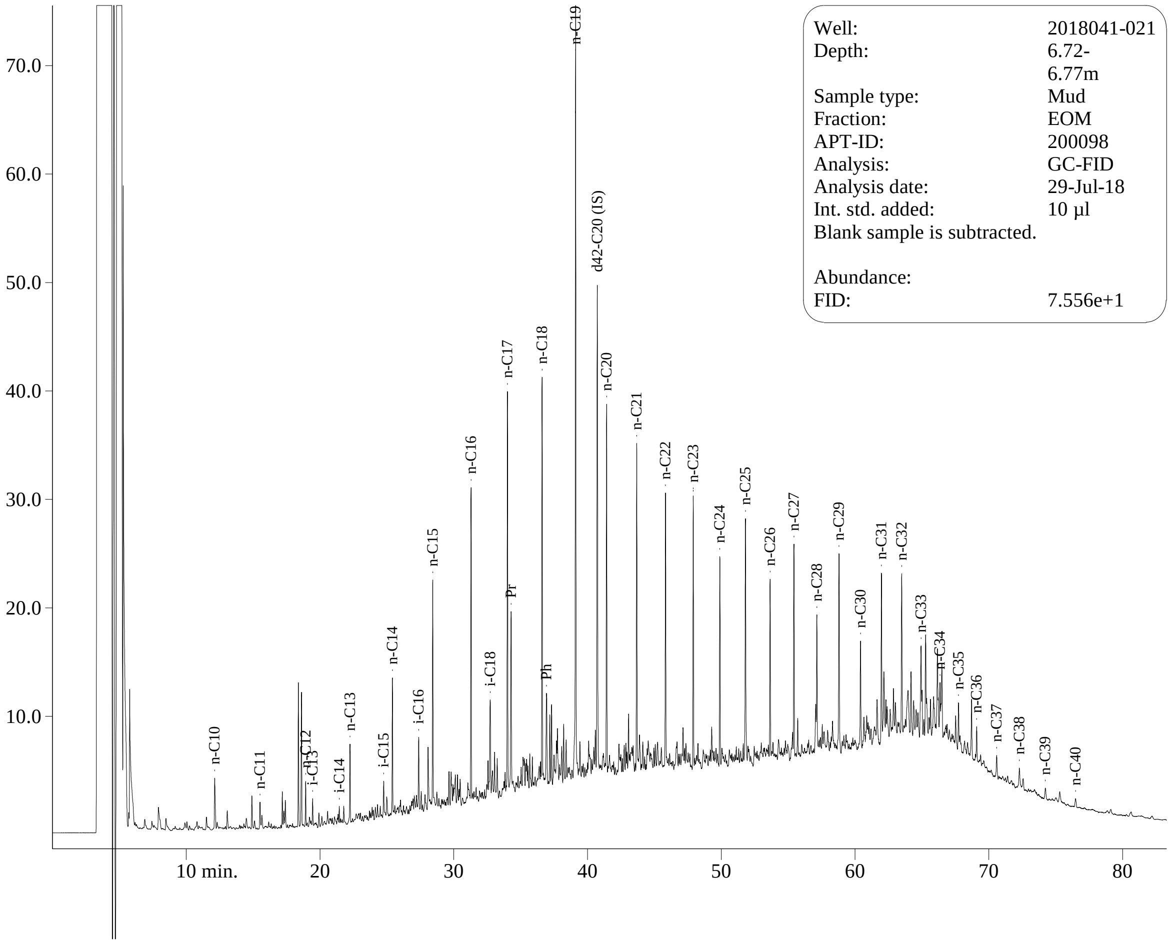

Well: 2018041-019
Depth: 3.34-3.39m
Sample type: Mud
Fraction: EOM
APT-ID: 200092
Analysis: GC-FID
Analysis date: 28-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 3.400e+1
d42-C20 (IS)
n-C10
n-C11
n-C12
i-C13
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
i-C18
n-C17
Pr
n-C18
Ph
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
32.0
28.0
24.0
20.0
16.0
12.0
8.0
4.0
10 min.
20
30
40
50
60
70
80

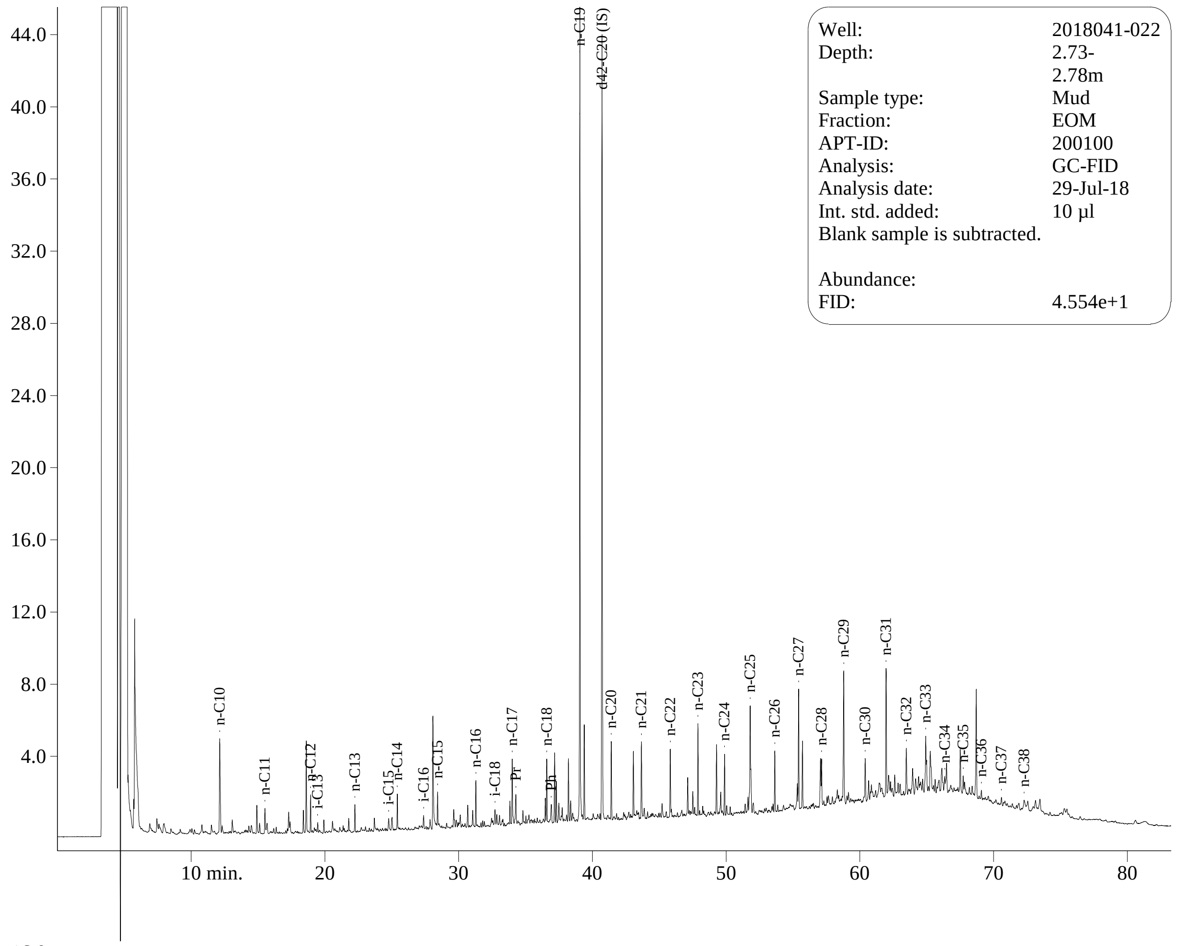

Well: 2018041-019
Depth: 5.49-5.56m
Sample type: Mud
Fraction: EOM
APT-ID: 200093
Analysis: GC-FID
Analysis date: 28-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 3.800e+1
d42-C20 (IS)
n-C10
n-C11
n-C12
i-C13
i-C14
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
i-C18
n-C17
Pr
n-C18
Ph
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
n-C40
36.0
32.0
28.0
24.0
20.0
16.0
12.0
8.0
4.0
10 min.
20
30
40
50
60
70
80


Well: 2018041-021
Depth: 3.17-3.22m
Sample type: Mud
Fraction: EOM
APT-ID: 200095
Analysis: GC-FID
Analysis date: 28-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 3.800e+1
d42-C20 (IS)
n-C10
n-C11
n-C12
i-C13
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
i-C18
Pr
n-C17
Ph
n-C18
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
n-C40
36.0
32.0
28.0
24.0
20.0
16.0
12.0
8.0
4.0
10 min.
20
30
40
50
60
70
80

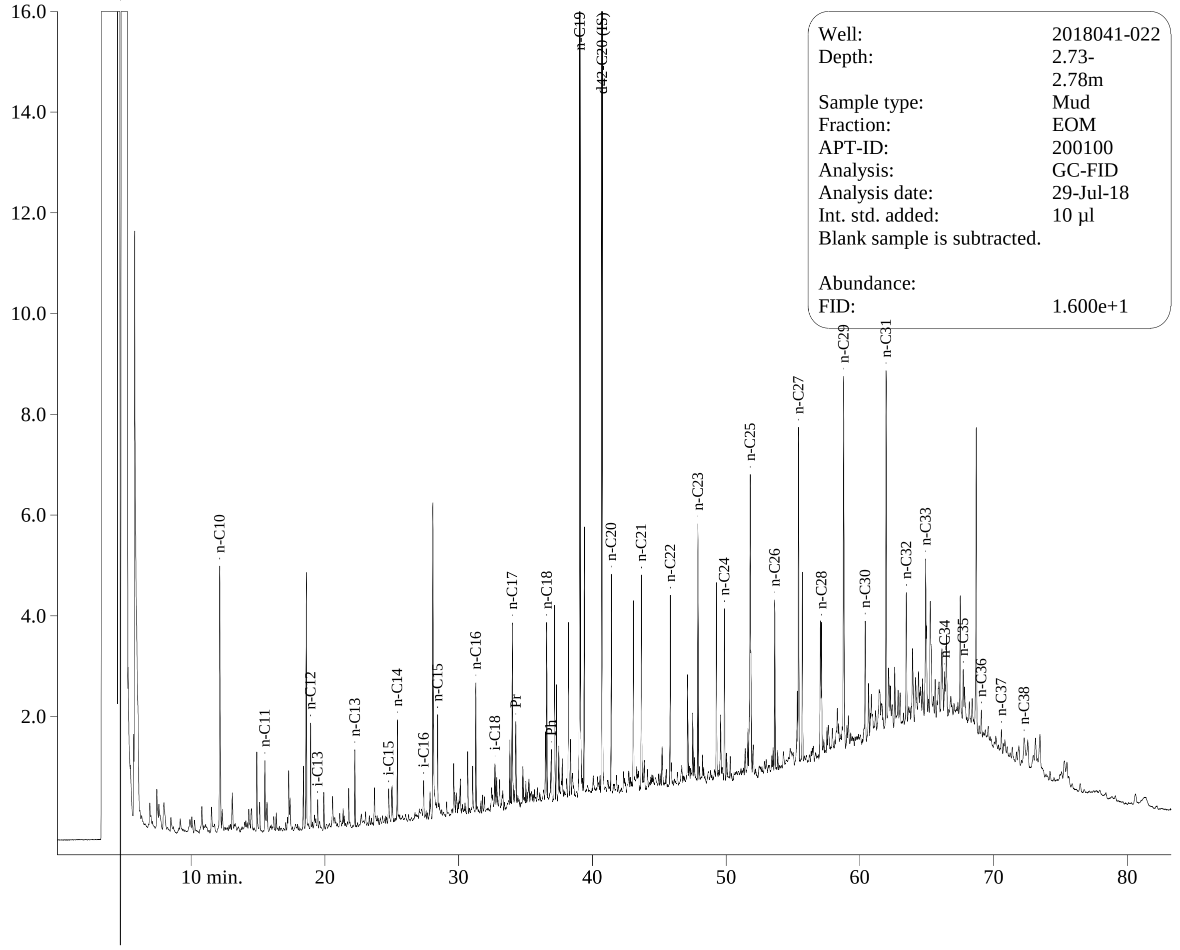

Well: 2018041-021
Depth: 2.17-2.22m
Sample type: Mud
Fraction: EOM
APT-ID: 200096
Analysis: GC-FID
Analysis date: 28-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 3.764e+1
n-C19
d42-C20 (IS)
n-C10
n-C11
n-C12
i-C13
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
i-C18
Pr
n-C17
Ph
n-C18
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
n-C40
36.0
32.0
28.0
24.0
20.0
16.0
12.0
8.0
4.0
10 min.
20
30
40
50
60
70
80


Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: EOM
APT-ID: 200097
Analysis: GC-FID
Analysis date: 28-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 4.716e+1
44.0
40.0
36.0
32.0
28.0
24.0
20.0
16.0
12.0
8.0
4.0
10 min.
20
30
40
50
60
70
80
n-C10
n-C11
n-C12
i-C13
n-C13
i-C14
n-C14
i-C15
n-C15
i-C16
n-C16
n-C17
i-C18
Pr
n-C18
Ph
n-C19
d42-C20 (IS)
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
n-C40

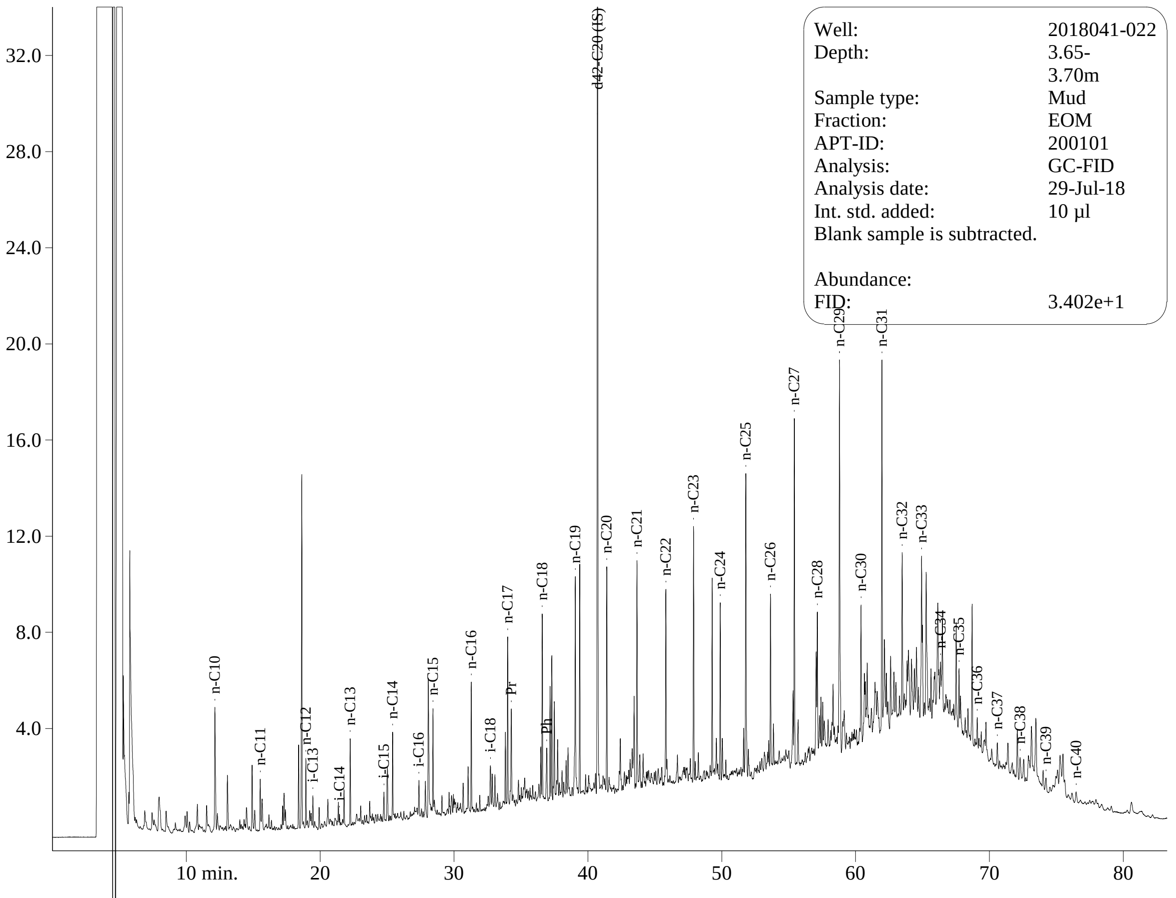

Well: 2018041-021
Depth: 6.72-6.77m
Sample type: Mud
Fraction: EOM
APT-ID: 200098
Analysis: GC-FID
Analysis date: 29-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 7.556e+1
70.0
60.0
50.0
40.0
30.0
20.0
10.0
10 min.
20
30
40
50
60
70
80
n-C10
n-C11
n-C12
i-C13
n-C13
i-C14
n-C14
i-C15
n-C15
i-C16
n-C16
n-C17
i-C18
Pr
n-C18
Ph
n-C19
d42-C20 (IS)
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
n-C40

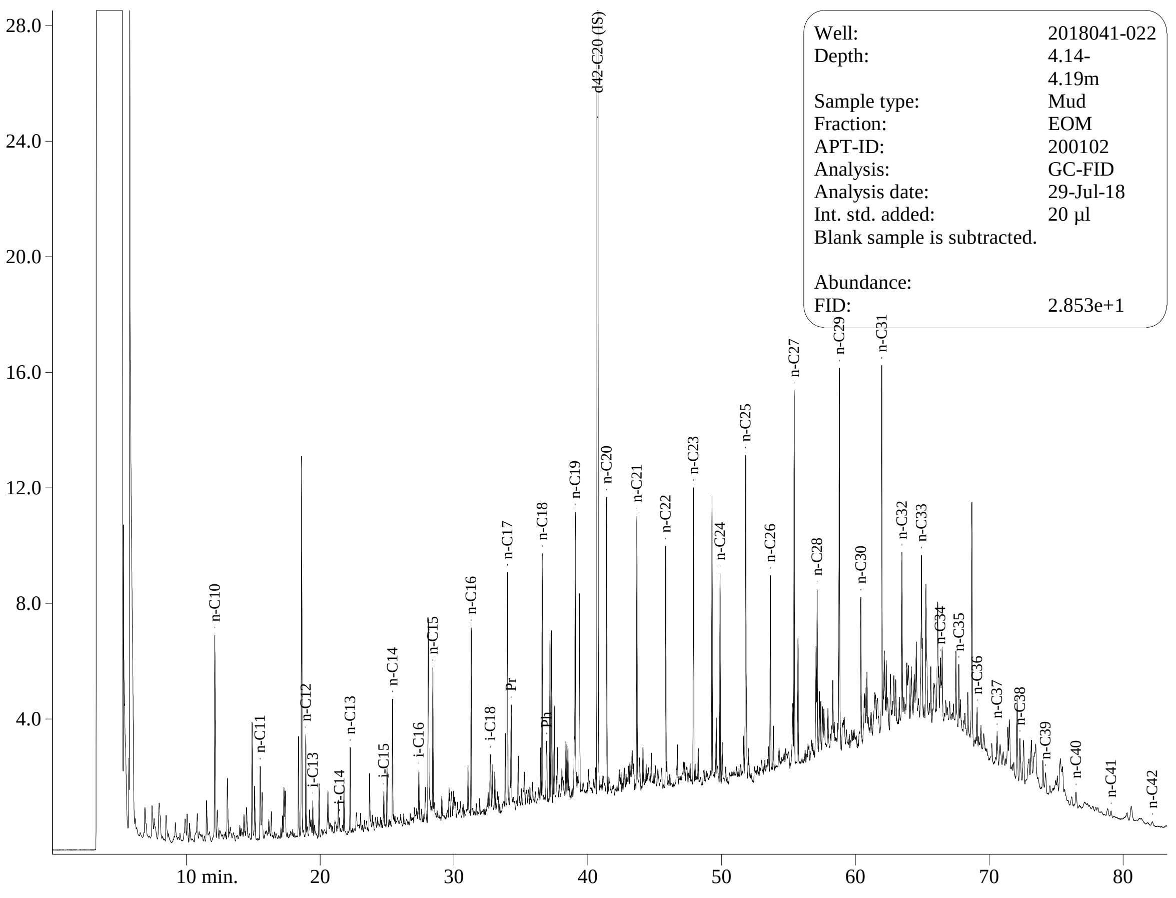


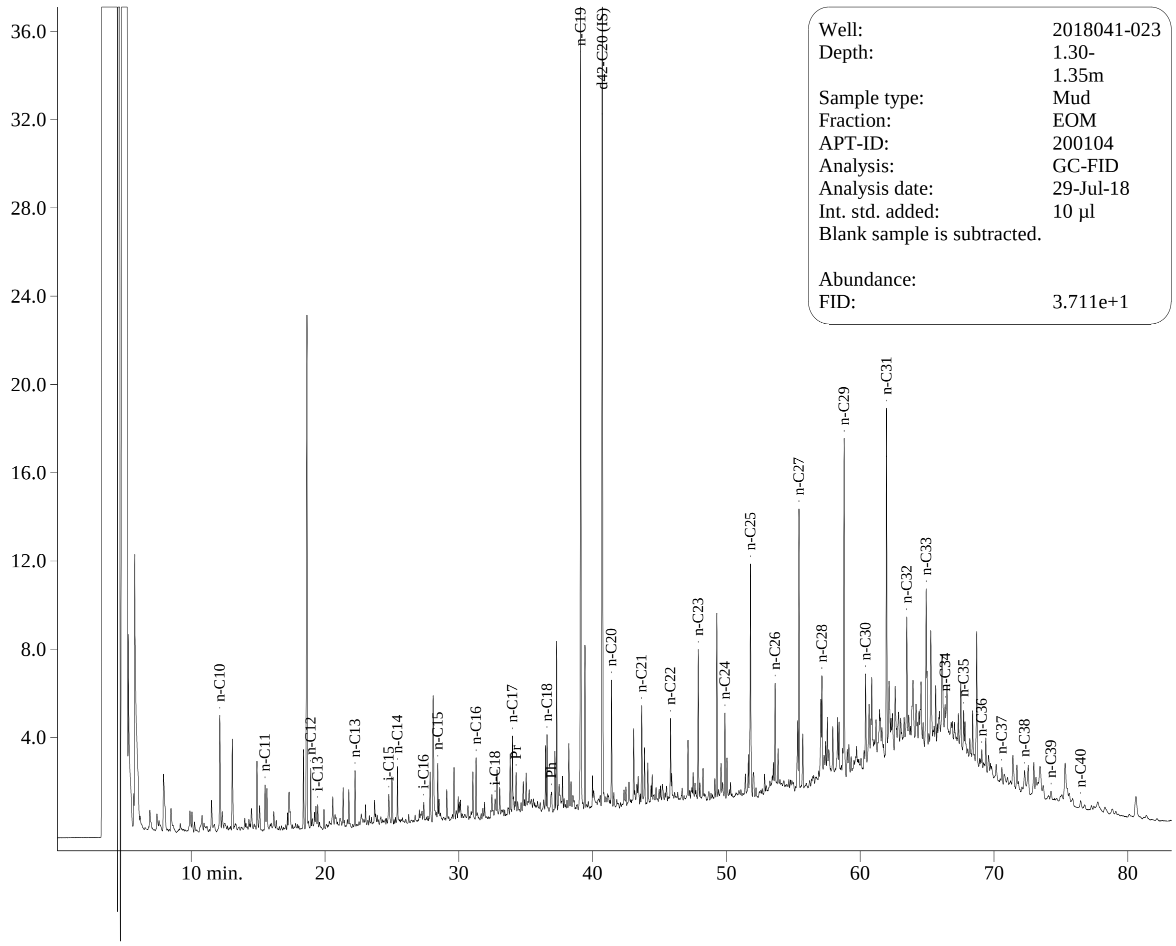
Well: 2018041-022
Depth: 2.73-2.78m
Sample type: Mud
Fraction: EOM
APT-ID: 200100
Analysis: GC-FID
Analysis date: 29-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 4.554e+1
n-C10
n-C11
n-C12
i-C13
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
i-C18
Pr
n-C17
n-C18
Ph
n-C19
d42-C20 (IS)
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
10 min.

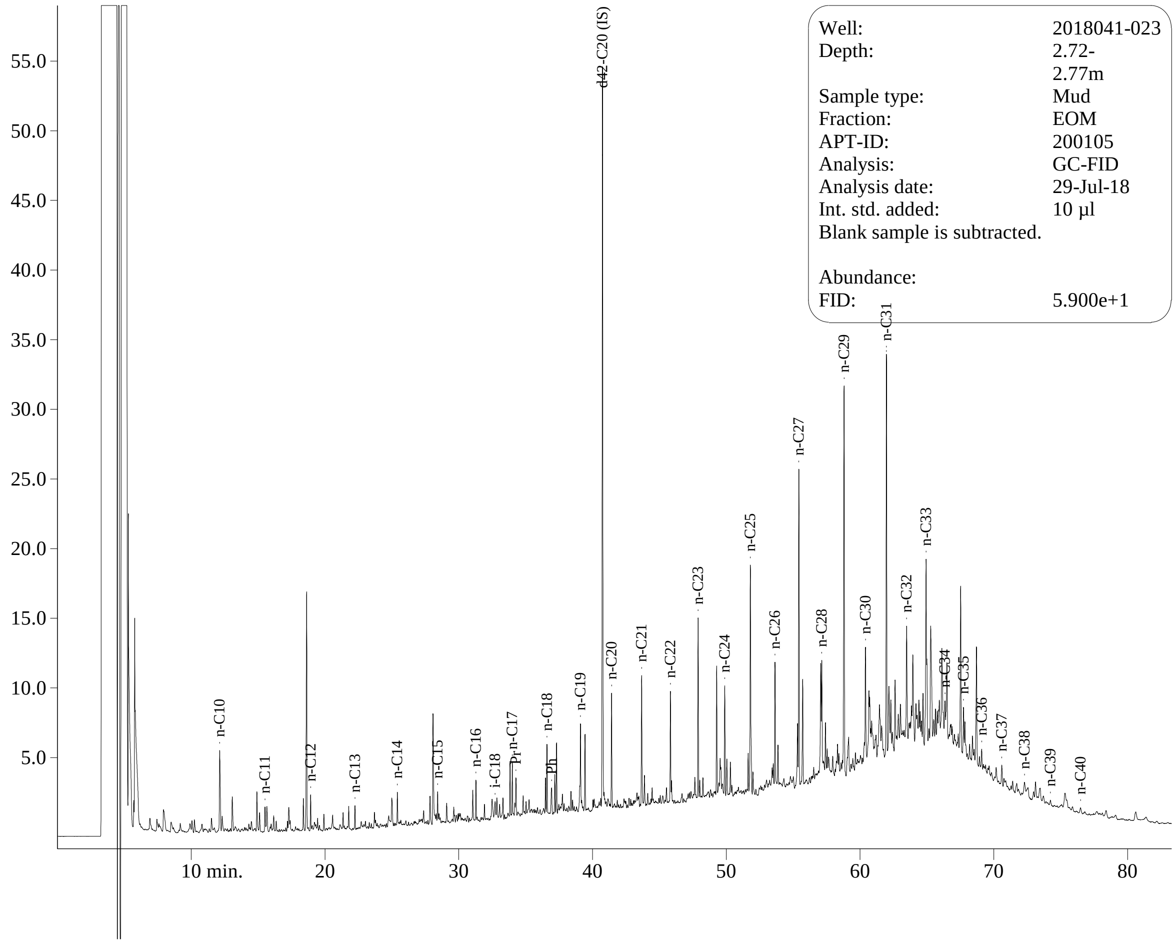


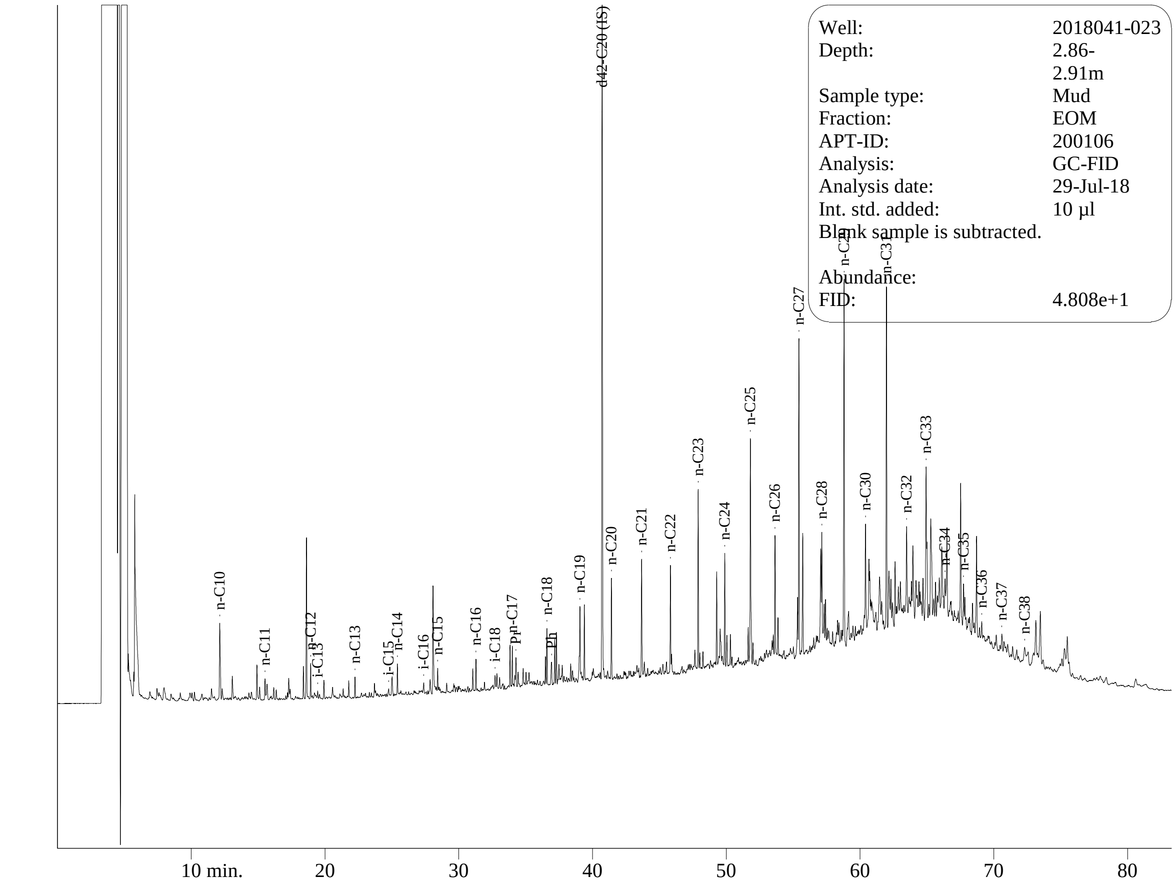
Well: 2018041-022
Depth: 2.73-2.78m
Sample type: Mud
Fraction: EOM
APT-ID: 200100
Analysis: GC-FID
Analysis date: 29-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 1.600e+1
n-C10
n-C11
n-C12
i-C13
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
i-C18
Pr
n-C17
n-C18
Ph
n-C19
d42-C20 (IS)
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
10 min.


Well: 2018041-022
Depth: 3.65-3.70m
Sample type: Mud
Fraction: EOM
APT-ID: 200101
Analysis: GC-FID
Analysis date: 29-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 3.402e+1
d42-C20 (IS)
n-C10
n-C11
n-C12
i-C13
n-C13
i-C14
n-C14
i-C15
n-C15
i-C16
n-C16
i-C18
n-C17
Pr
n-C18
Ph
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
n-C40
10 min.
20
30
40
50
60
70
80
32.0
28.0
24.0
20.0
16.0
12.0
8.0
4.0

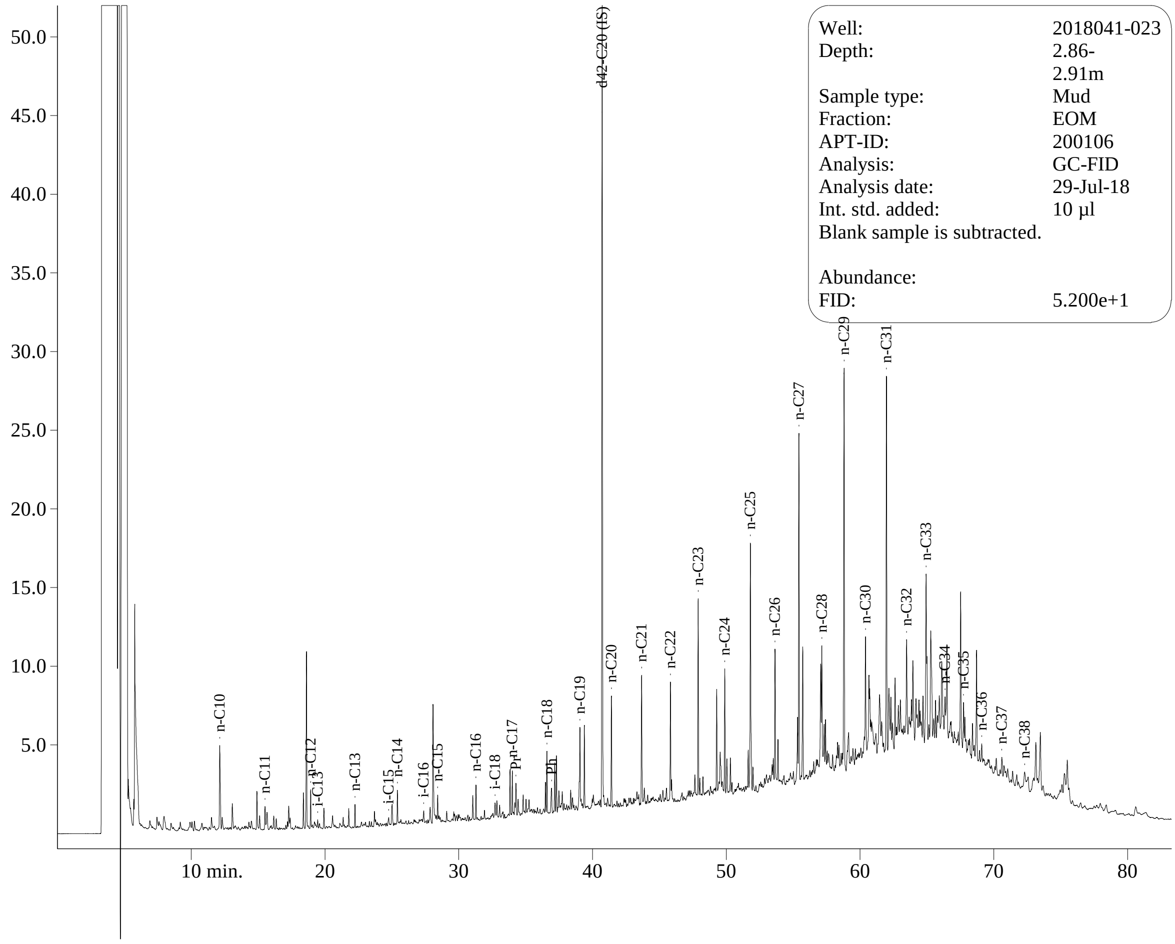

Well: 2018041-022
Depth: 4.14-4.19m
Sample type: Mud
Fraction: EOM
APT-ID: 200102
Analysis: GC-FID
Analysis date: 29-Jul-18
Int. std. added: 20 µl
Blank sample is subtracted.
Abundance:
FID: 2.853e+1
d42-C20 (IS)
n-C10
n-C11
n-C12
i-C13
n-C13
i-C14
n-C14
i-C15
n-C15
i-C16
n-C16
i-C18
n-C17
Pr
n-C18
Ph
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
n-C40
n-C41
n-C42
10 min.
20
30
40
50
60
70
80
28.0
24.0
20.0
16.0
12.0
8.0
4.0


Well: 2018041-023
Depth: 1.30-1.35m
Sample type: Mud
Fraction: EOM
APT-ID: 200104
Analysis: GC-FID
Analysis date: 29-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 3.711e+1
10 min.
20
30
40
50
60
70
80
n-C10
n-C11
n-C12
i-C13
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
i-C18
n-C17
Pr
n-C18
Ph
n-C19
d42-C20 (IS)
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
n-C40

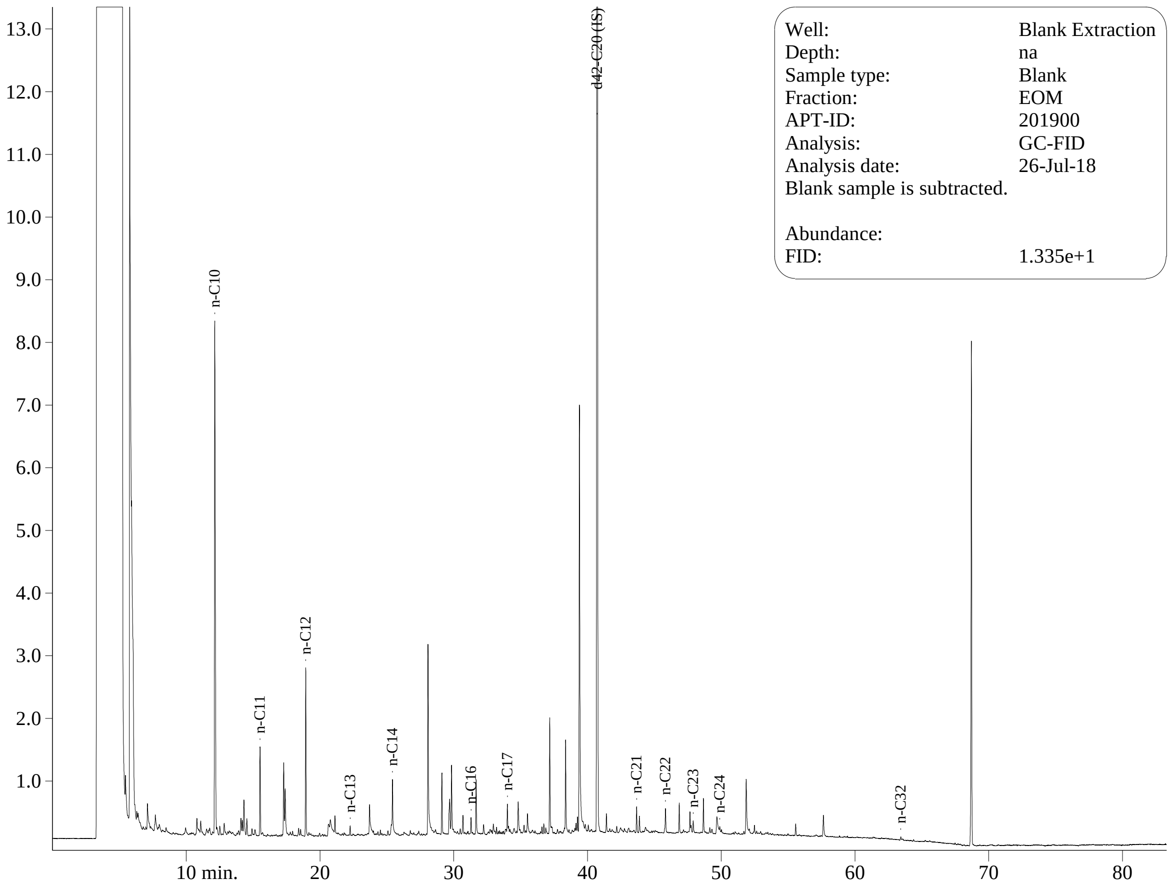

Well: 2018041-023
Depth: 2.72-2.77m
Sample type: Mud
Fraction: EOM
APT-ID: 200105
Analysis: GC-FID
Analysis date: 29-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 5.900e+1
10 min.
20
30
40
50
60
70
80
n-C10
n-C11
n-C12
n-C13
n-C14
n-C15
n-C16
i-C18
Pr
n-C17
n-C18
Ph
n-C19
d42-C20 (IS)
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
n-C40

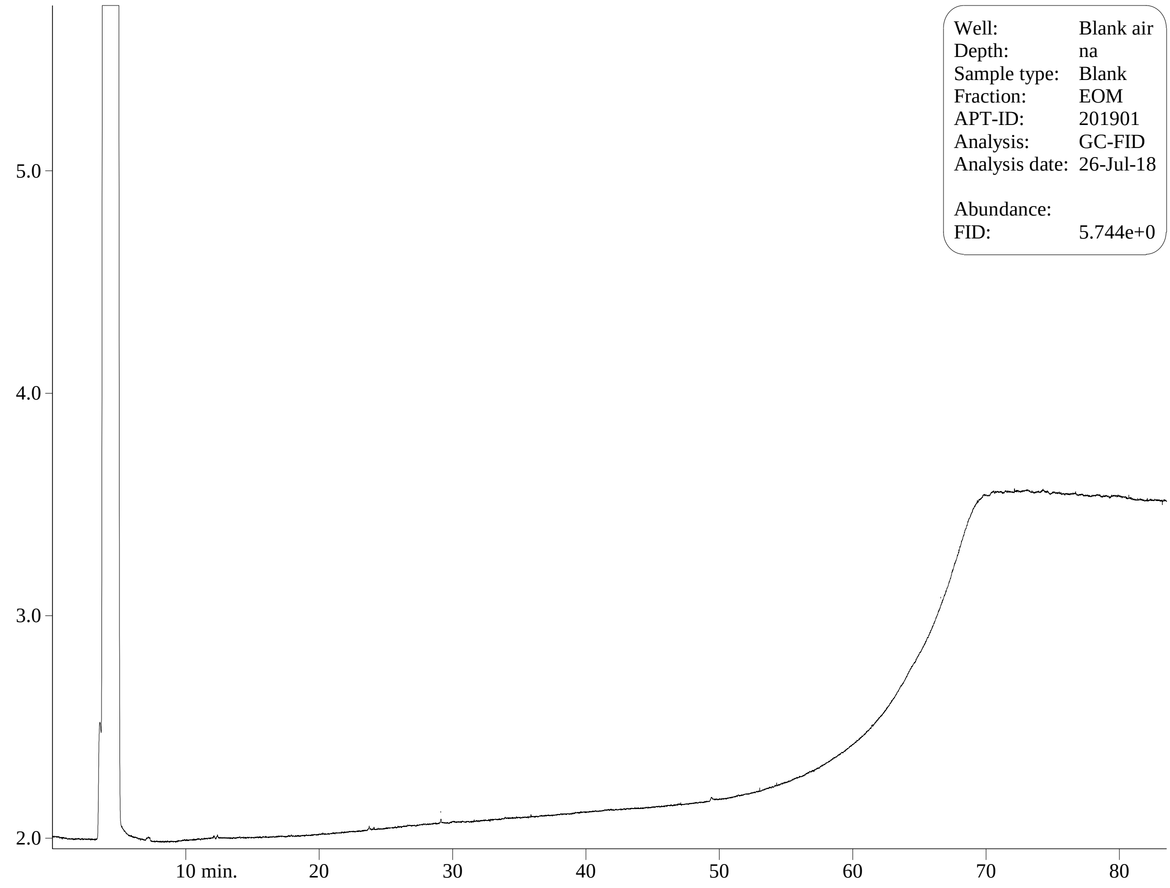


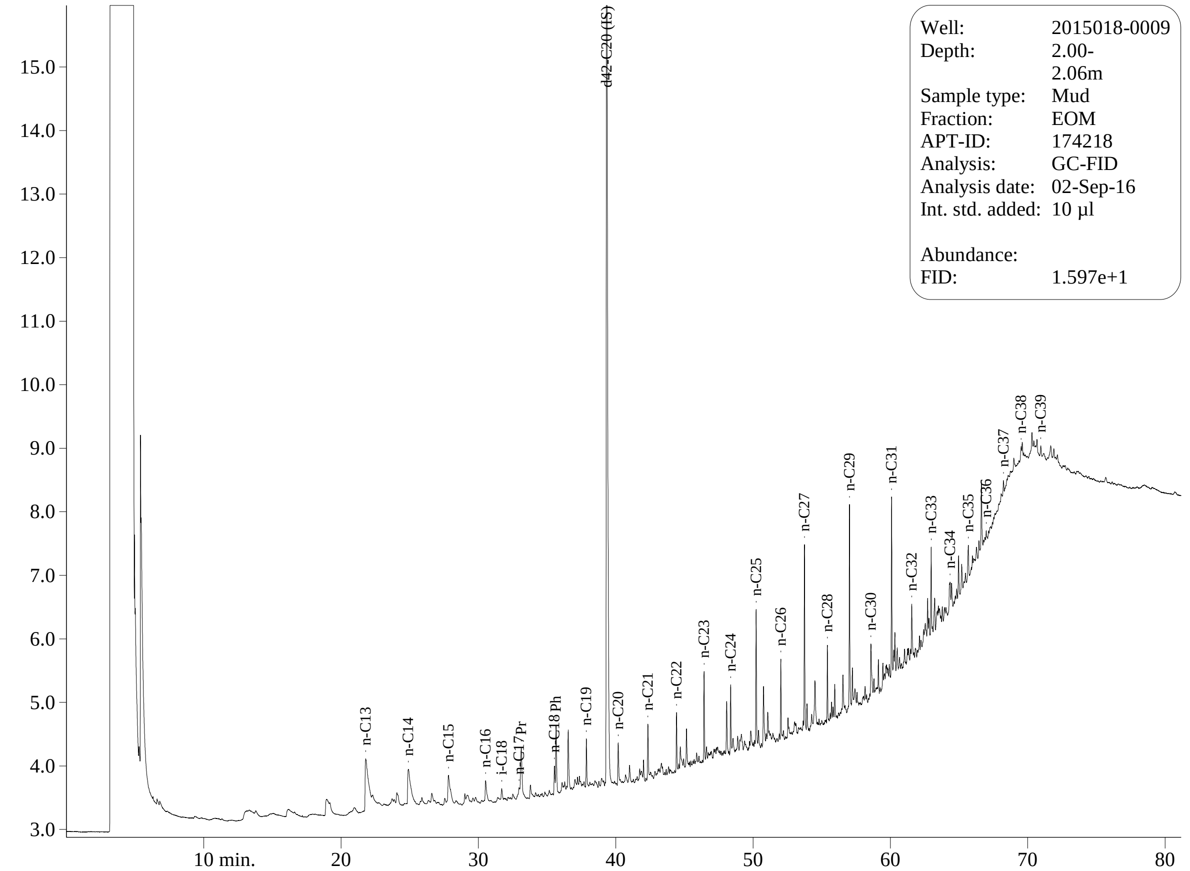
Well: 2018041-023
Depth: 2.86-2.91m
Sample type: Mud
Fraction: EOM
APT-ID: 200106
Analysis: GC-FID
Analysis date: 29-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 4.808e+1
d42-C20 (IS)
n-C10
n-C11
n-C12
i-C13
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
i-C18
Pr
n-C17
n-C18
Ph
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
10 min.
20
30
40
50
60
70
80

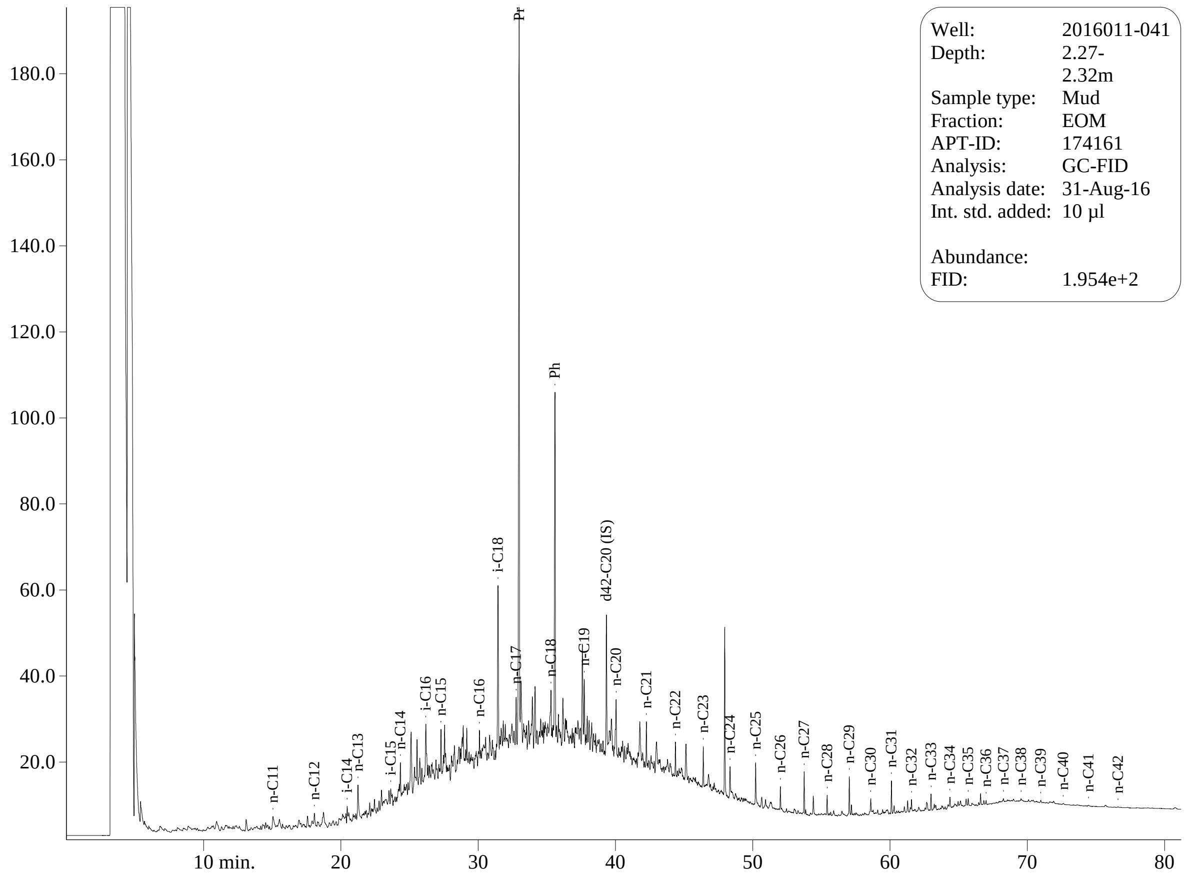


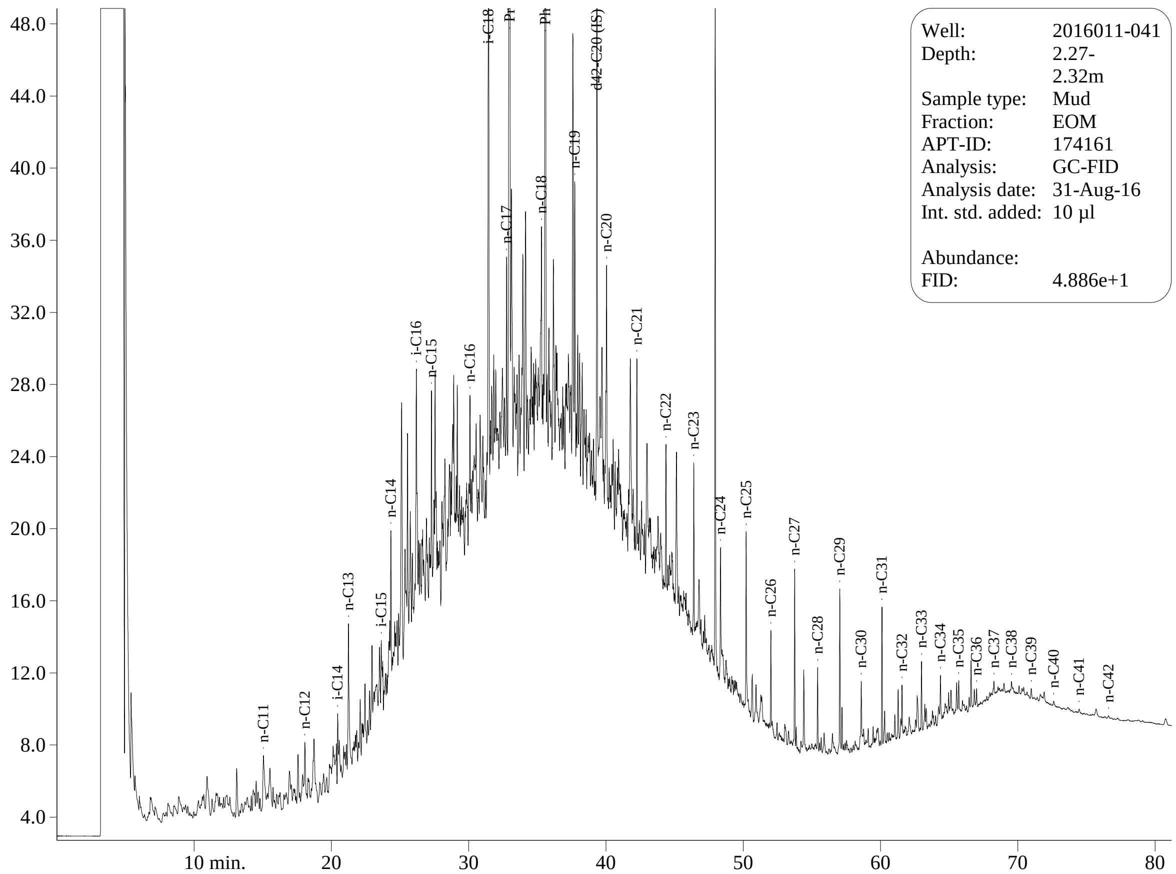
Well: 2018041-023
Depth: 2.86-2.91m
Sample type: Mud
Fraction: EOM
APT-ID: 200106
Analysis: GC-FID
Analysis date: 29-Jul-18
Int. std. added: 10 µl
Blank sample is subtracted.
Abundance:
FID: 5.200e+1
50.0
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
d42-C20 (IS)
n-C10
n-C11
n-C12
i-C13
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
i-C18
Pr
n-C17
n-C18
Ph
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
10 min.
20
30
40
50
60
70
80

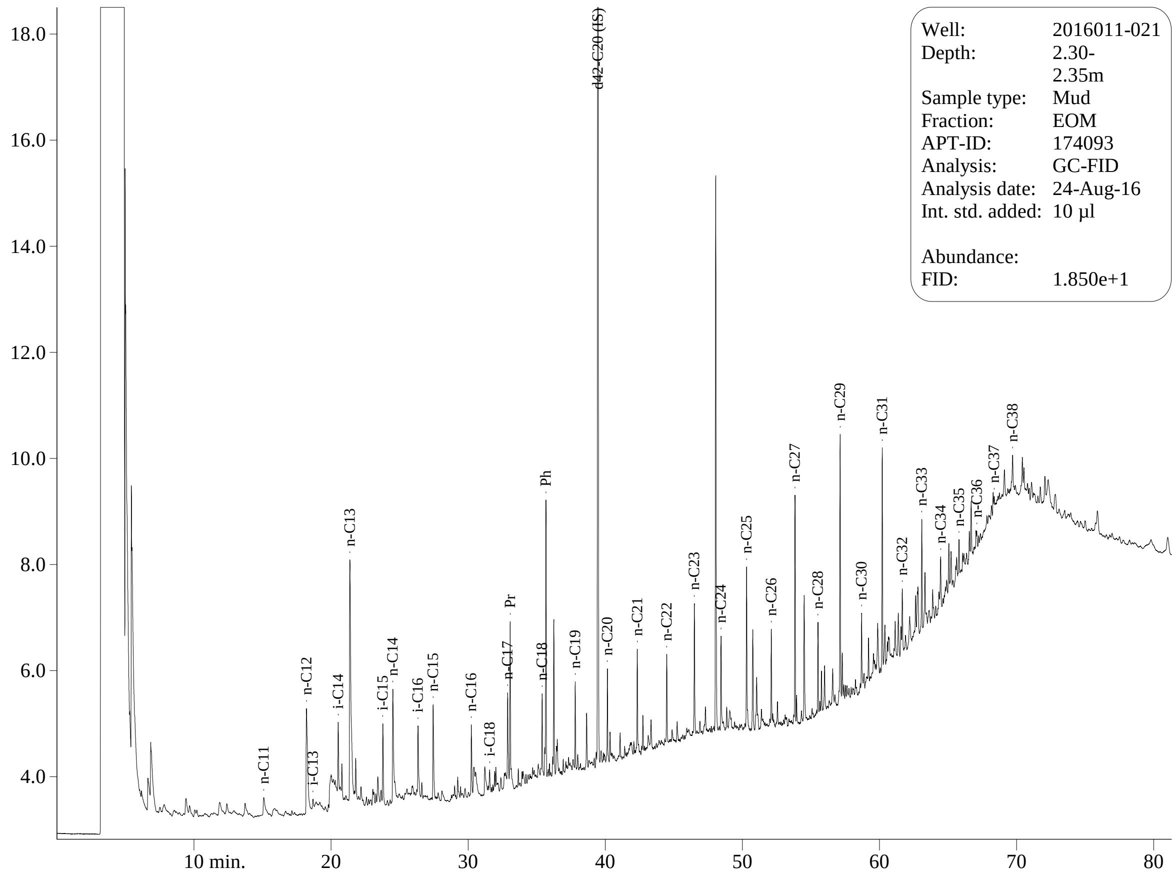

Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: EOM
APT-ID: 201900
Analysis: GC-FID
Analysis date: 26-Jul-18
Blank sample is subtracted.
Abundance:
FID: 1.335e+1
d42-C20 (IS)
n-C10
n-C11
n-C12
n-C13
n-C14
n-C16
n-C17
n-C21
n-C22
n-C23
n-C24
n-C32
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
10 min.
20
30
40
50
60
70
80


Well: Blank air
Depth: na
Sample type: Blank
Fraction: EOM
APT-ID: 201901
Analysis: GC-FID
Analysis date: 26-Jul-18
Abundance:
FID: 5.744e+0
5.0
4.0
3.0
2.0
10 min.
20
30
40
50
60
70
80

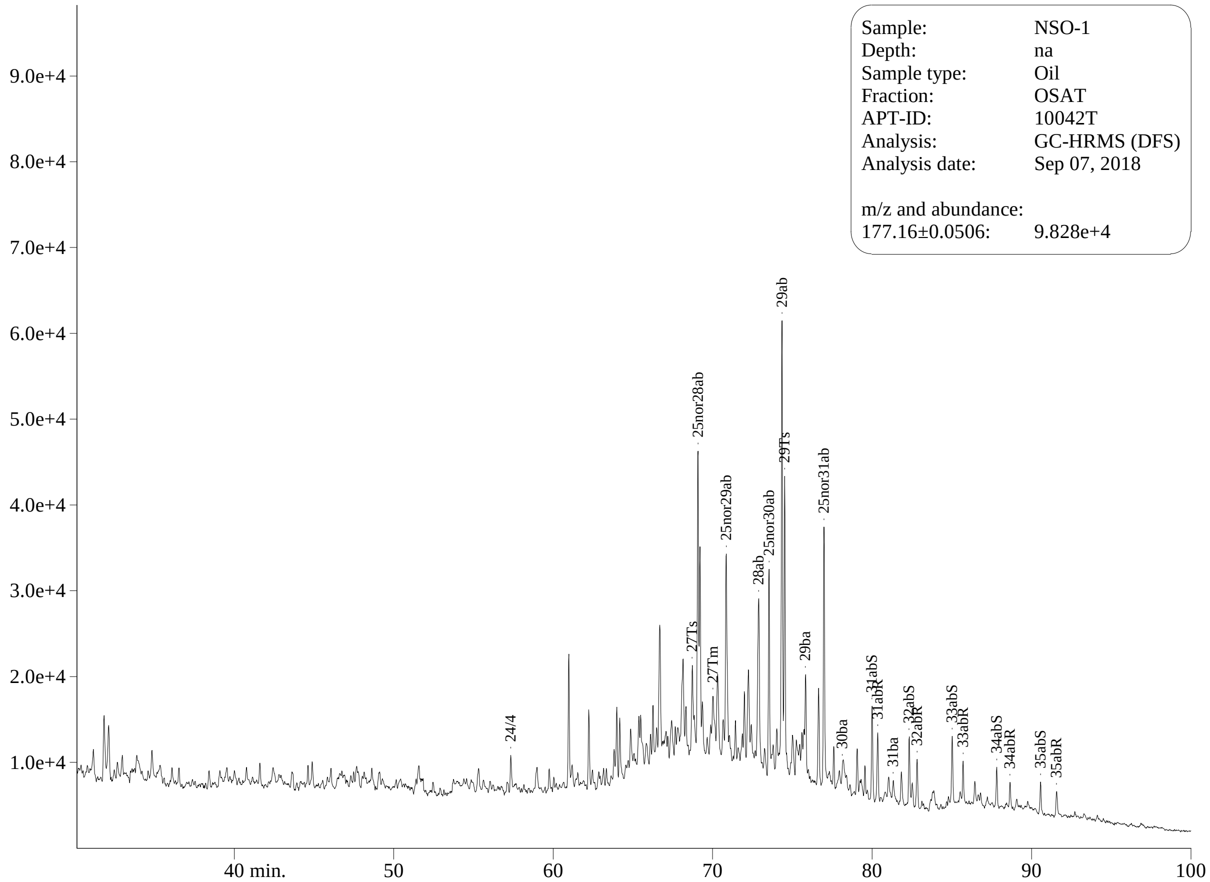

Well: 2015018-0009
Depth: 2.00-2.06m
Sample type: Mud
Fraction: EOM
APT-ID: 174218
Analysis: GC-FID
Analysis date: 02-Sep-16
Int. std. added: 10 µl
Abundance:
FID: 1.597e+1
d42-C20 (IS)
n-C13
n-C14
n-C15
n-C16
i-C18
n-C17 Pr
n-C18 Ph
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
10 min.

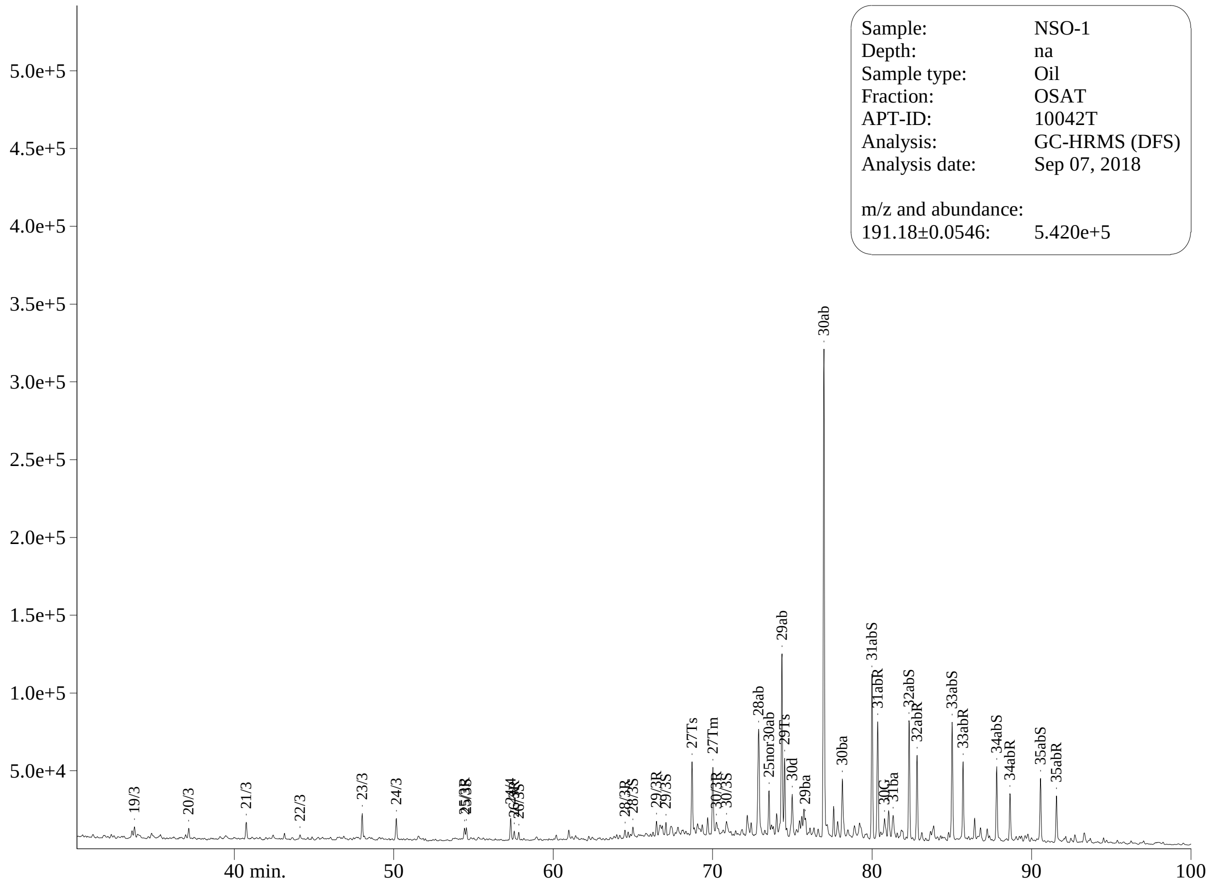

Well: 2016011-041
Depth: 2.27-2.32m
Sample type: Mud
Fraction: EOM
APT-ID: 174161
Analysis: GC-FID
Analysis date: 31-Aug-16
Int. std. added: 10 µl
Abundance:
FID: 1.954e+2
Pr
Ph
i-C18
d42-C20 (IS)
n-C11
n-C12
i-C14
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
n-C17
n-C18
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
n-C40
n-C41
n-C42
10 min.

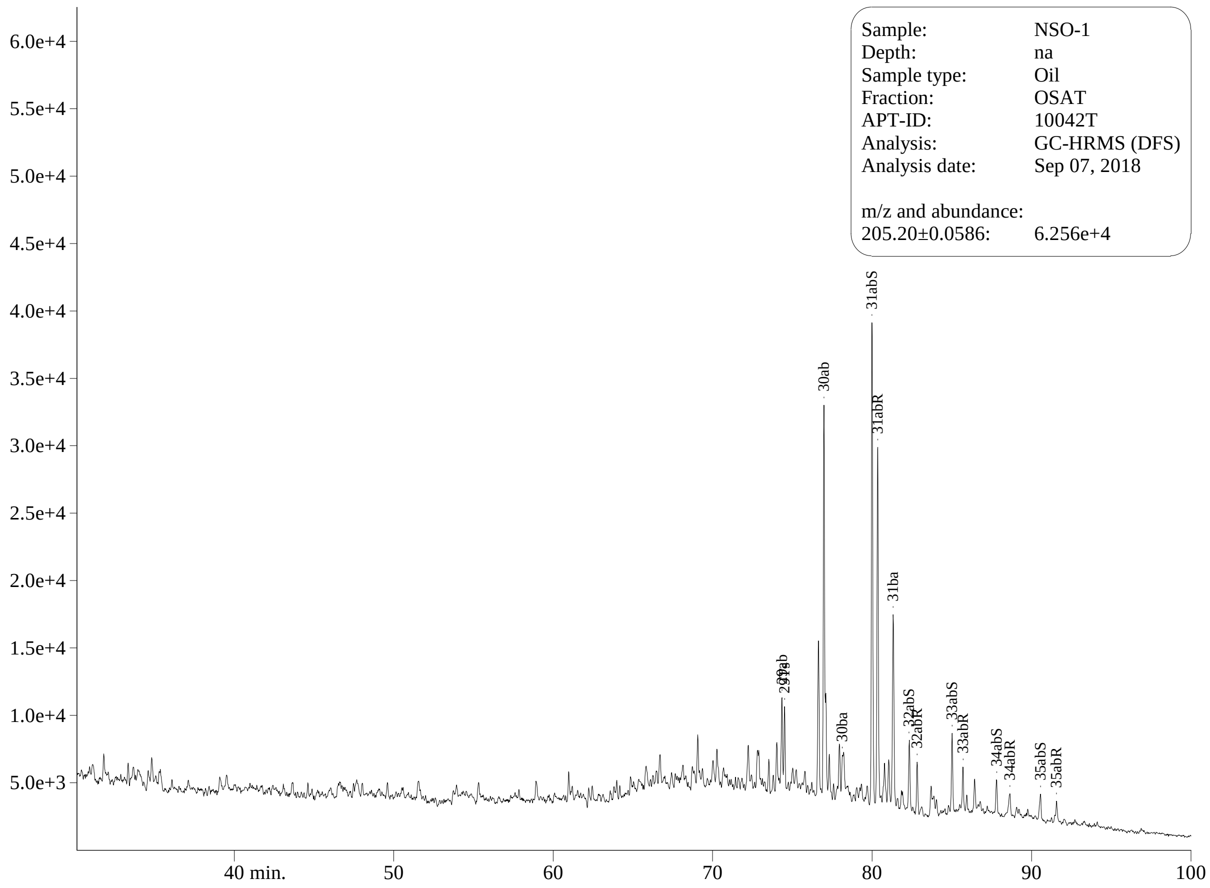

Well: 2016011-041
Depth: 2.27-2.32m
Sample type: Mud
Fraction: EOM
APT-ID: 174161
Analysis: GC-FID
Analysis date: 31-Aug-16
Int. std. added: 10 µl
Abundance:
FID: 4.886e+1
10 min.
20
30
40
50
60
70
80

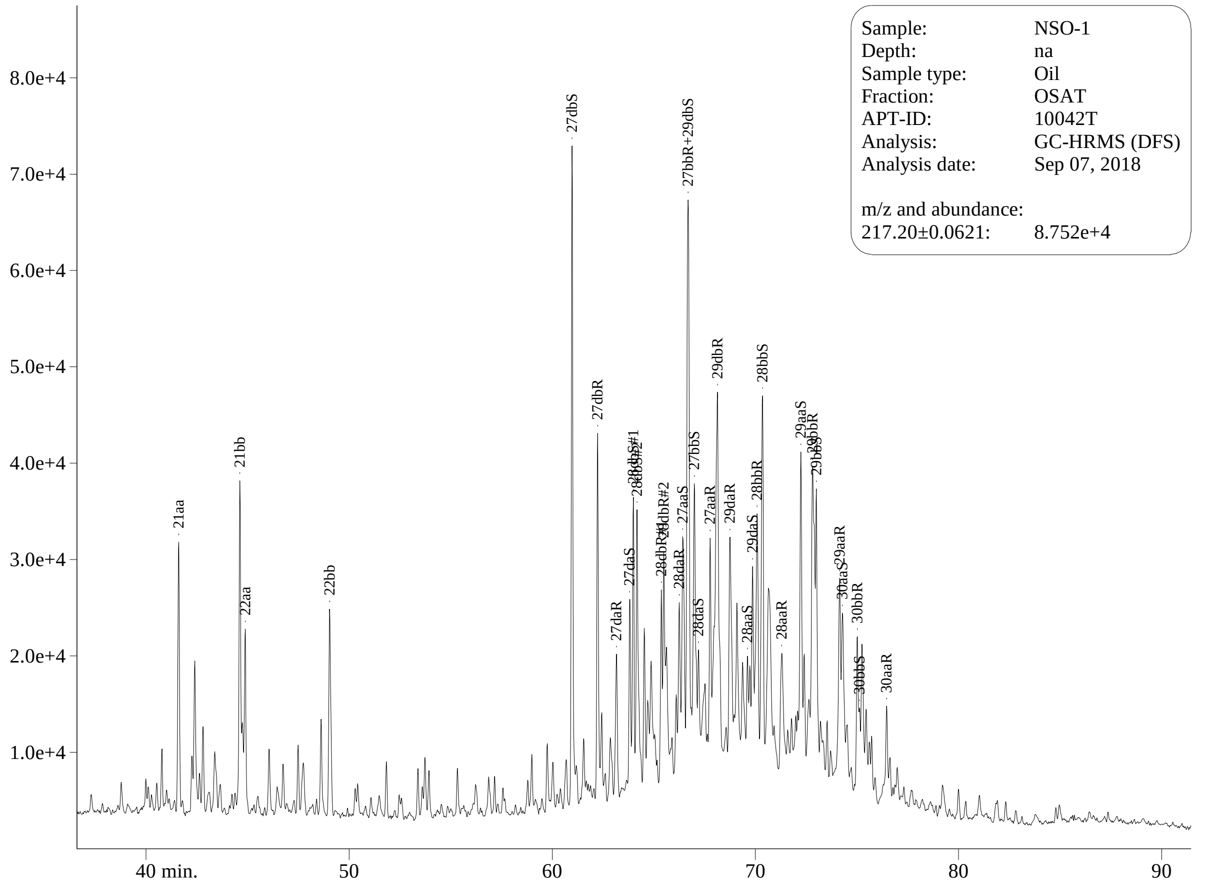

Well: 2016011-021
Depth: 2.30-2.35m
Sample type: Mud
Fraction: EOM
APT-ID: 174093
Analysis: GC-FID
Analysis date: 24-Aug-16
Int. std. added: 10 µl
Abundance:
FID: 1.850e+1
10 min.
20
30
40
50
60
70
80

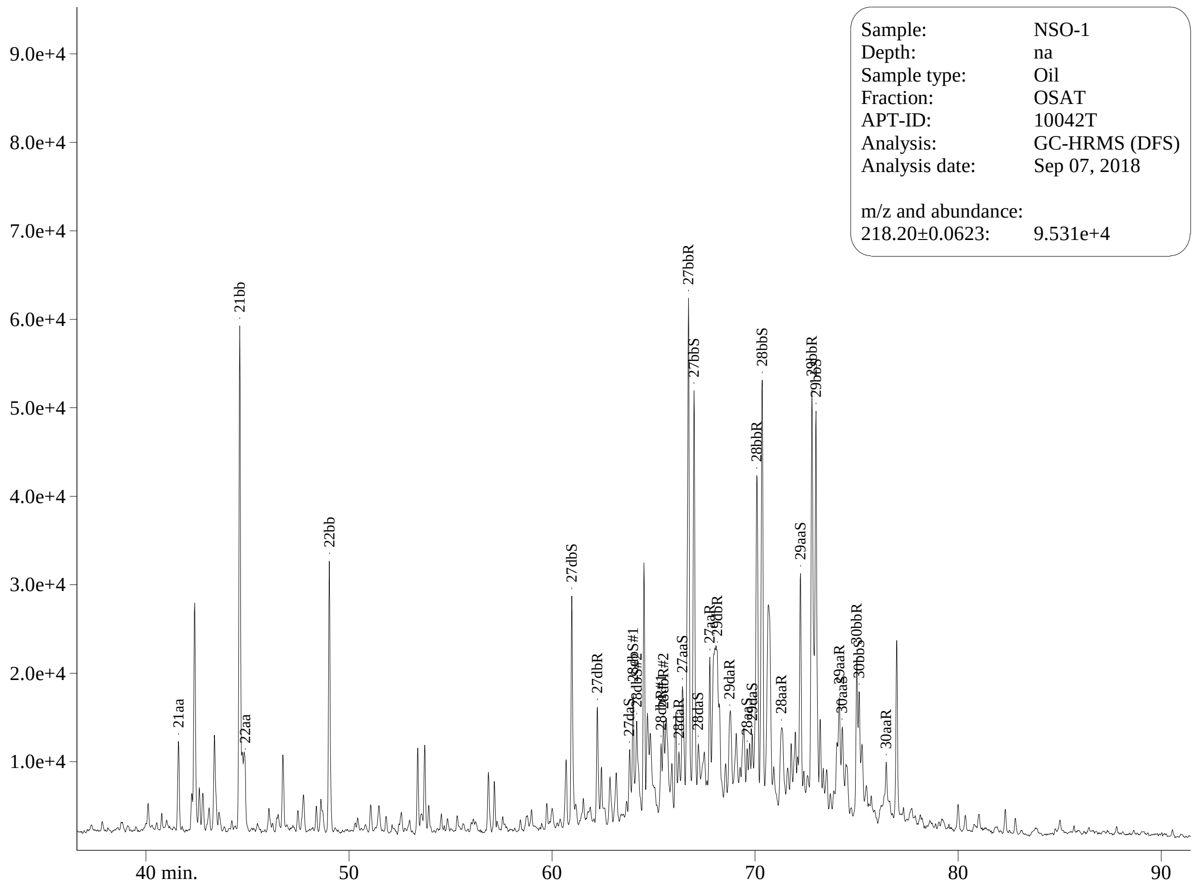
GC-MS Chromatograms of Saturated Hydrocarbons

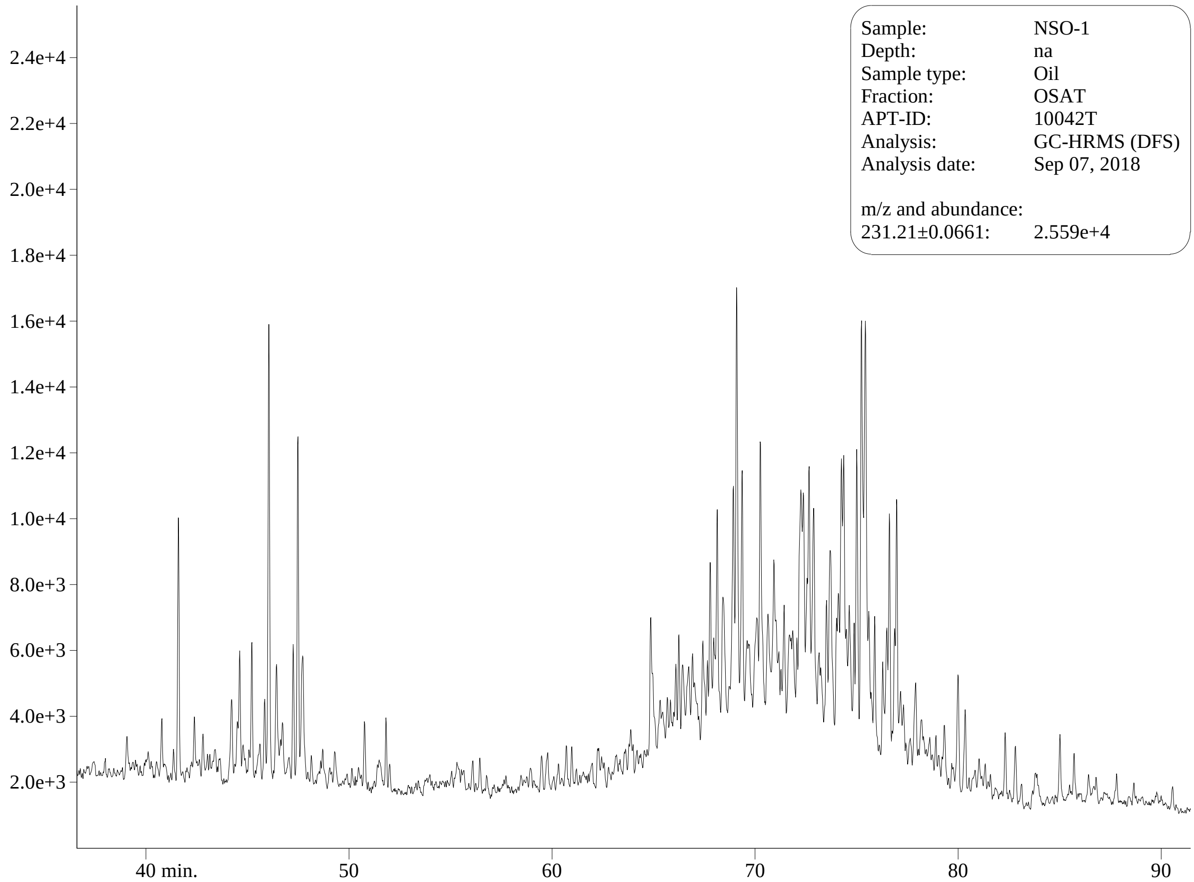

Sample: NSO-1
Depth: na
Sample type: Oil
Fraction: OSAT
APT-ID: 10042T
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
177.16±0.0506: 9.828e+4
24/4
27Ts
27Tm
25nor28ab
25nor29ab
28ab
25nor30ab
29ab
29Ts
29ba
25nor31ab
30ba
31abS
31abR
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR
40 min.
50
60
70
80
90
100

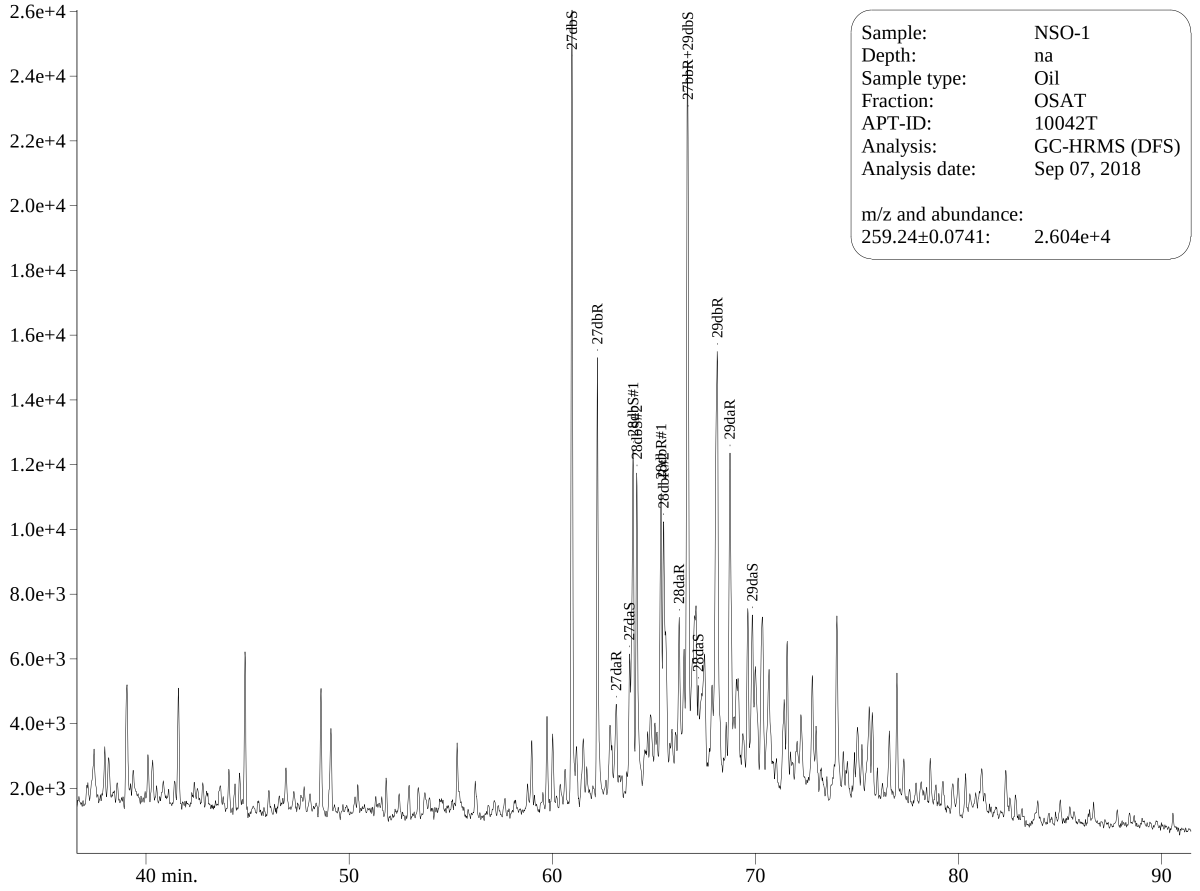

Sample: NSO-1
Depth: na
Sample type: Oil
Fraction: OSAT
APT-ID: 10042T
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
191.18±0.0546: 5.420e+5
19/3
20/3
21/3
22/3
23/3
24/3
27Ts
27Tm
28ab
25nor30ab
29ab
29Ts
30d
29ba
30ab
30ba
30G
31abS
31abR
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR
40 min.
50
60
70
80
90
100


Sample: NSO-1
Depth: na
Sample type: Oil
Fraction: OSAT
APT-ID: 10042T
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
205.20±0.0586: 6.256e+4
30ab
31abS
31abR
31ba
30ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR
6.0e+4
5.5e+4
5.0e+4
4.5e+4
4.0e+4
3.5e+4
3.0e+4
2.5e+4
2.0e+4
1.5e+4
1.0e+4
5.0e+3
40 min.
50
60
70
80
90
100

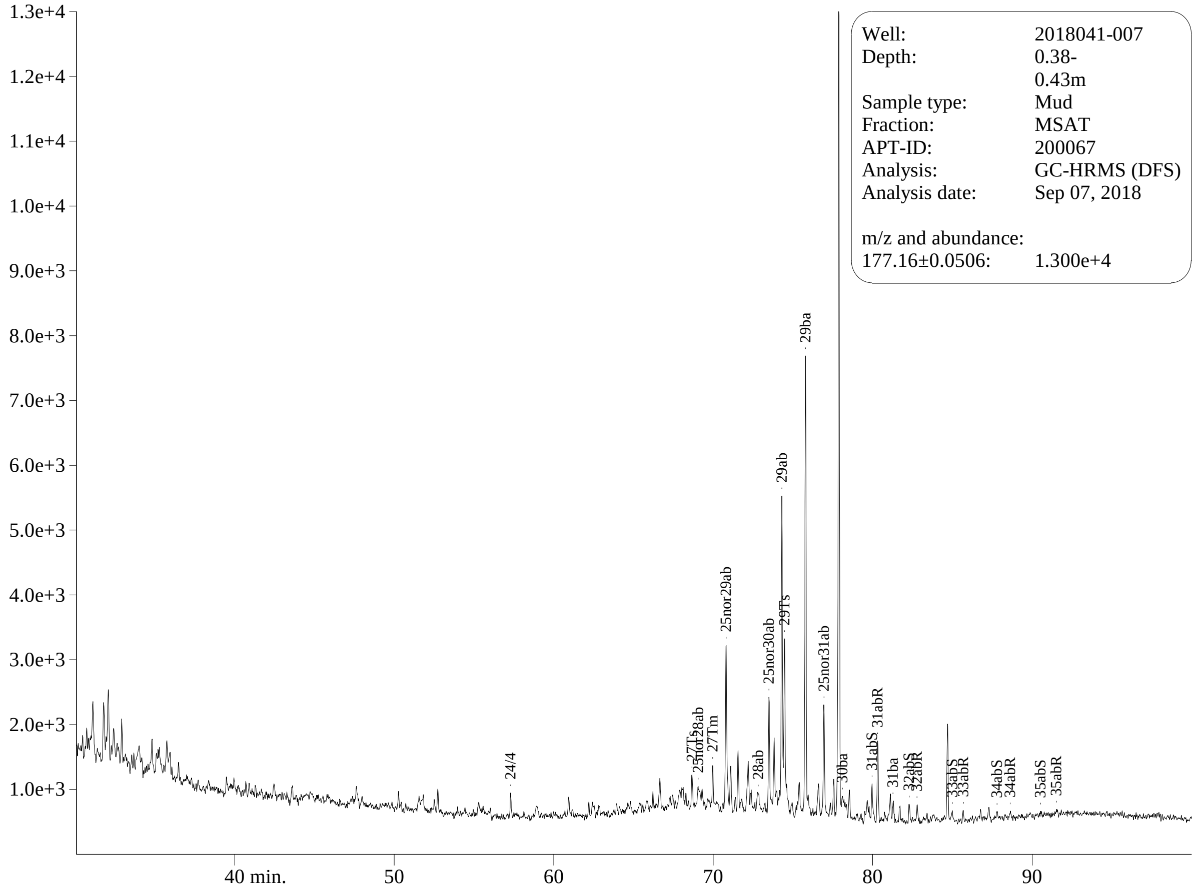

Sample: NSO-1
Depth: na
Sample type: Oil
Fraction: OSAT
APT-ID: 10042T
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
217.20±0.0621: 8.752e+4
21aa
21bb
22aa
22bb
27dbS
27dbR
27daR
27daS
27bbR+29dbS
27bbS
27aaS
27aaR
28dbR#2
28daR
28daS
29dbR
29daR
29daS
28bbS
28bbR
28aaS
28aaR
29aaS
29bbR
29bbS
29aaR
30bbR
30bbS
30aaR
8.0e+4
7.0e+4
6.0e+4
5.0e+4
4.0e+4
3.0e+4
2.0e+4
1.0e+4
40 min.
50
60
70
80
90

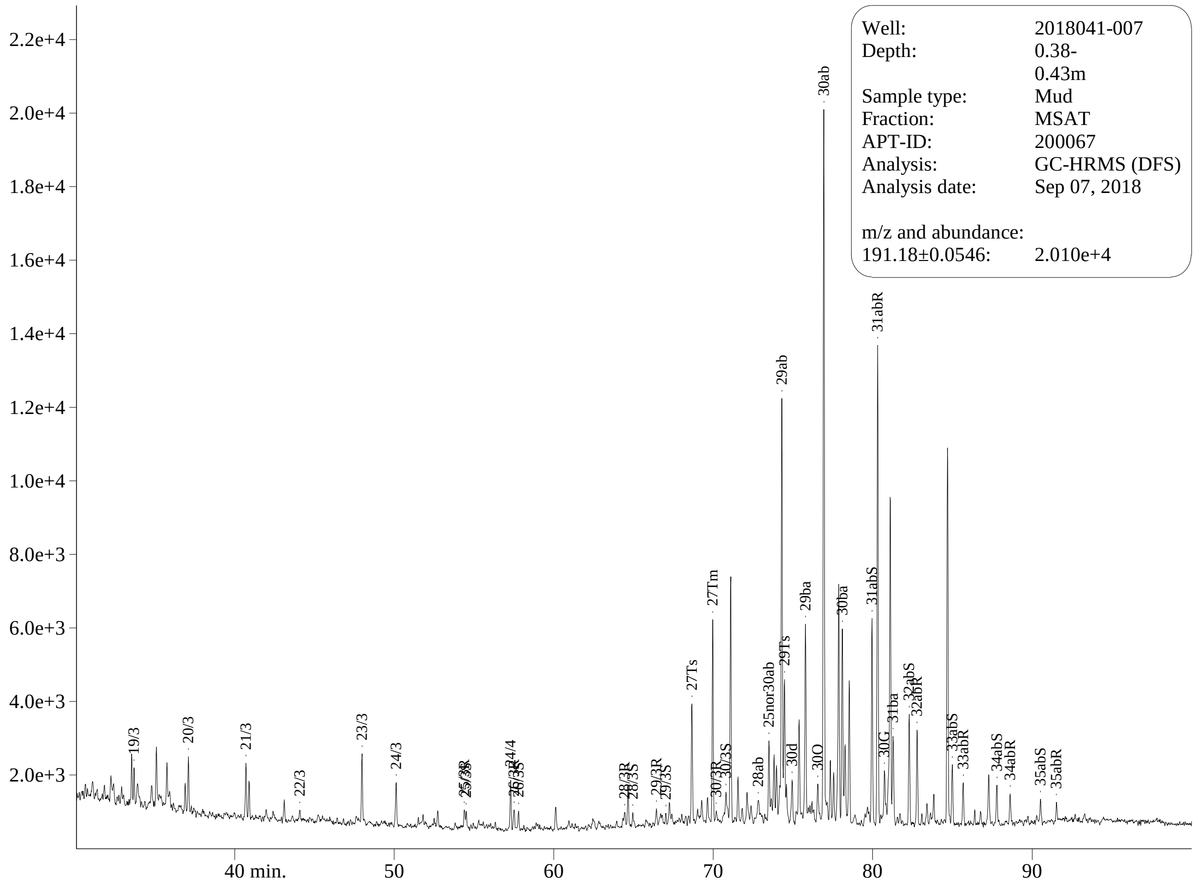

Sample: NSO-1
Depth: na
Sample type: Oil
Fraction: OSAT
APT-ID: 10042T
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
218.20±0.0623: 9.531e+4
21aa
21bb
22aa
22bb
27dbS
27dbR
27daS
27aaS
27bbR
27bbS
28daS
28bbR
28bbS
29daR
29daS
28aaS
28aaR
29aaS
29bbR
29bbS
29aaR
30aaS
30bbS
30bbR
30aaR
9.0e+4
8.0e+4
7.0e+4
6.0e+4
5.0e+4
4.0e+4
3.0e+4
2.0e+4
1.0e+4
40 min.
50
60
70
80
90

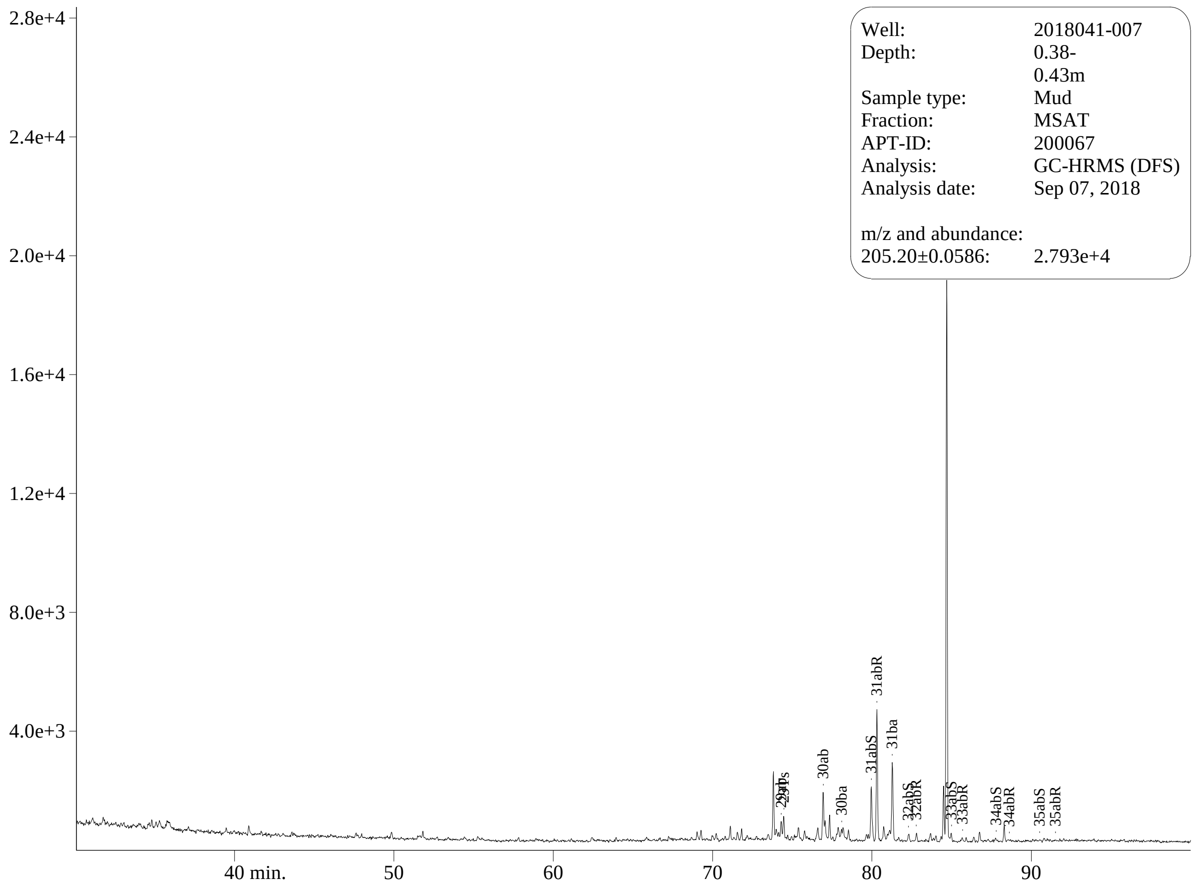

Sample: NSO-1
Depth: na
Sample type: Oil
Fraction: OSAT
APT-ID: 10042T
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
231.21±0.0661: 2.559e+4
2.4e+4
2.2e+4
2.0e+4
1.8e+4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
40 min.
50
60
70
80
90

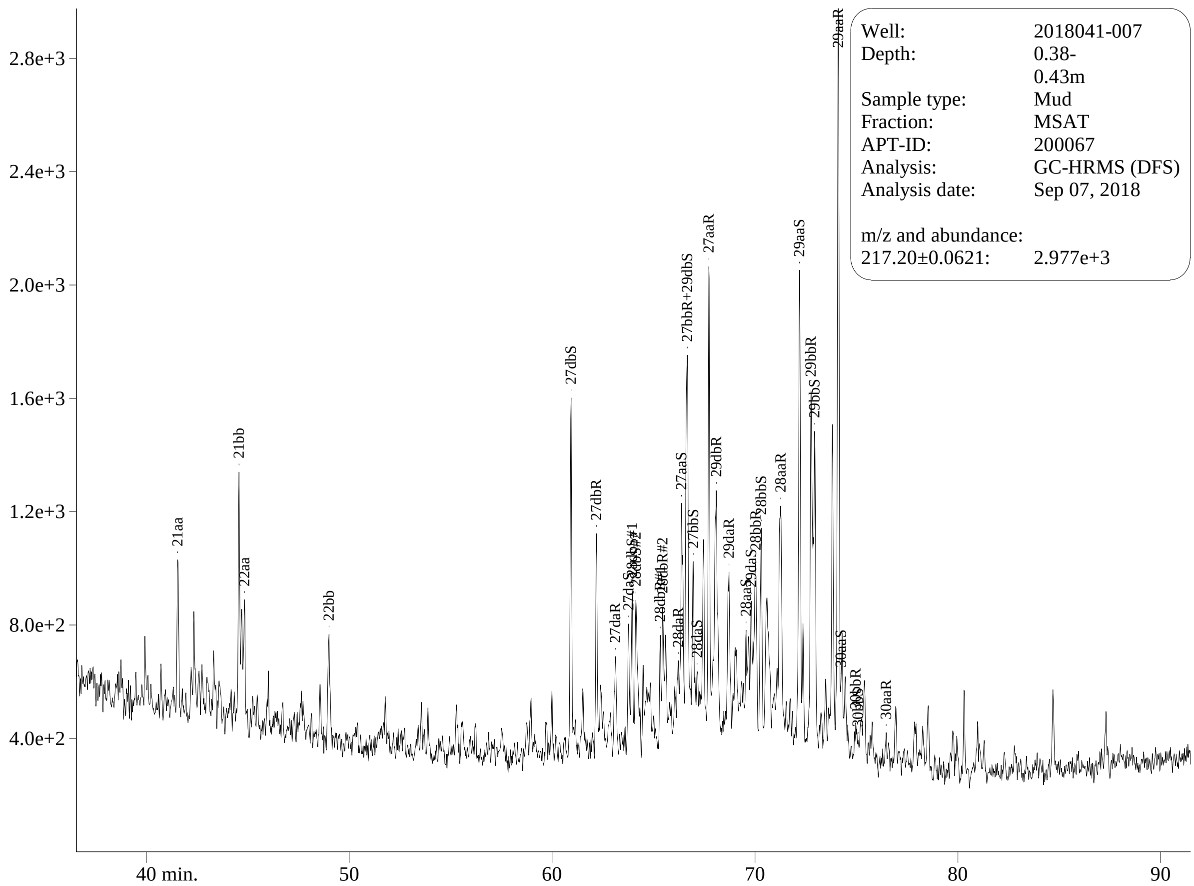


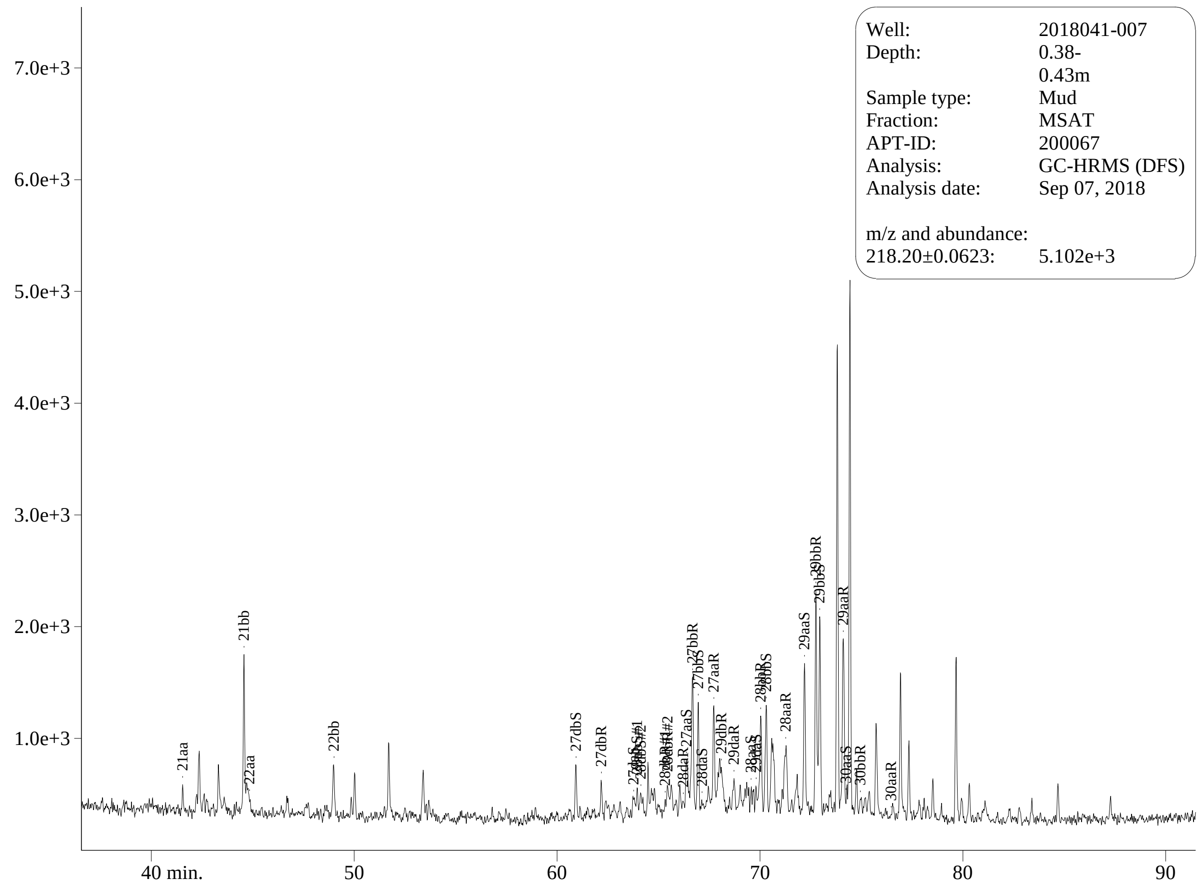
Sample: NSO-1
Depth: na
Sample type: Oil
Fraction: OSAT
APT-ID: 10042T
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
259.24±0.0741: 2.604e+4
27dbS
27dbR
27daR
27daS
28dbS#1
28dbS#2
28dbR#1
28dbR#2
27bbR+29dbS
28daR
28daS
29dbR
29daR
29daS
2.6e+4
2.4e+4
2.2e+4
2.0e+4
1.8e+4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
40 min.
50
60
70
80
90

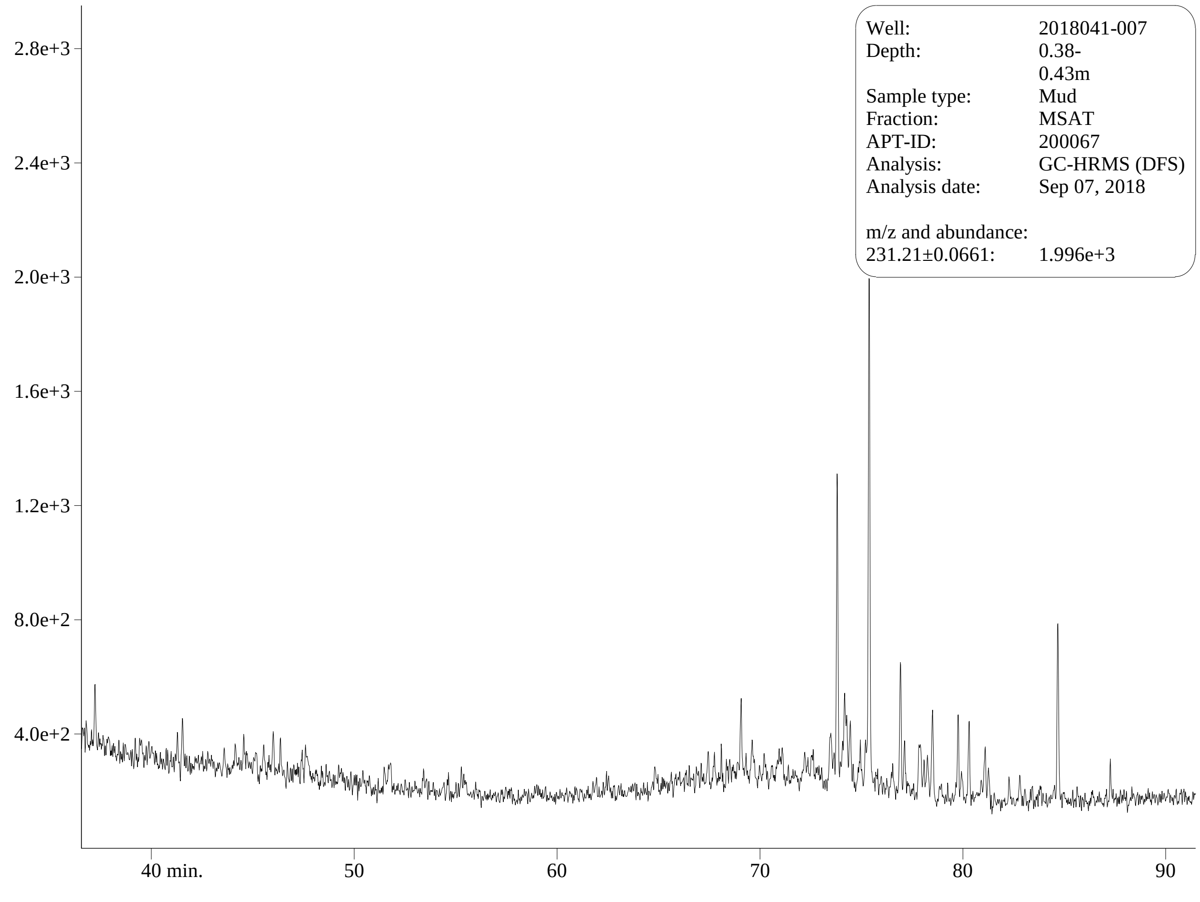

Well: 2018041-007
Depth: 0.38-0.43m
Sample type: Mud
Fraction: MSAT
APT-ID: 200067
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
177.16±0.0506: 1.300e+4

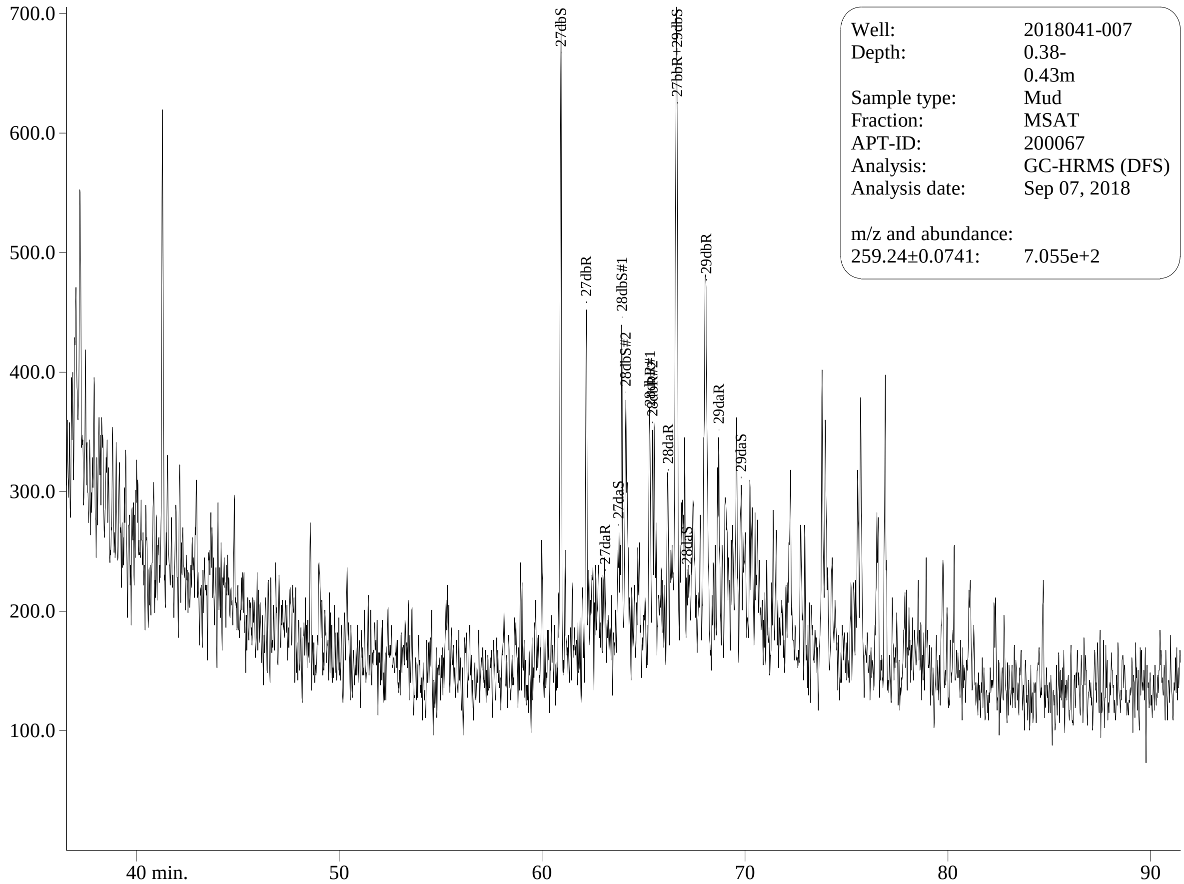

Well: 2018041-007
Depth: 0.38-0.43m
Sample type: Mud
Fraction: MSAT
APT-ID: 200067
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
191.18±0.0546: 2.010e+4


Well: 2018041-007
Depth: 0.38-0.43m
Sample type: Mud
Fraction: MSAT
APT-ID: 200067
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
205.20±0.0586: 2.793e+4
2.8e+4
2.4e+4
2.0e+4
1.6e+4
1.2e+4
8.0e+3
4.0e+3
40 min.
50
60
70
80
90
30ab
30ba
31abS
31abR
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR

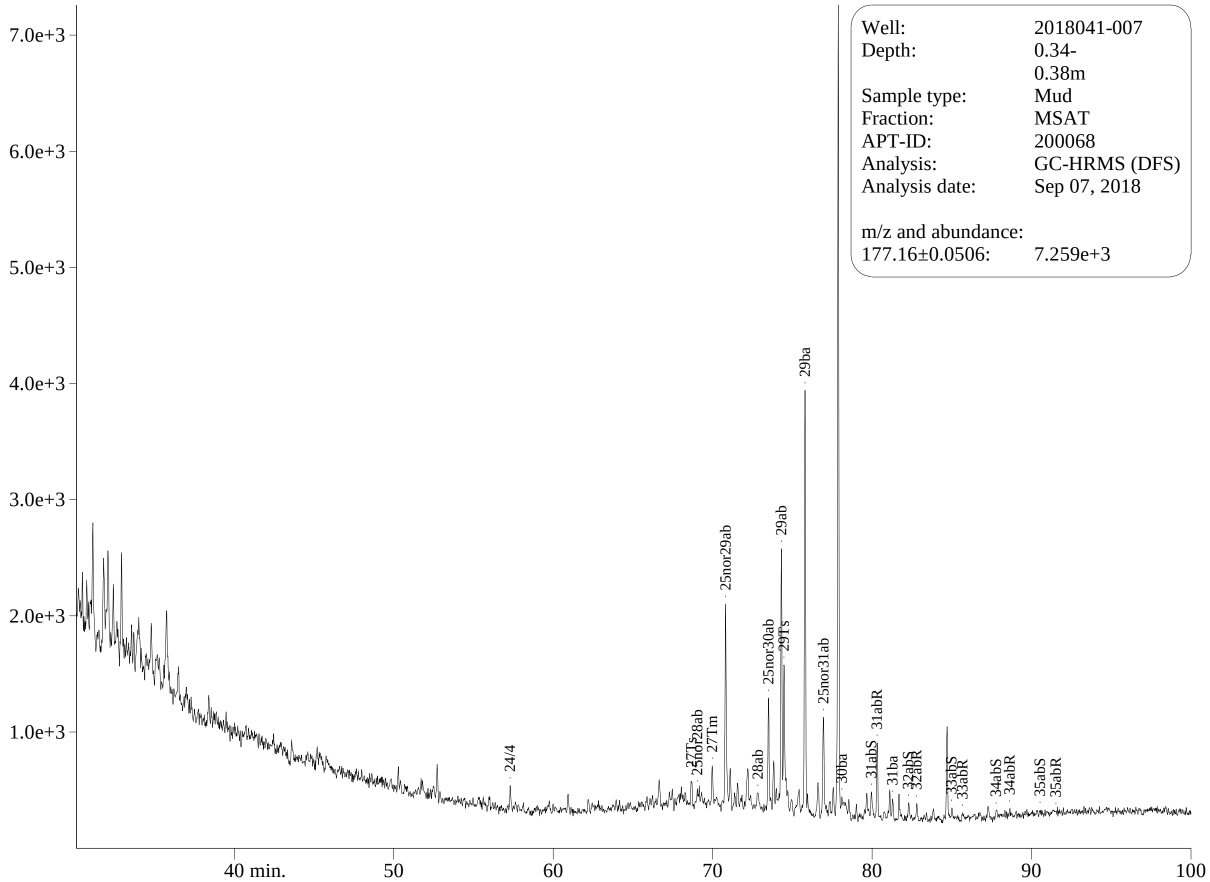

Well: 2018041-007
Depth: 0.38-0.43m
Sample type: Mud
Fraction: MSAT
APT-ID: 200067
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
217.20±0.0621: 2.977e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
40 min.
50
60
70
80
90
21aa
21bb
22aa
22bb
27dbS
27dbR
27daR
28daR
28daS
27aaS
27bbR+29dbS
27bbS
27aaR
29dbR
29daR
28aaS
28bbS
28aaR
29aaS
29bbR
29bbS
29aaR
30aaS
30aaR

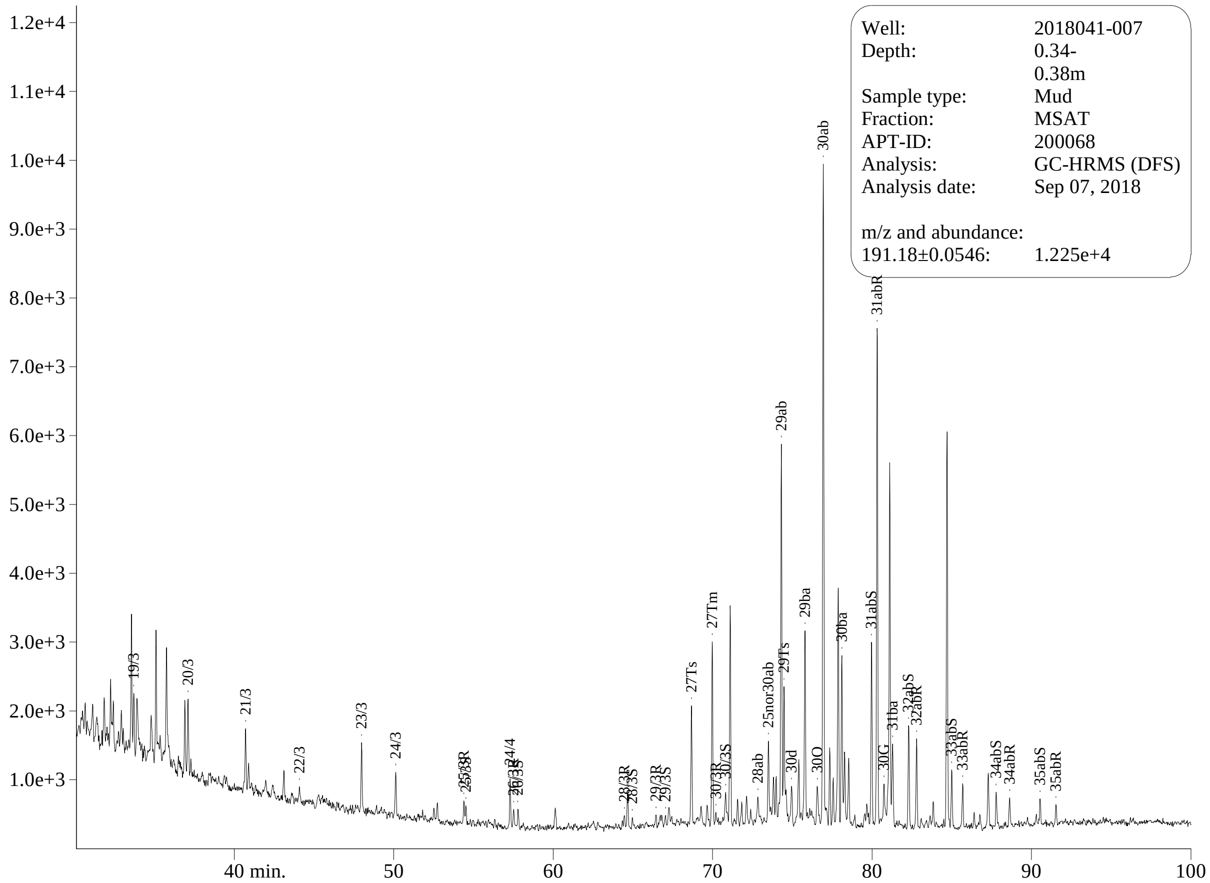

Well: 2018041-007
Depth: 0.38-0.43m
Sample type: Mud
Fraction: MSAT
APT-ID: 200067
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
218.20±0.0623: 5.102e+3
7.0e+3
6.0e+3
5.0e+3
4.0e+3
3.0e+3
2.0e+3
1.0e+3
40 min.
50
60
70
80
90
21aa
21bb
22aa
22bb
27dbS
27dbR
27bbR
27bbS
27aaS
27aaR
28daR
28daS
28aaS
28aaR
29dbR
29daR
29aaS
29bbR
29bbS
29aaR
30aaS
30bbR
30aaR

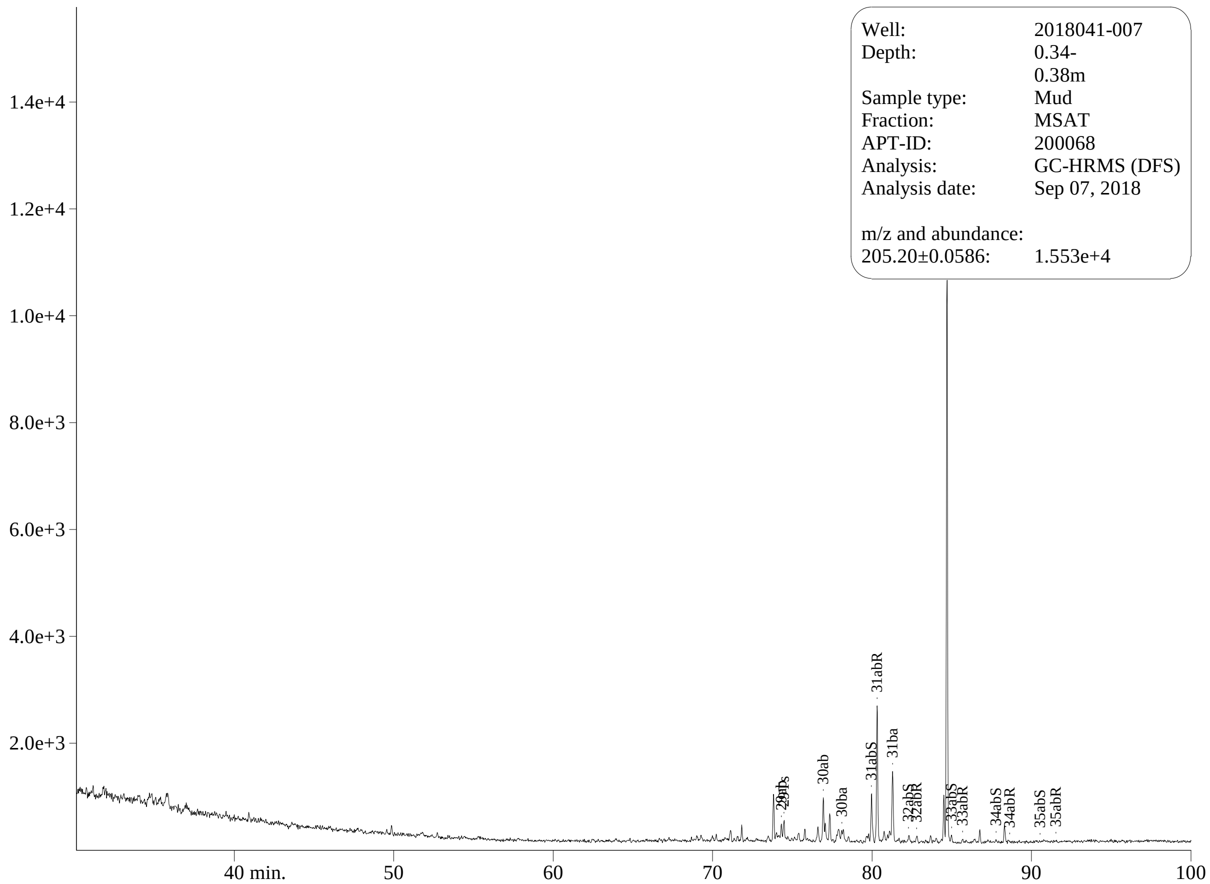

Well: 2018041-007
Depth: 0.38-0.43m
Sample type: Mud
Fraction: MSAT
APT-ID: 200067
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
231.21±0.0661: 1.996e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
40 min.
50
60
70
80
90

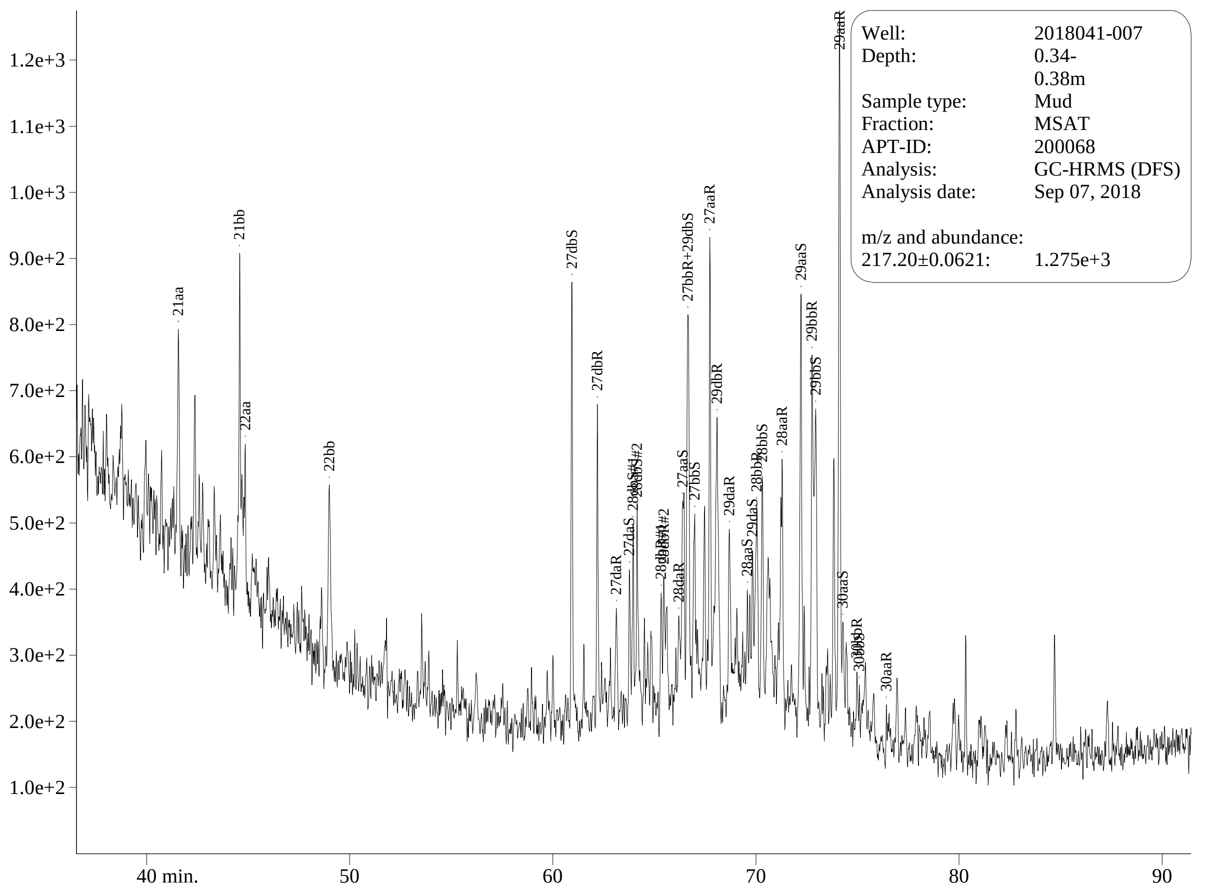


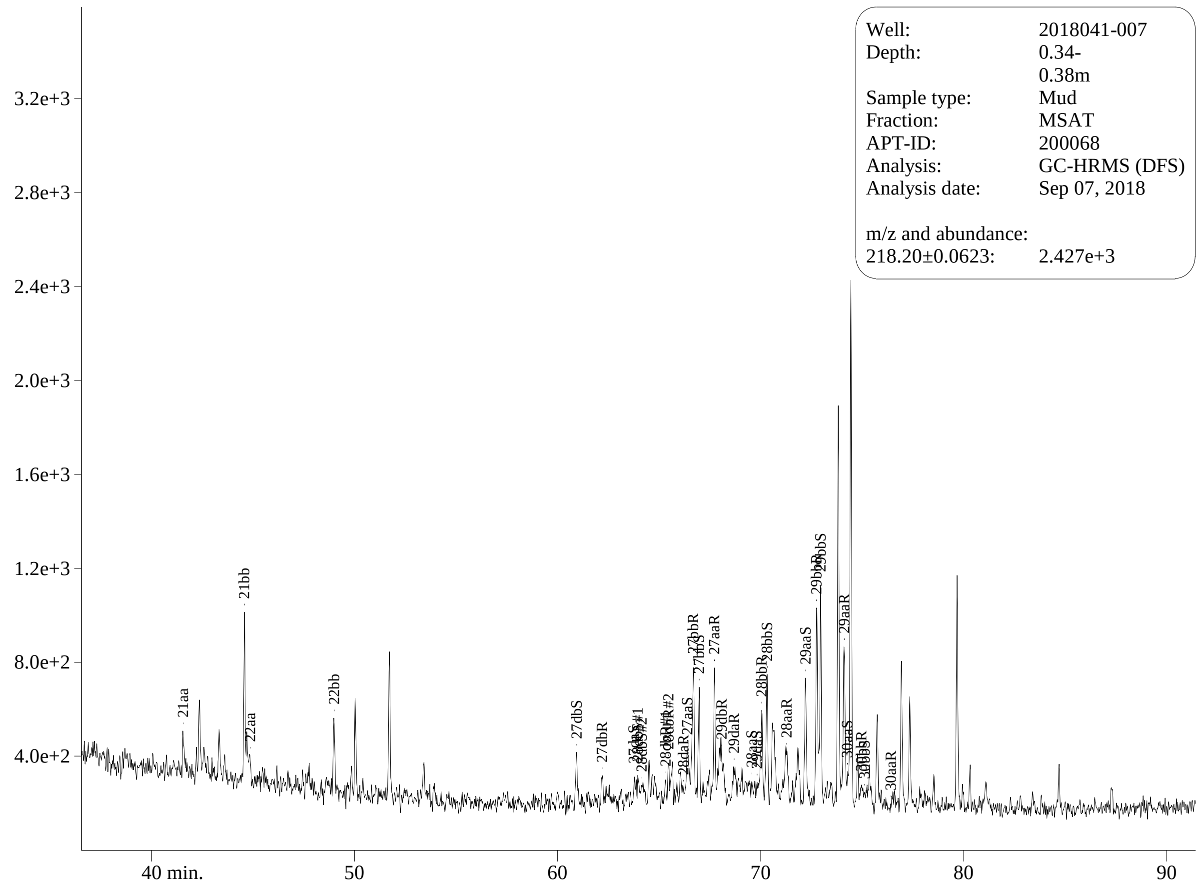
700.0
600.0
500.0
400.0
300.0
200.0
100.0
40 min.
50
60
70
80
90
27dbS
27dbR
27daR
27daS
28dbS#1
28dbS#2
28dbR#1
28dbR#2
28daR
28daS
27bbR+29dbS
29dbR
29daR
29daS
Well: 2018041-007
Depth: 0.38-0.43m
Sample type: Mud
Fraction: MSAT
APT-ID: 200067
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
259.24±0.0741: 7.055e+2

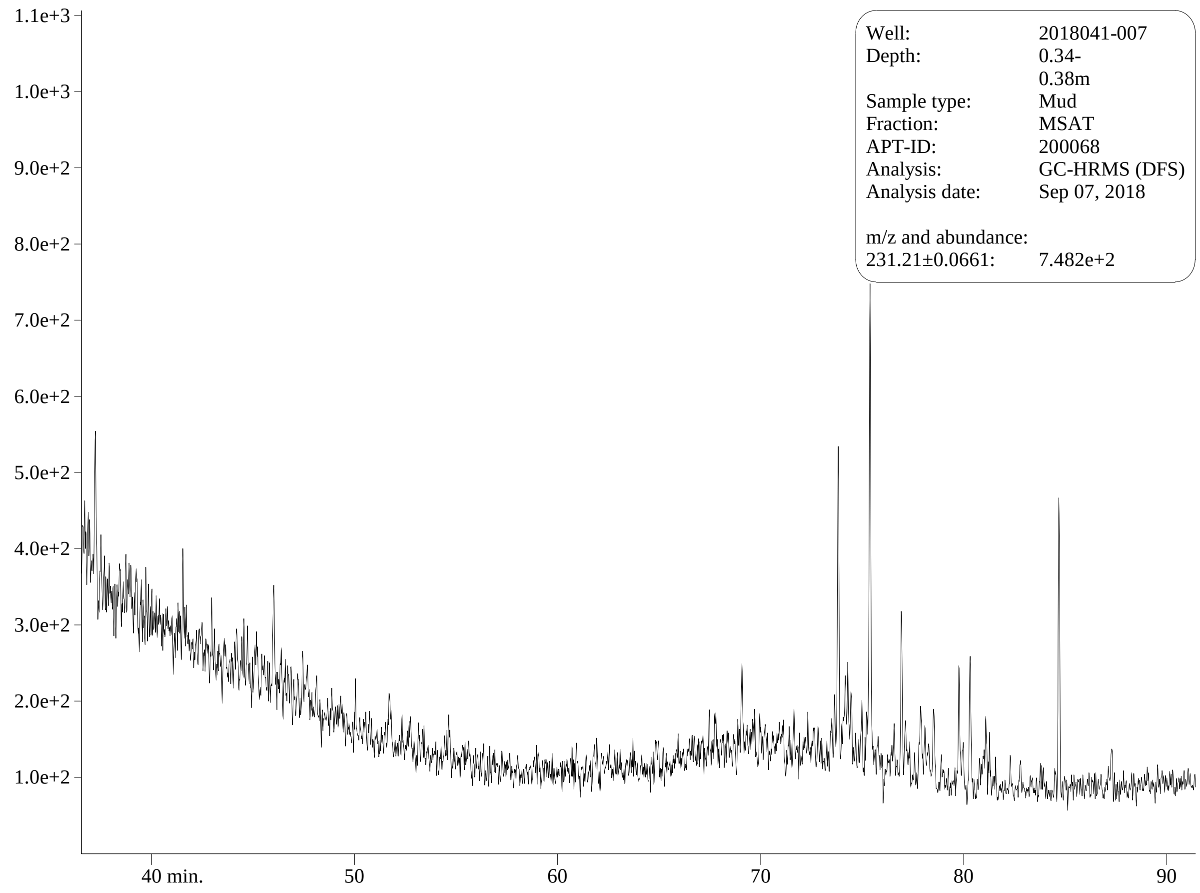

Well: 2018041-007
Depth: 0.34-0.38m
Sample type: Mud
Fraction: MSAT
APT-ID: 200068
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
177.16±0.0506: 7.259e+3
40 min.
50
60
70
80
90
100
24/4
27Ts
25nor28ab
27Tm
25nor29ab
28ab
25nor30ab
29ab
29Ts
29ba
25nor31ab
30ba
31abS
31abR
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR

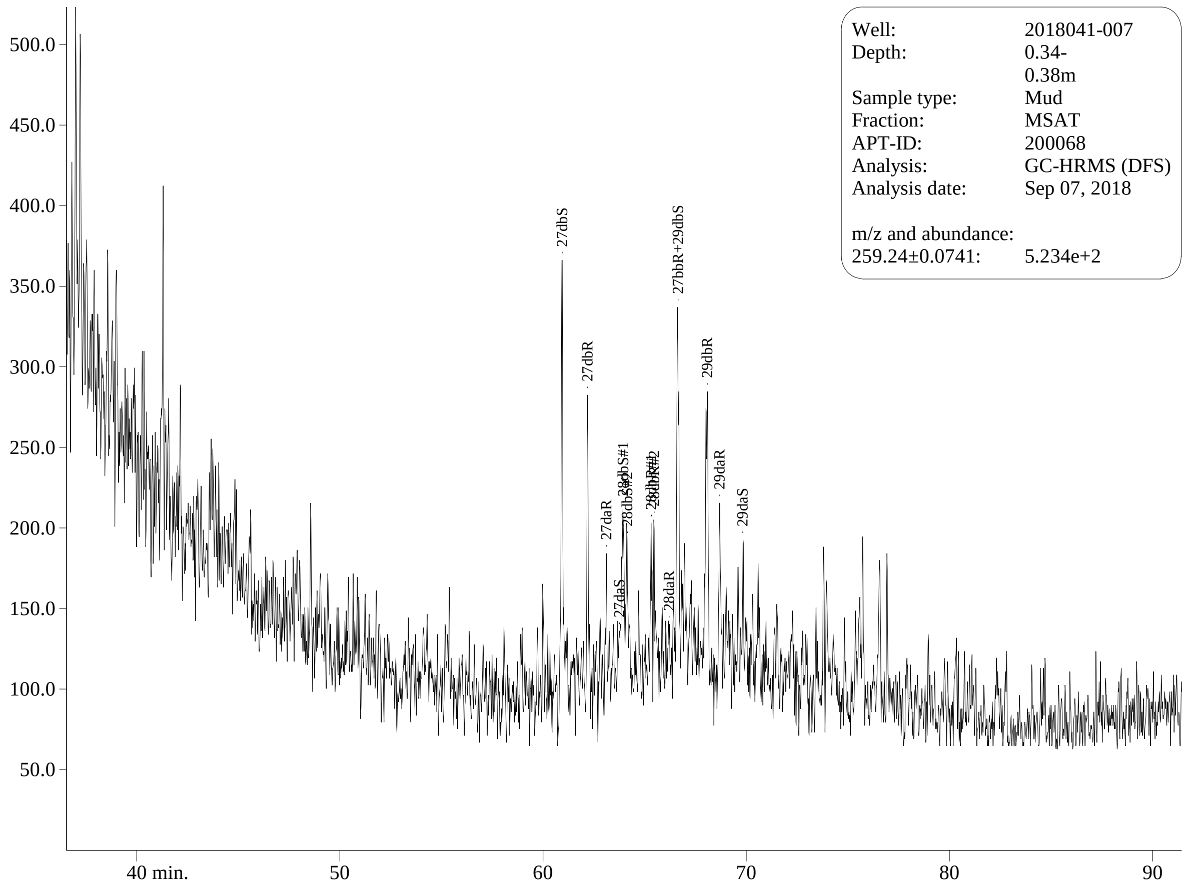

Well: 2018041-007
Depth: 0.34-0.38m
Sample type: Mud
Fraction: MSAT
APT-ID: 200068
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
191.18±0.0546: 1.225e+4
40 min.
50
60
70
80
90
100
19/3
20/3
21/3
22/3
23/3
24/3
25/3R
25/3S
24/4
26/3R
26/3S
28/3R
28/3S
29/3R
29/3S
27Ts
27Tm
30/3R
30/3S
28ab
25nor30ab
29ab
29Ts
30d
29ba
30O
30ab
30ba
30G
31abS
31abR
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR

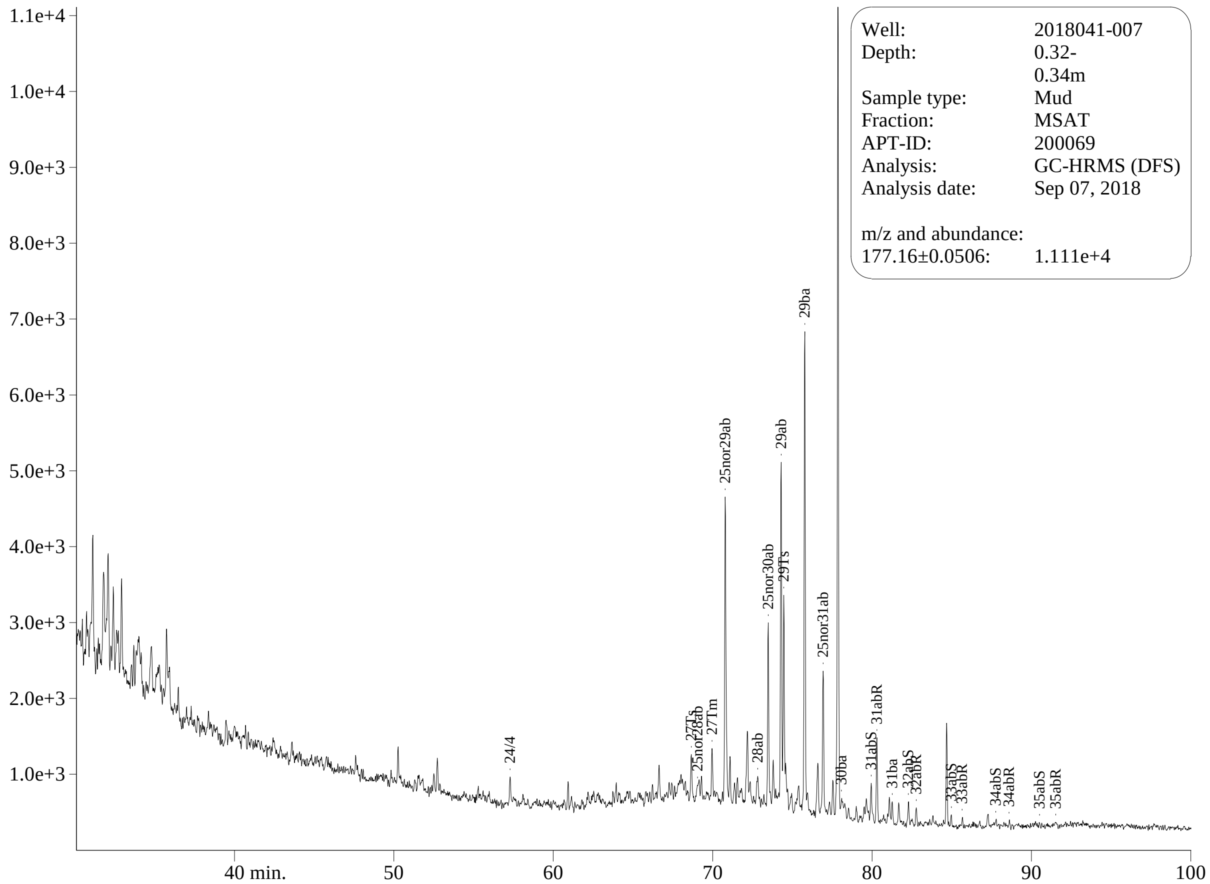

Well: 2018041-007
Depth: 0.34-0.38m
Sample type: Mud
Fraction: MSAT
APT-ID: 200068
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
205.20±0.0586: 1.553e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
40 min.
50
60
70
80
90
100
30ab
30ba
31abS
31abR
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR

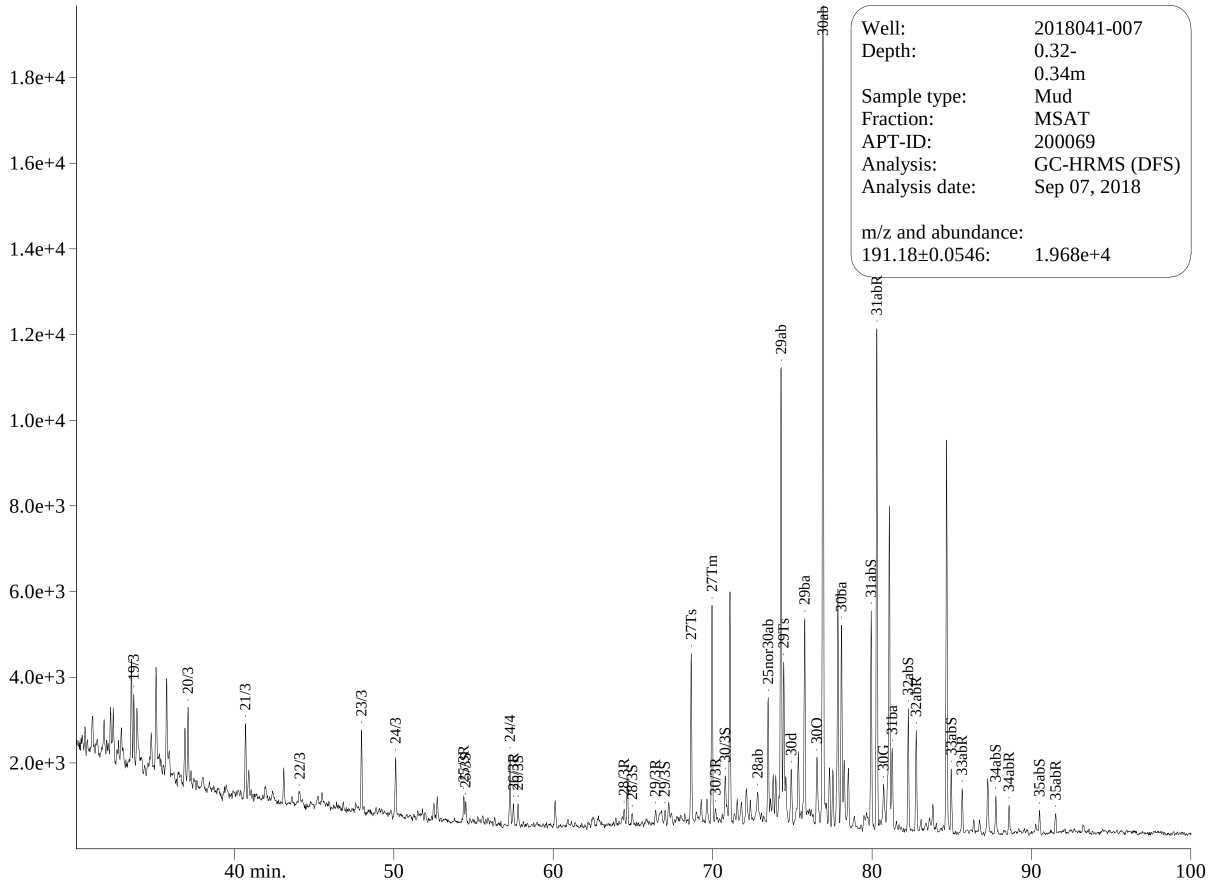

Well: 2018041-007
Depth: 0.34-0.38m
Sample type: Mud
Fraction: MSAT
APT-ID: 200068
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
217.20±0.0621: 1.275e+3
1.2e+3
1.1e+3
1.0e+3
9.0e+2
8.0e+2
7.0e+2
6.0e+2
5.0e+2
4.0e+2
3.0e+2
2.0e+2
1.0e+2
40 min.
50
60
70
80
90
21aa
21bb
22aa
22bb
27dbS
27dbR
27daR
27daS
27bbR+29dbS
27aaS
27bbS
27aaR
28daR
29dbR
29daR
28aaS
29daS
28bbR
28bbS
28aaR
29aaS
29bbR
29bbS
29aaR
30aaS
30aaR

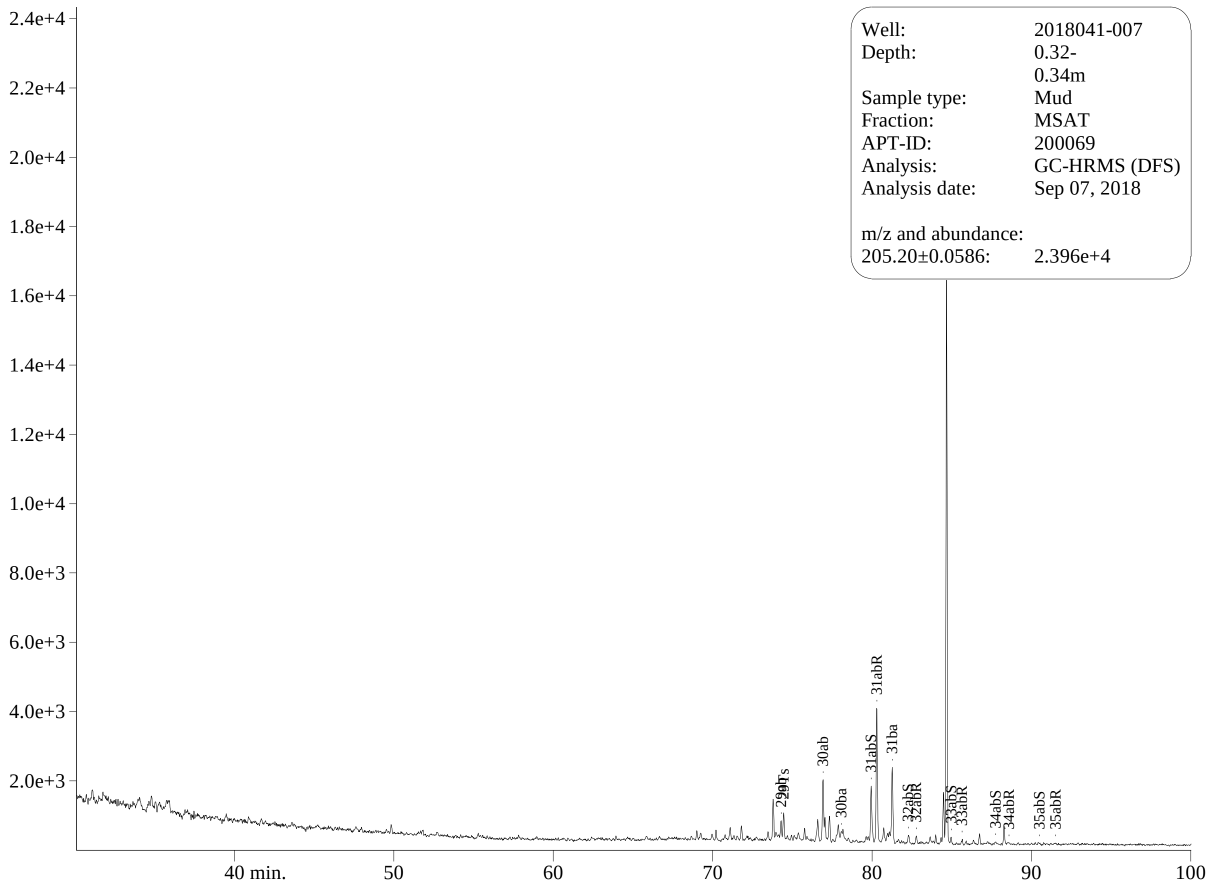

Well: 2018041-007
Depth: 0.34-0.38m
Sample type: Mud
Fraction: MSAT
APT-ID: 200068
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
218.20±0.0623: 2.427e+3
3.2e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
40 min.
50
60
70
80
90
21aa
21bb
22aa
22bb
27dbS
27dbR
27daR
27aaS
27bbR
27aaR
28aaR
29aaS
29aaR
30aaS
30aaR
29daR
29dbR
28aaS
28bbR
28bbS
29bbS

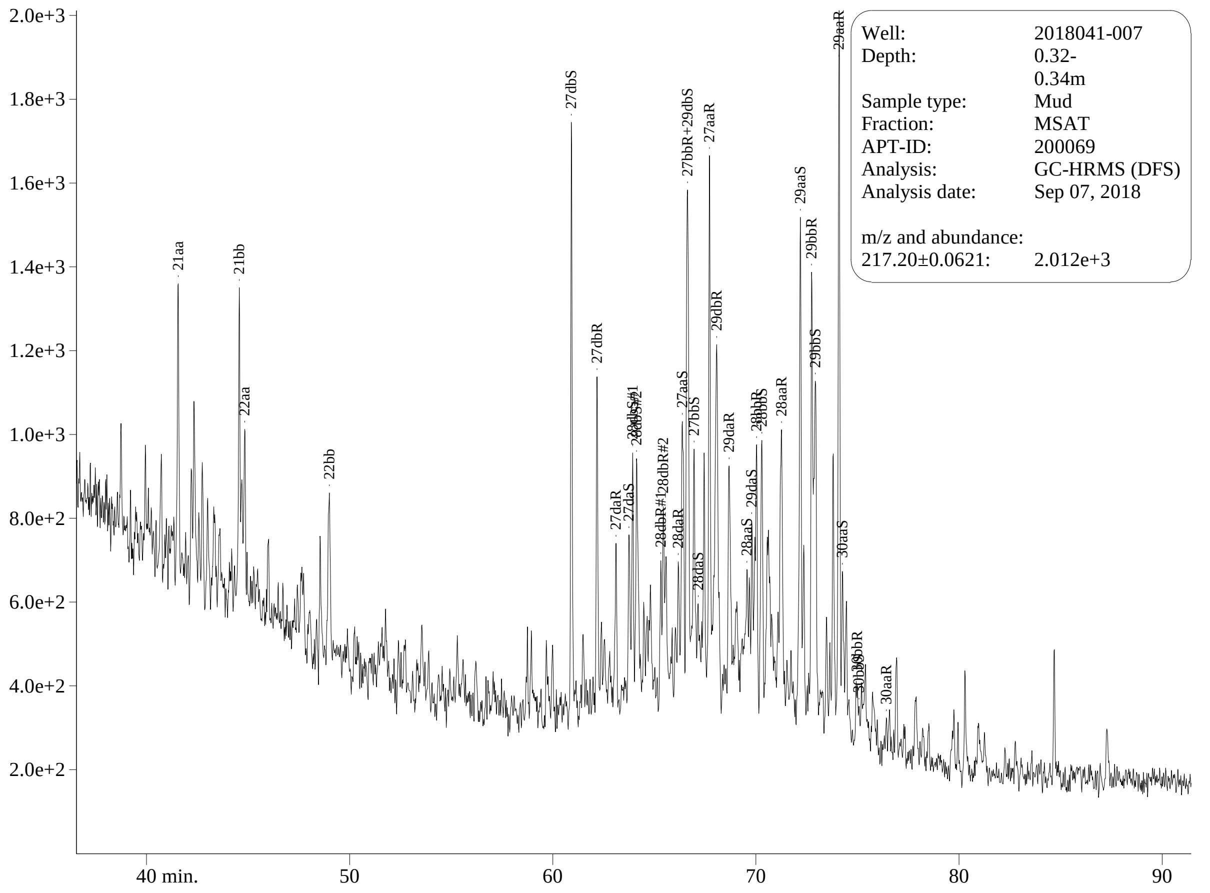

Well: 2018041-007
Depth: 0.34-0.38m
Sample type: Mud
Fraction: MSAT
APT-ID: 200068
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
231.21±0.0661: 7.482e+2
1.1e+3
1.0e+3
9.0e+2
8.0e+2
7.0e+2
6.0e+2
5.0e+2
4.0e+2
3.0e+2
2.0e+2
1.0e+2
40 min.
50
60
70
80
90

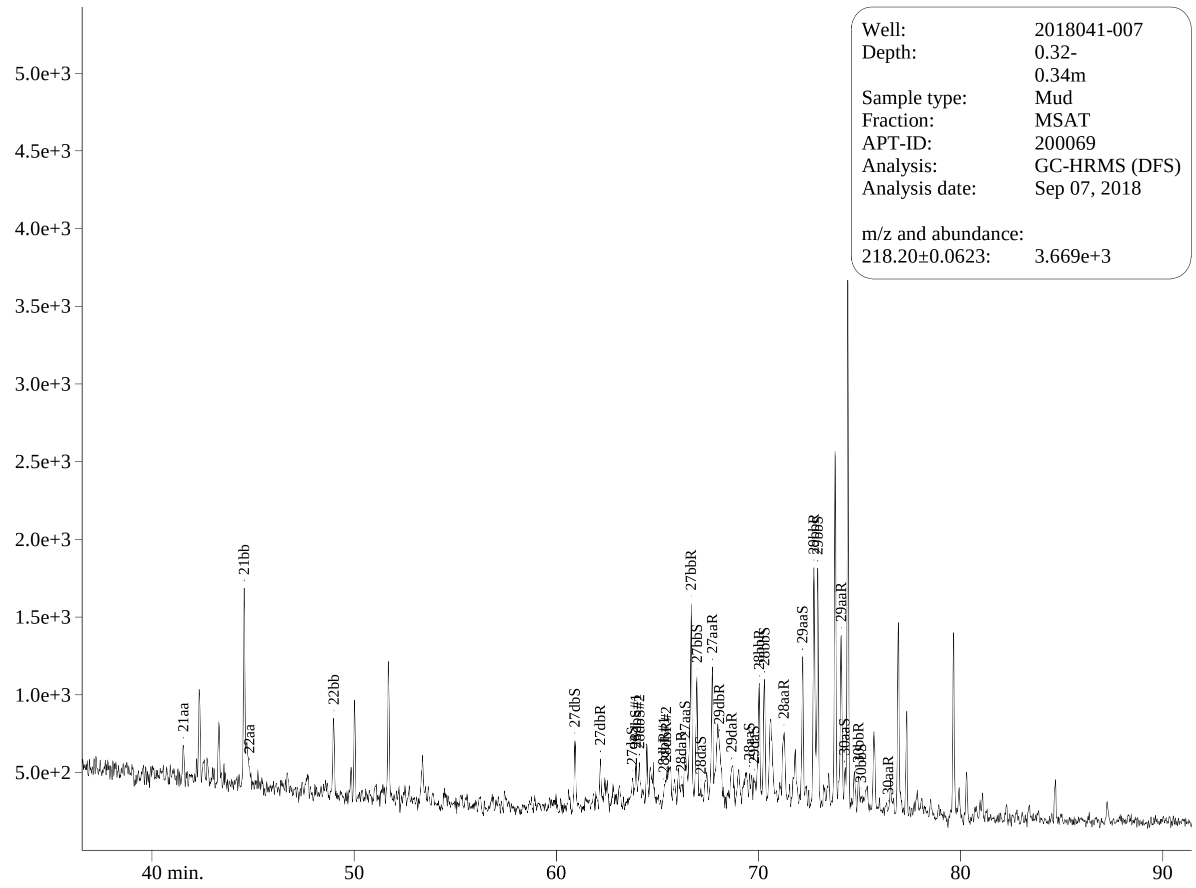

Well: 2018041-007
Depth: 0.34-0.38m
Sample type: Mud
Fraction: MSAT
APT-ID: 200068
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
259.24±0.0741: 5.234e+2
27dbS
27dbR
27daR
27daS
28dbS#1
28dbS#2
28dbR#1
28dbR#2
28daR
27bbR+29dbS
29dbR
29daR
29daS
500.0
450.0
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
40 min.
50
60
70
80
90

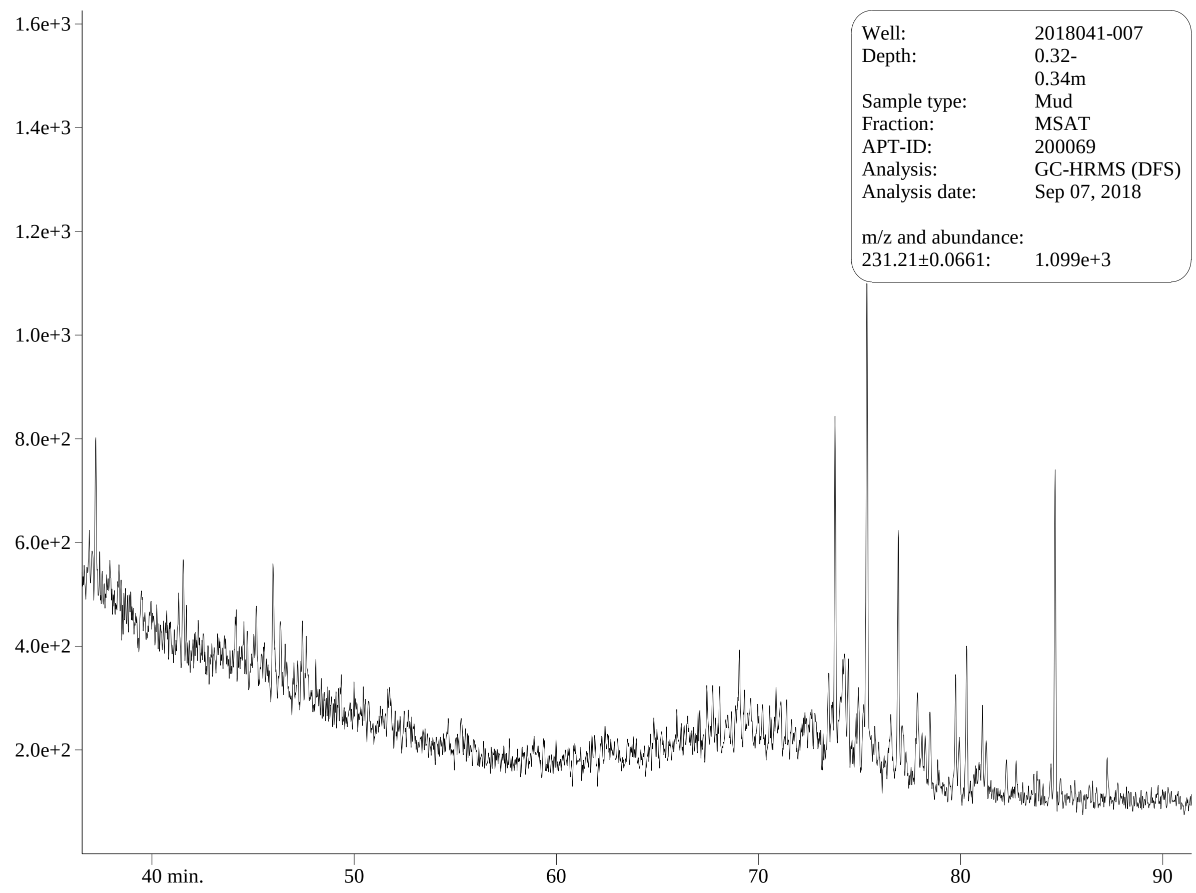

Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
177.16±0.0506: 1.111e+4
24/4
27Ts
25nor28ab
27Tm
25nor29ab
28ab
25nor30ab
29ab
29Ts
29ba
25nor31ab
30ba
31abS
31abR
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR
40 min.
50
60
70
80
90
100

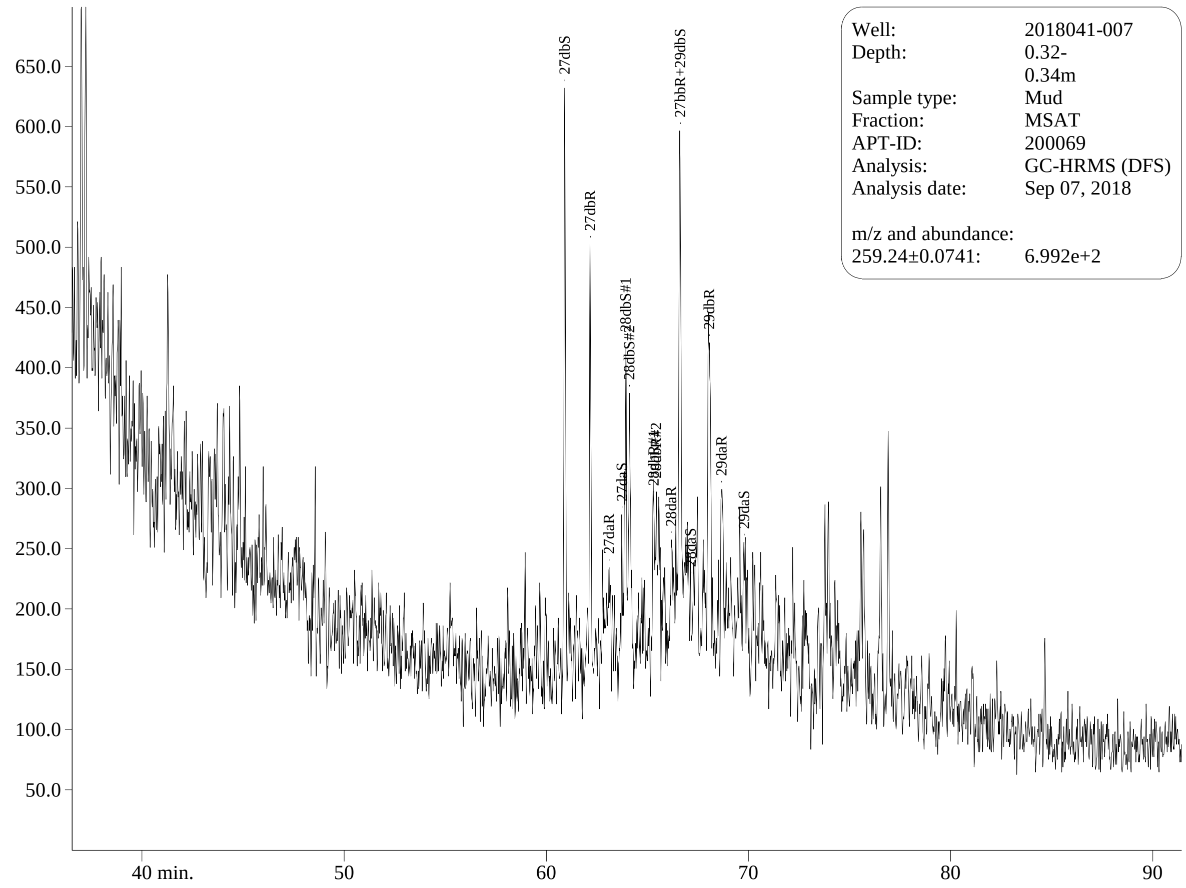

Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
191.18±0.0546: 1.968e+4
19/3
20/3
21/3
22/3
23/3
24/3
24/4
27Ts
27Tm
30/3R
30/3S
28ab
25nor30ab
29ab
29Ts
30d
29ba
30O
30ab
30ba
31abS
31abR
30G
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR
40 min.
50
60
70
80
90
100

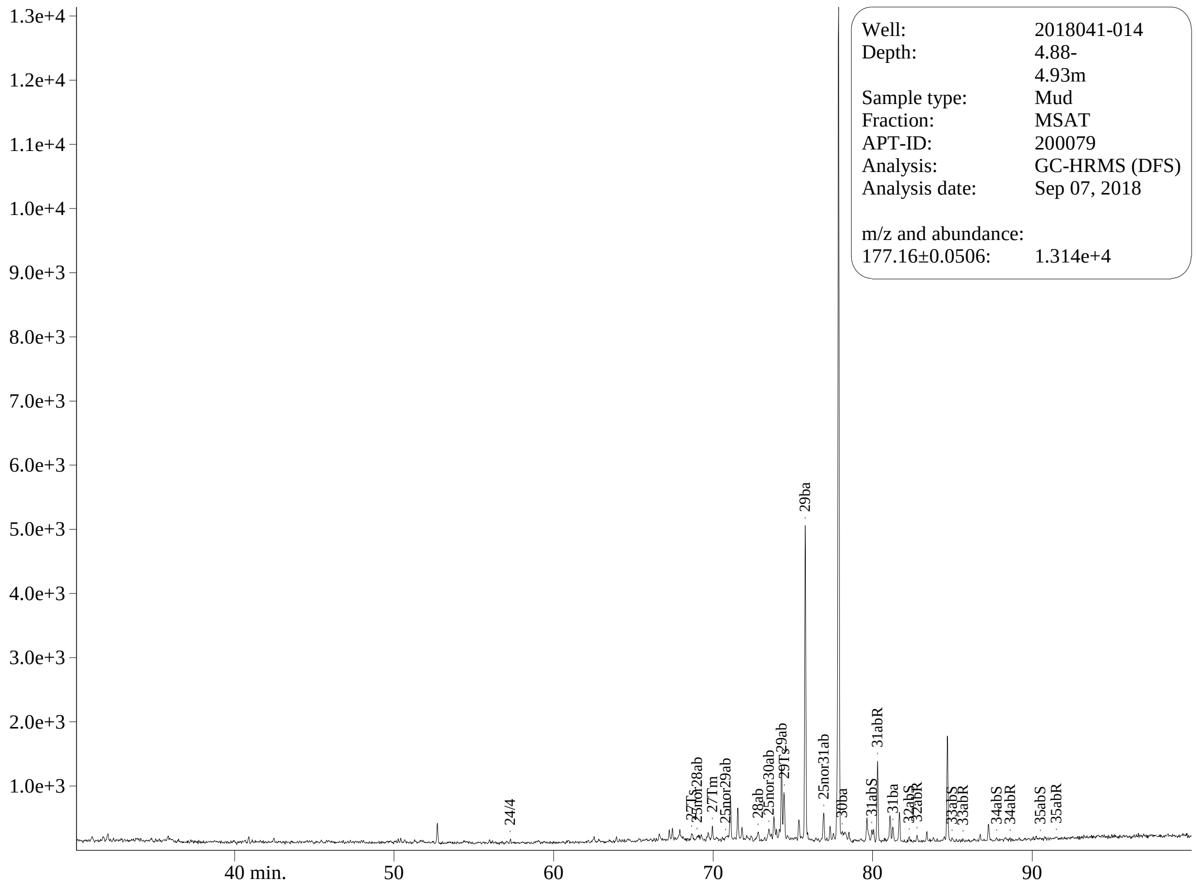

Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
205.20±0.0586: 2.396e+4
2.4e+4
2.2e+4
2.0e+4
1.8e+4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
40 min.
50
60
70
80
90
100
30ab
30ba
31abS
31abR
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR

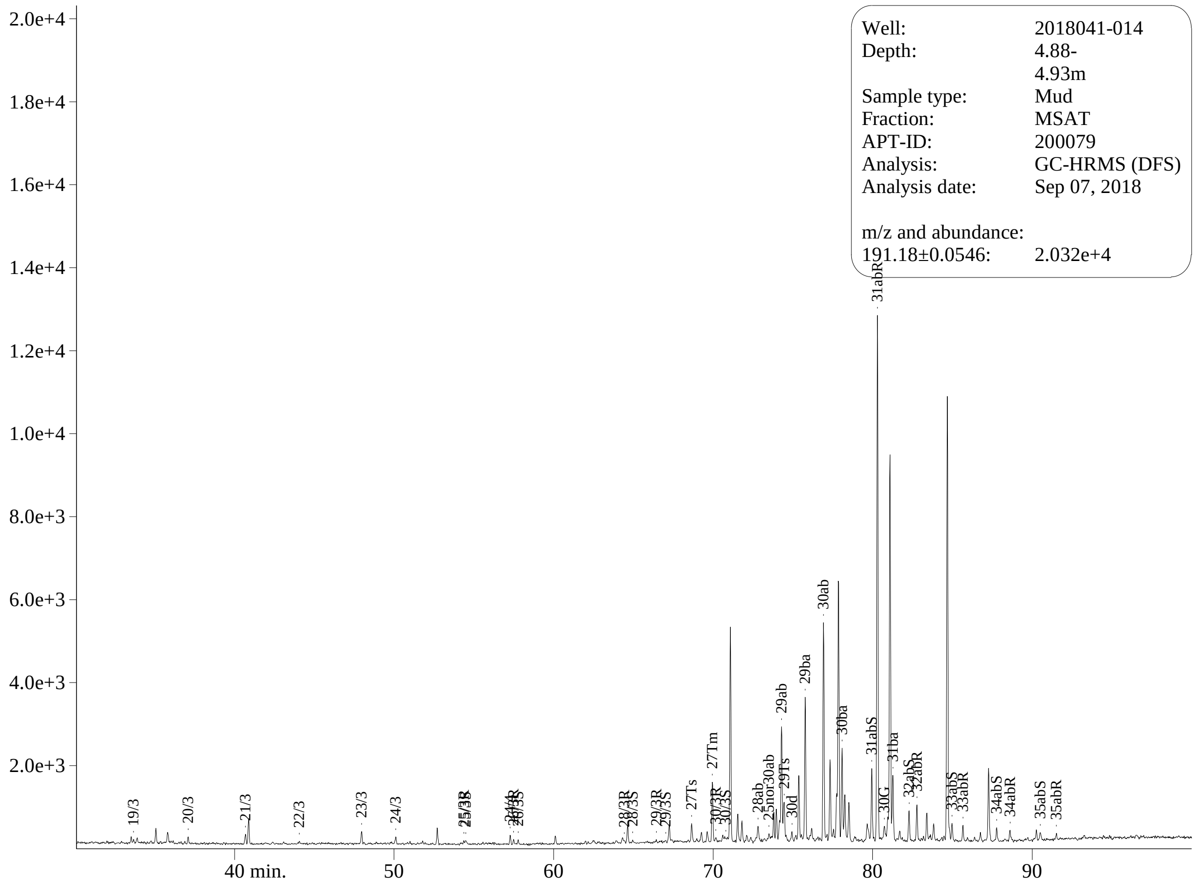

Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
217.20±0.0621: 2.012e+3
2.0e+3
1.8e+3
1.6e+3
1.4e+3
1.2e+3
1.0e+3
8.0e+2
6.0e+2
4.0e+2
2.0e+2
40 min.
50
60
70
80
90
21aa
21bb
22aa
22bb
27dbS
27dbR
27daR
27daS
28dbR#1
28dbR#2
28daR
28daS
27aaS
27bbR+29dbS
27bbS
27aaR
29dbR
29daR
28aaS
29daS
28bbR
28bbS
28aaR
29aaS
29bbR
29bbS
29aaR
30aaS
30bbR
30aaR

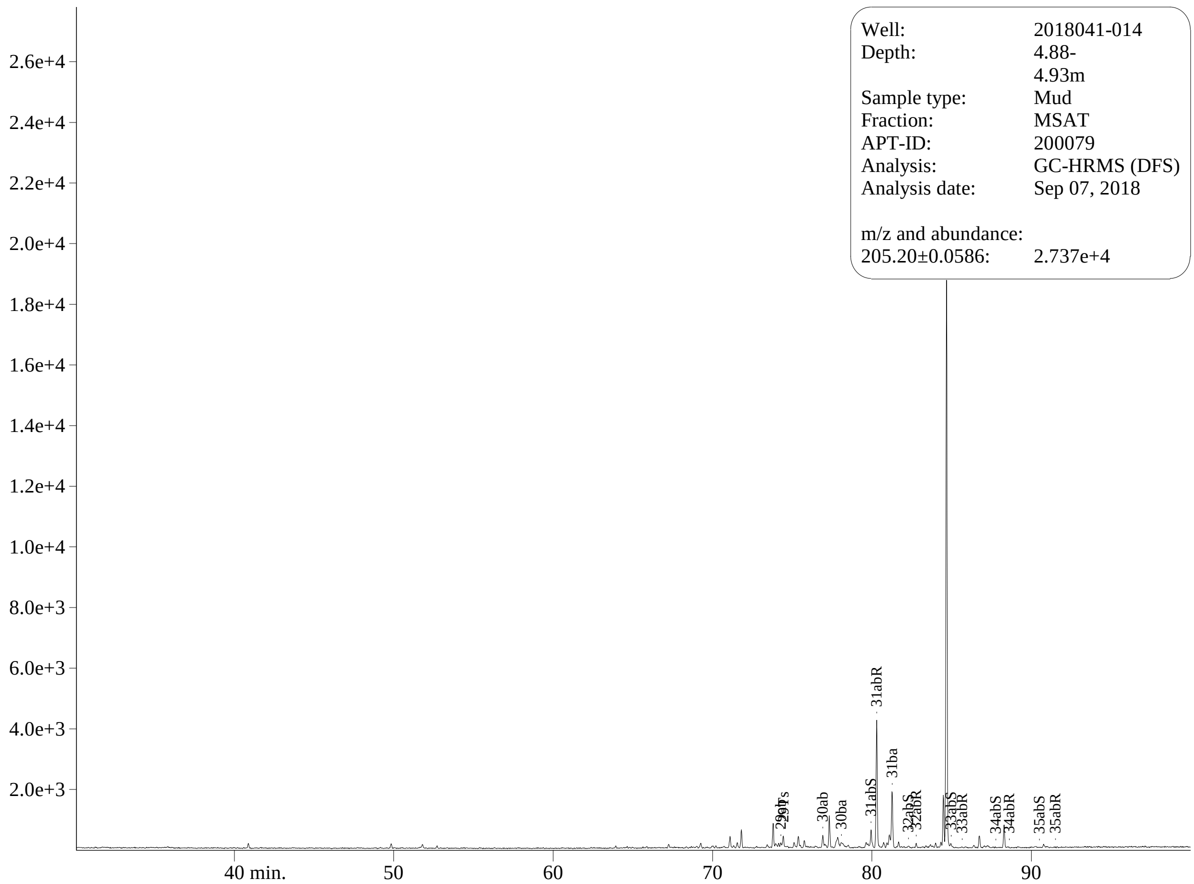

Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
218.20±0.0623: 3.669e+3
5.0e+3
4.5e+3
4.0e+3
3.5e+3
3.0e+3
2.5e+3
2.0e+3
1.5e+3
1.0e+3
5.0e+2
40 min.
50
60
70
80
90
21aa
21bb
22aa
22bb
27dbS
27dbR
27bbR
27bbS
27aaR
27aaS
28daS
29dbR
29daR
28aaR
29aaS
29aaR
30aaS
30bbR
30aaR

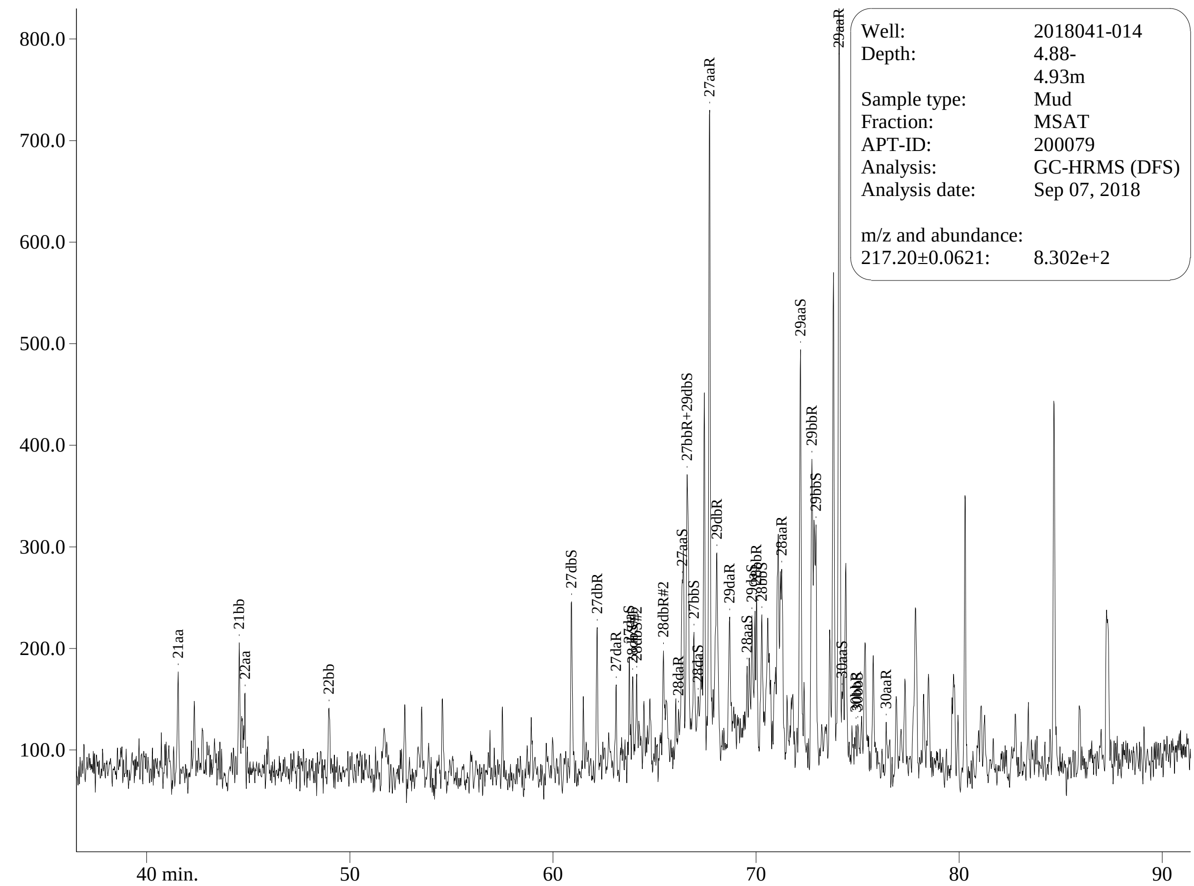

Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
231.21±0.0661: 1.099e+3
1.6e+3
1.4e+3
1.2e+3
1.0e+3
8.0e+2
6.0e+2
4.0e+2
2.0e+2
40 min.
50
60
70
80
90

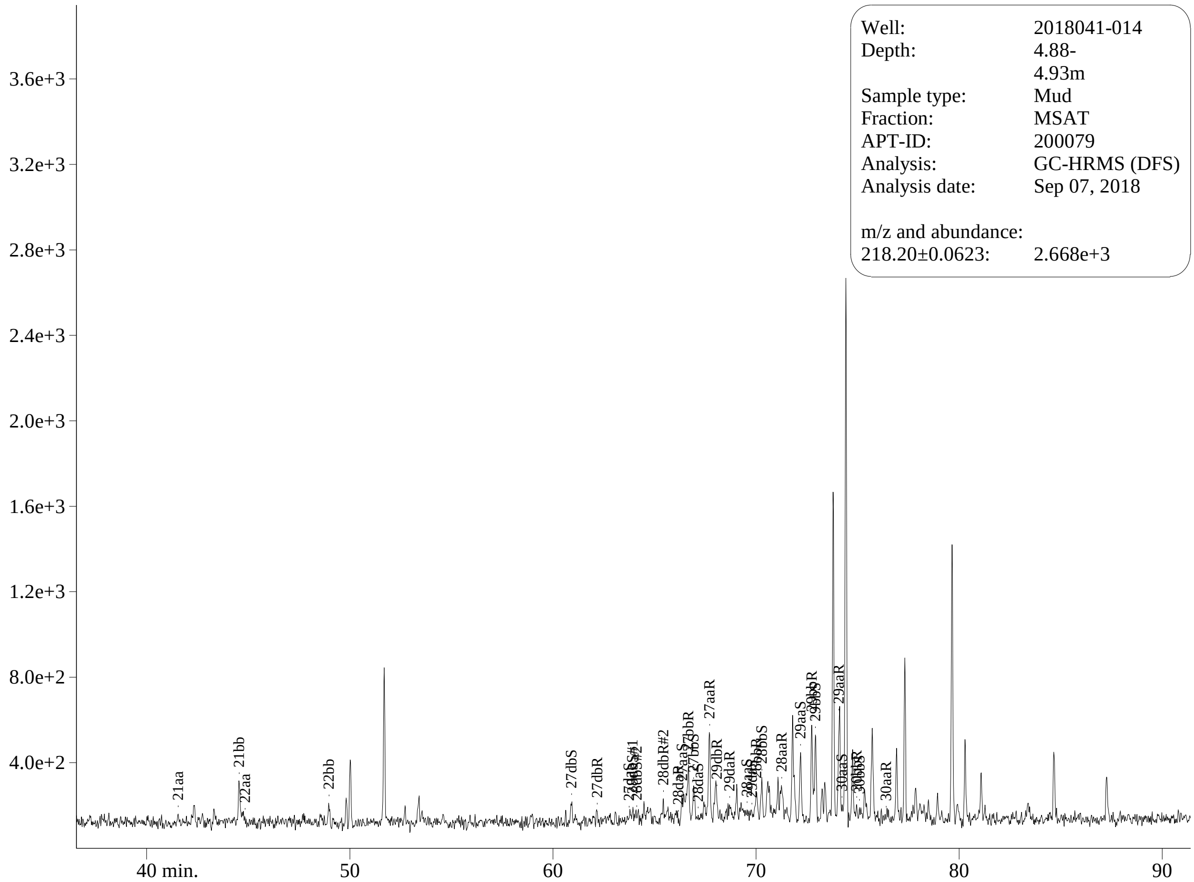

Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
259.24±0.0741: 6.992e+2
27dbS
27dbR
27bbR+29dbS
28dbS#1
28dbS#2
29dbR
27daS
27daR
28dbR#1
28dbR#2
28daR
28daS
29daR
29daS
650.0
600.0
550.0
500.0
450.0
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
40 min.
50
60
70
80
90

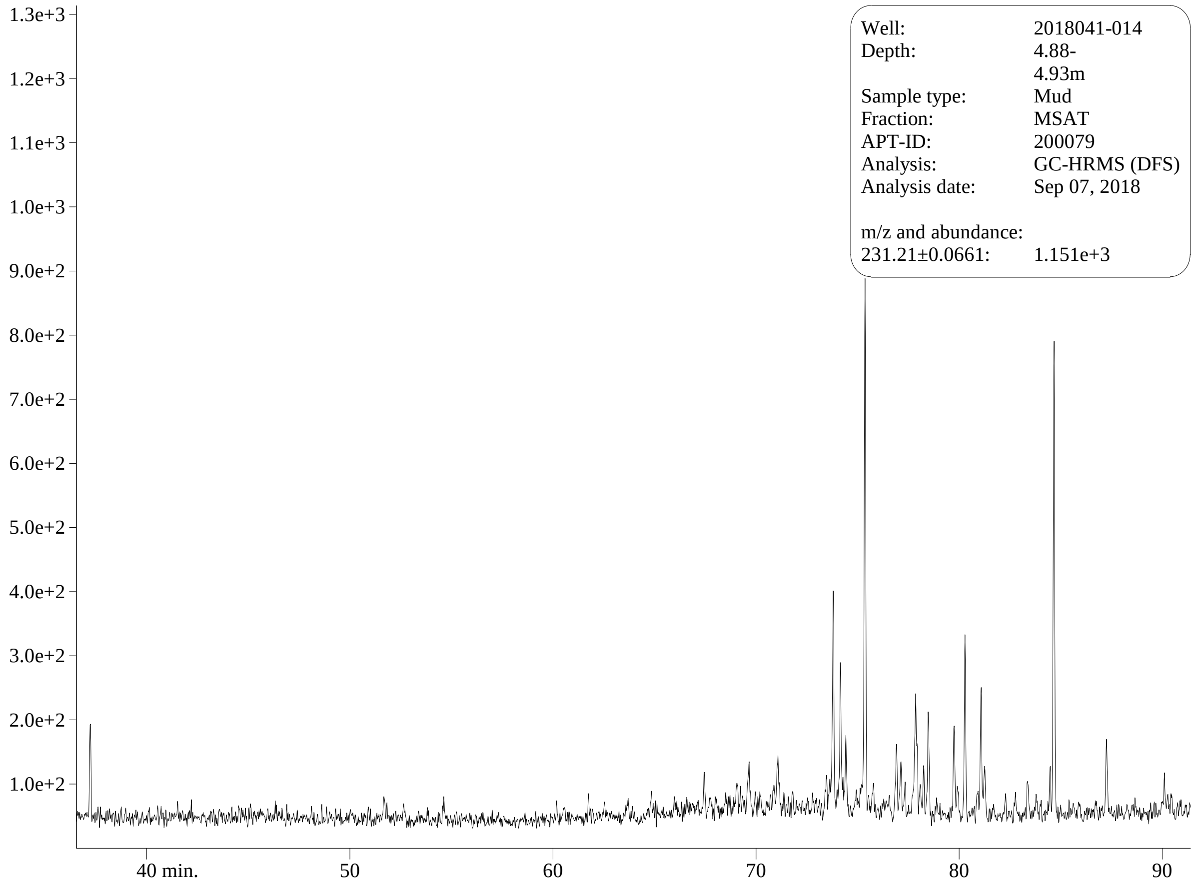

Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
177.16±0.0506: 1.314e+4
40 min.
50
60
70
80
90
1.3e+4
1.2e+4
1.1e+4
1.0e+4
9.0e+3
8.0e+3
7.0e+3
6.0e+3
5.0e+3
4.0e+3
3.0e+3
2.0e+3
1.0e+3
24/4
27Ts
25nor28ab
27Tm
25nor29ab
28ab
25nor30ab
29Ts
29ab
29ba
25nor31ab
30ba
31abS
31abR
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR

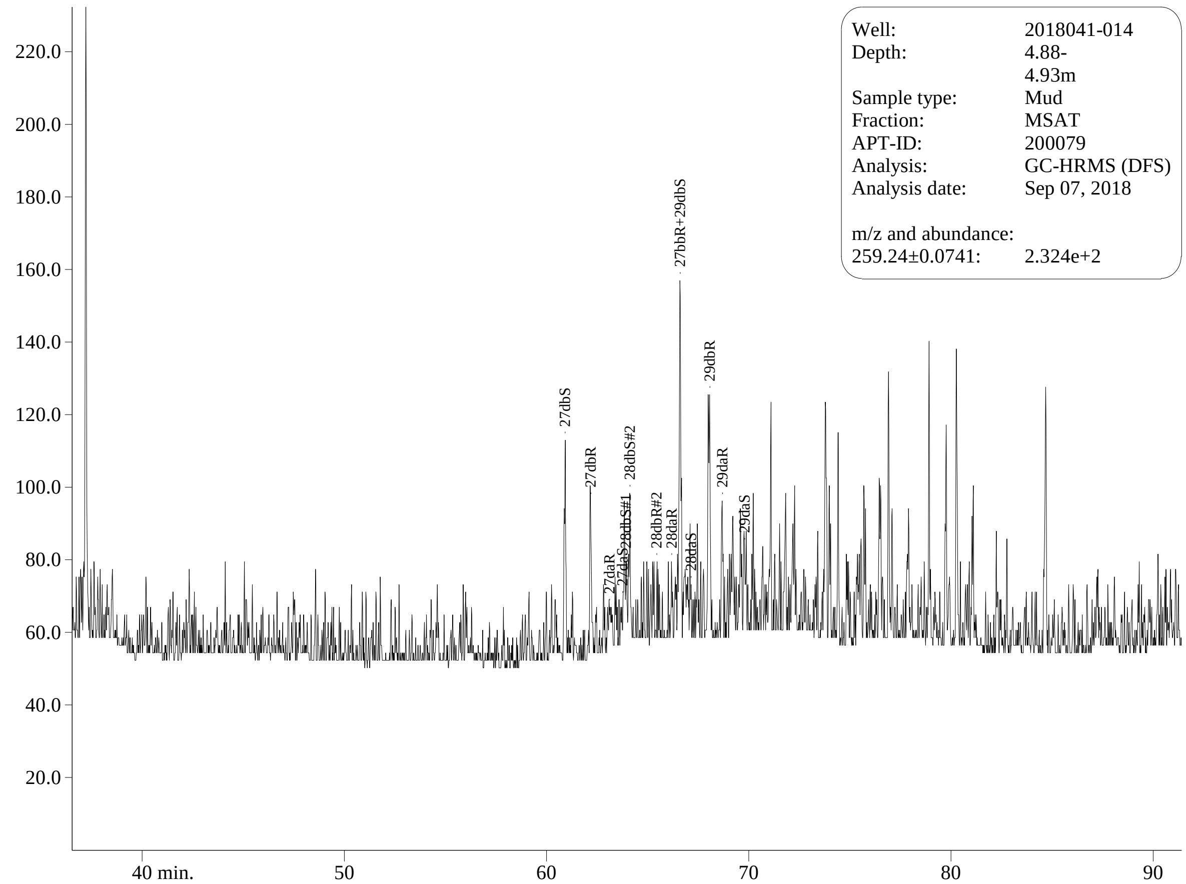

Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
191.18±0.0546: 2.032e+4
40 min.
50
60
70
80
90
2.0e+4
1.8e+4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
19/3
20/3
21/3
22/3
23/3
24/3
28/3R
28/3S
29/3R
29/3S
27Ts
27Tm
30/3R
30/3S
28ab
25nor30ab
29Ts
30d
29ab
29ba
30ab
30ba
30G
31abS
31abR
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR

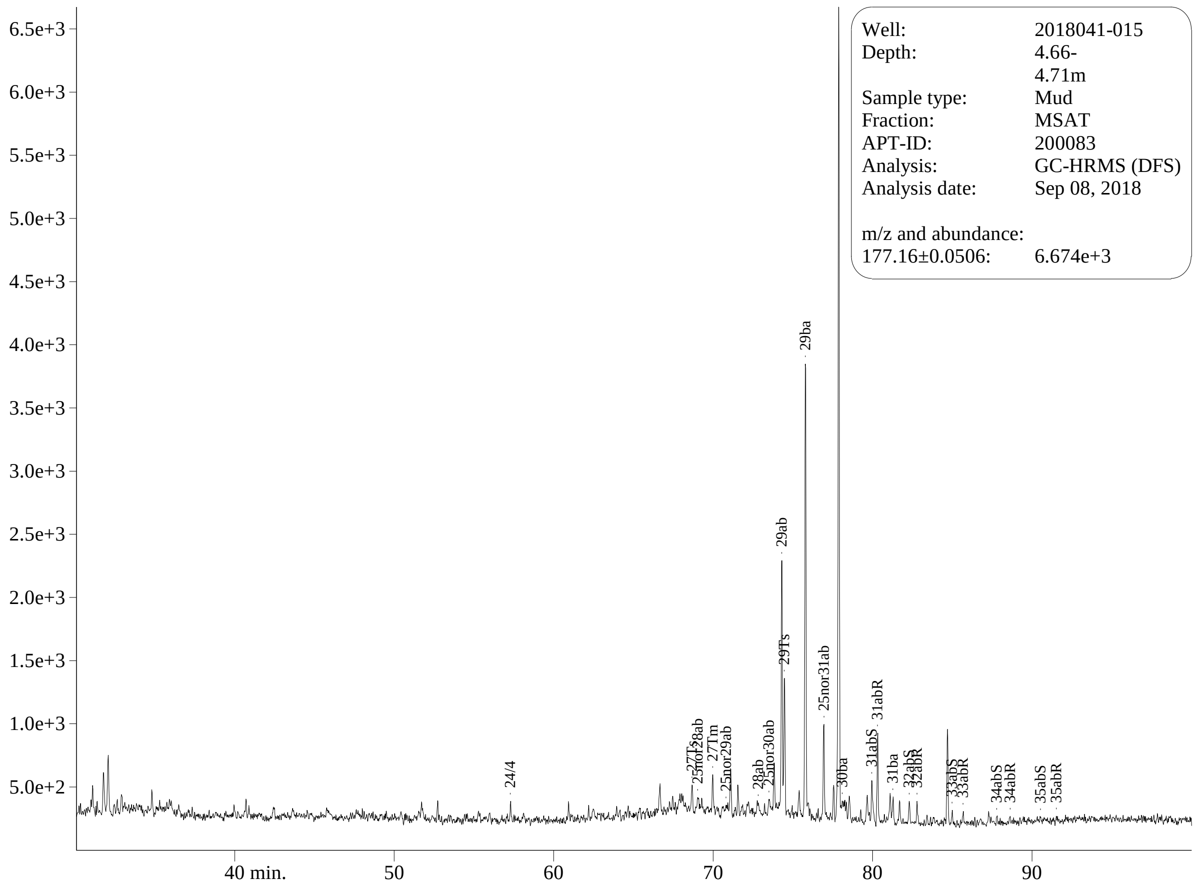

Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
205.20±0.0586: 2.737e+4
31abR
31ba
30ab
30ba
31abS
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR
40 min.
50
60
70
80
90

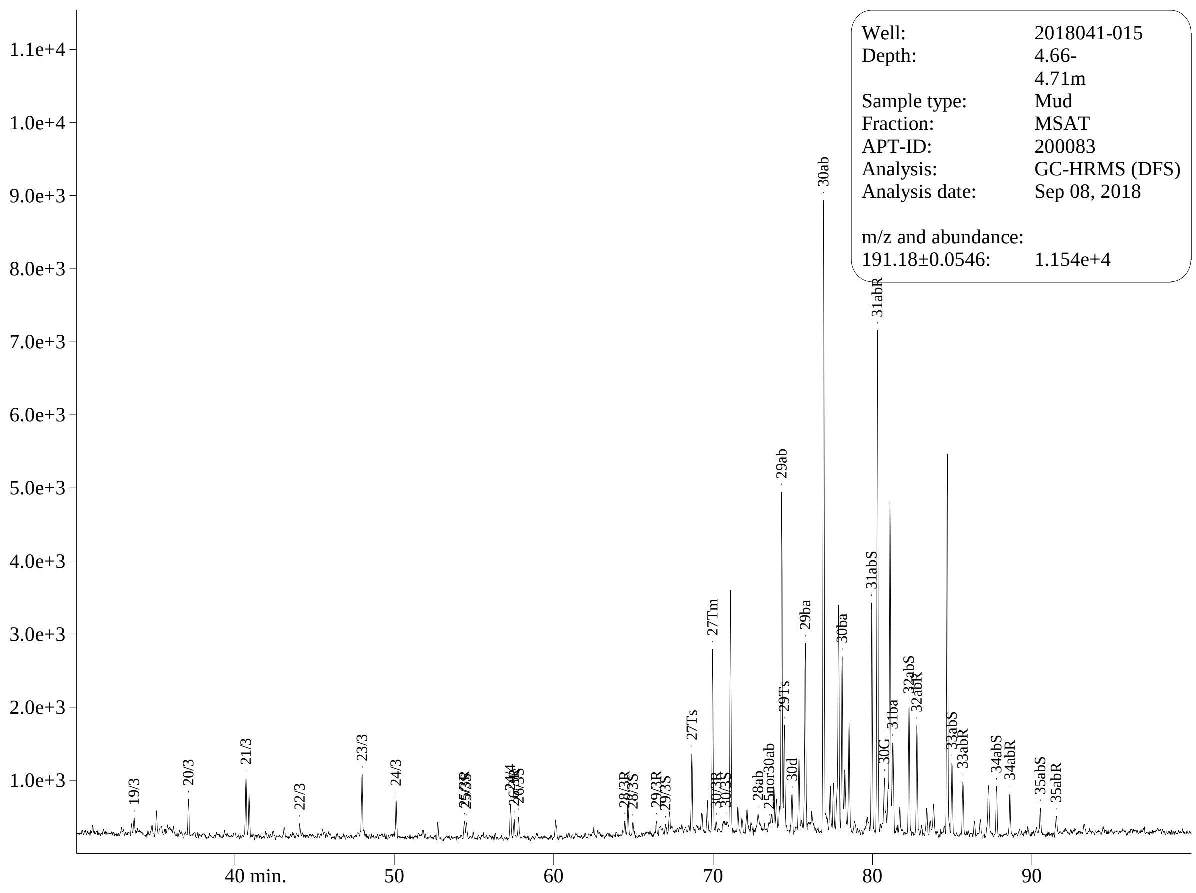

Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
217.20±0.0621: 8.302e+2
21aa
21bb
22aa
22bb
27dbS
27dbR
27daR
28dbR#2
28daR
27bbR+29dbS
27aaS
27bbS
28daS
27aaR
29dbR
29daR
28aaS
28aaR
29aaS
29bbR
29bbS
29aaR
30aaS
30aaR
40 min.
50
60
70
80
90

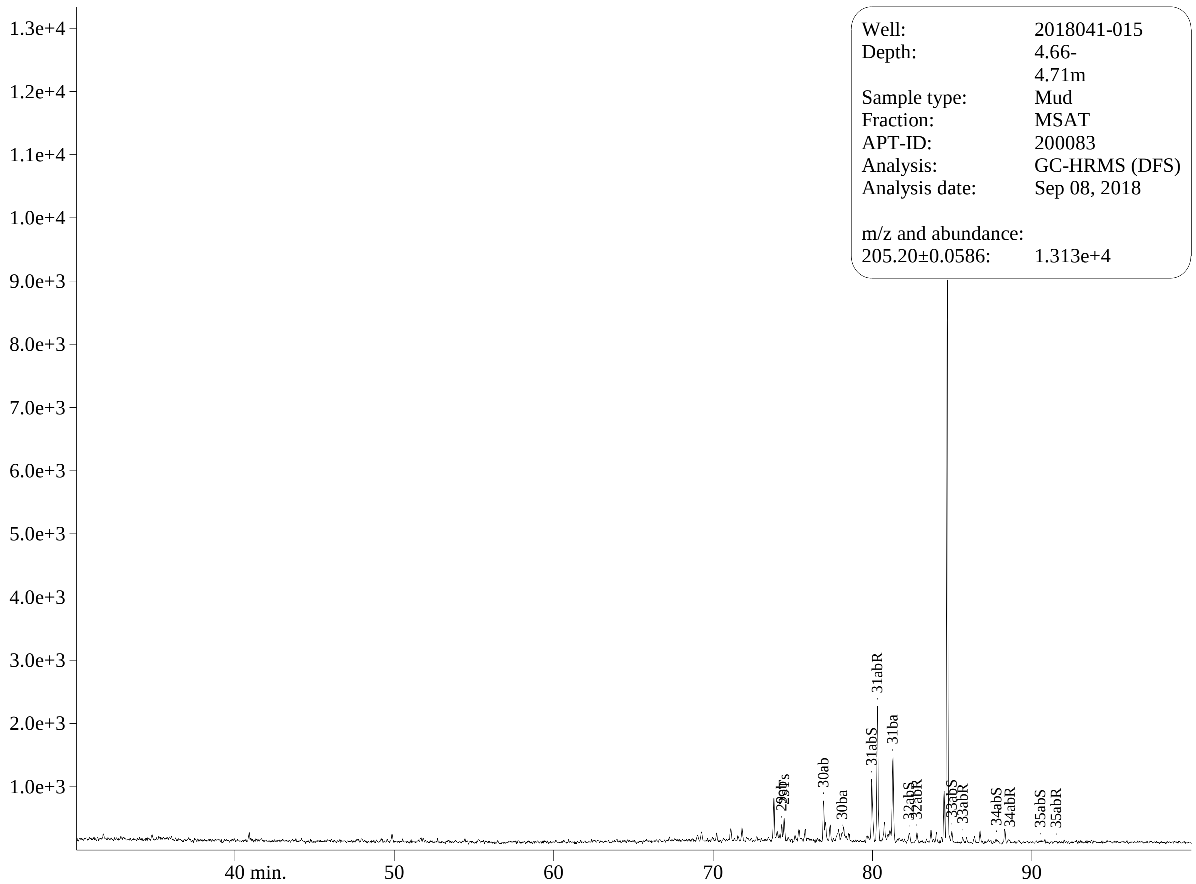

Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
218.20±0.0623: 2.668e+3
3.6e+3
3.2e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
40 min.
50
60
70
80
90
21aa
21bb
22aa
22bb
27dbS
27dbR
28dbR#2
27aaR
28aaR
29aaS
29aaR
30aaS
30aaR

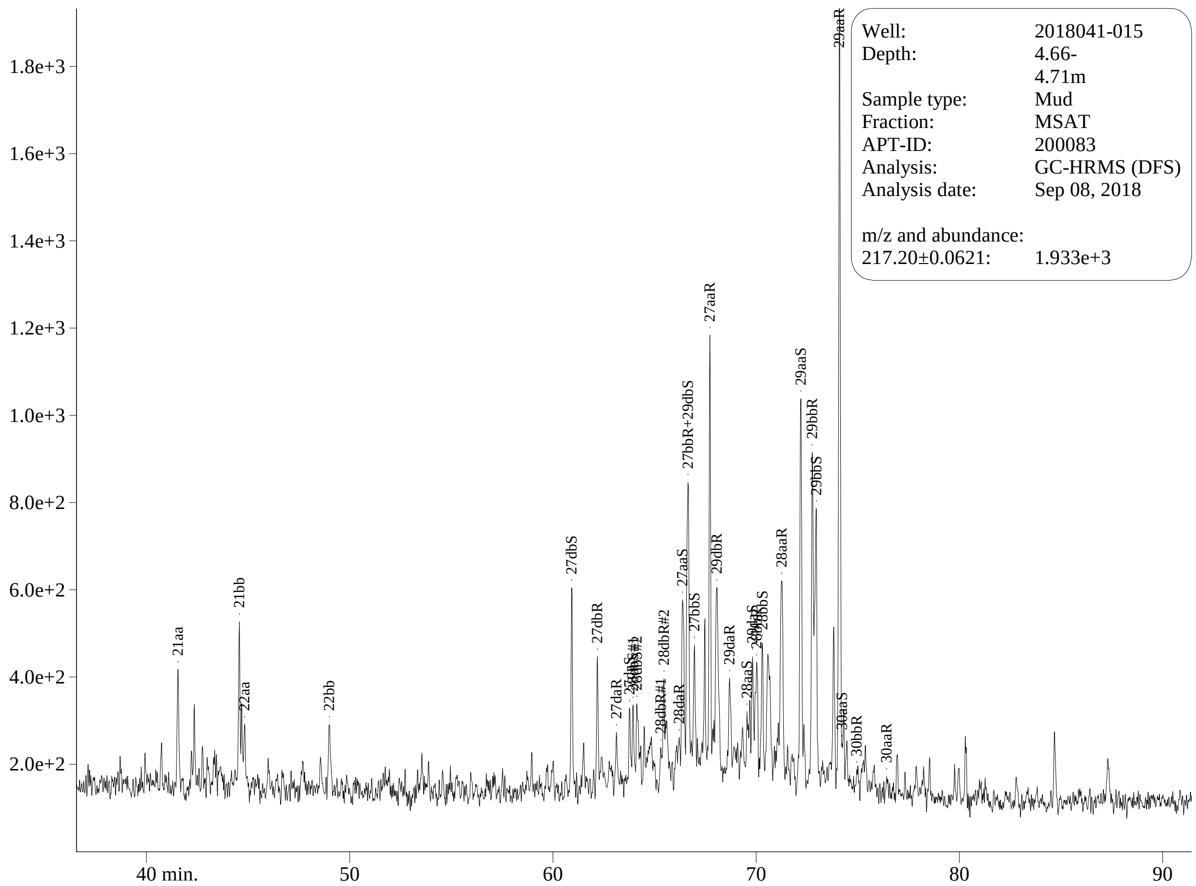

Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
231.21±0.0661: 1.151e+3
1.3e+3
1.2e+3
1.1e+3
1.0e+3
9.0e+2
8.0e+2
7.0e+2
6.0e+2
5.0e+2
4.0e+2
3.0e+2
2.0e+2
1.0e+2
40 min.
50
60
70
80
90

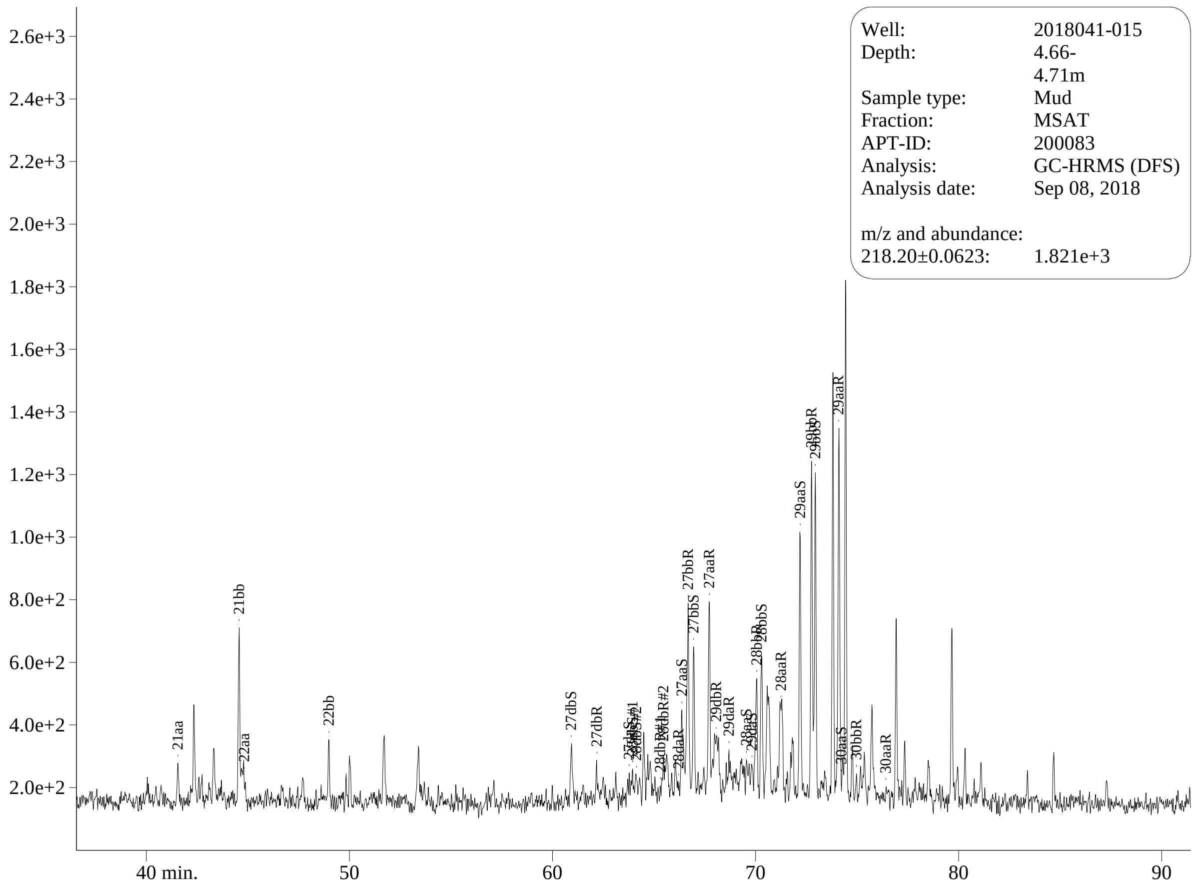

Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-HRMS (DFS)
Analysis date: Sep 07, 2018
m/z and abundance:
259.24±0.0741: 2.324e+2
220.0
200.0
180.0
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
40 min.
50
60
70
80
90
27dbS
27dbR
27daR
27daS
28dbS#1
28dbS#2
28dbR#2
28daR
28daS
27bbR+29dbS
29dbR
29daR
29daS

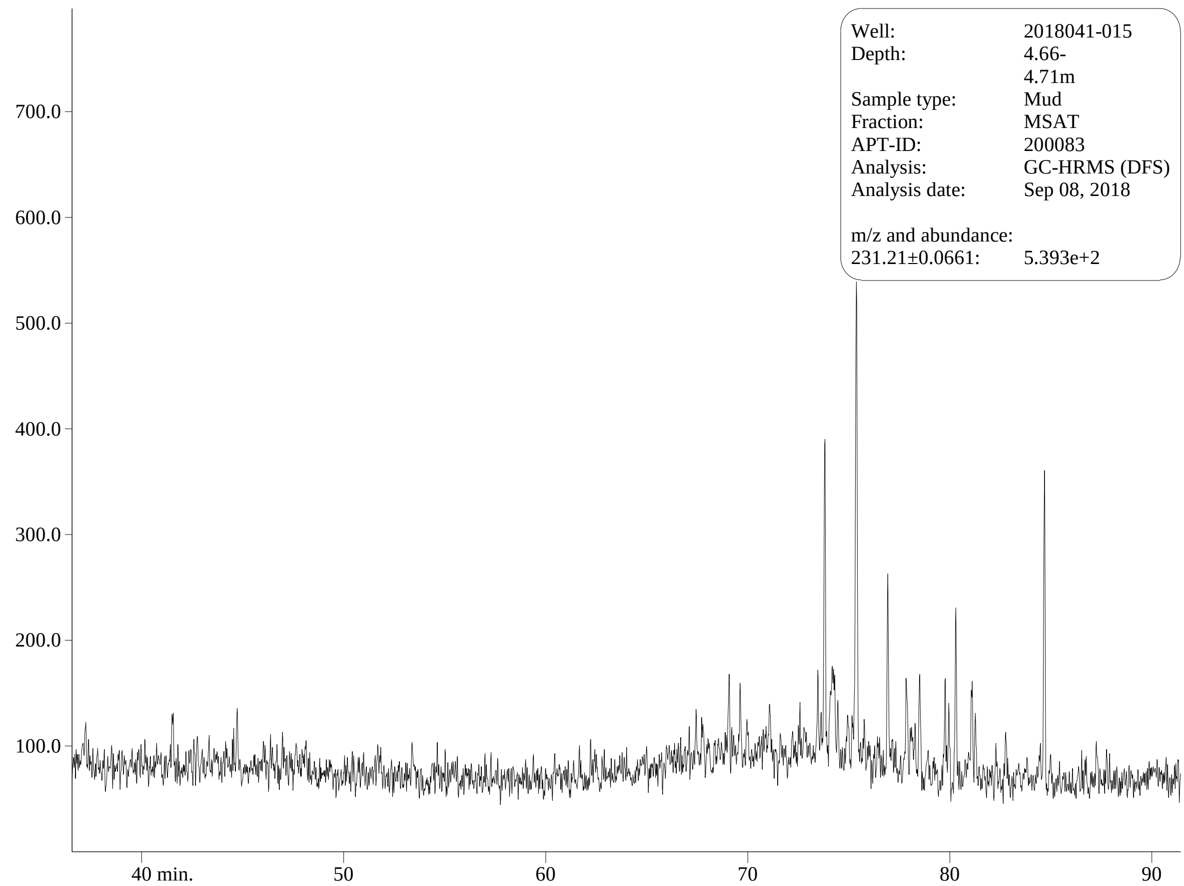

Well: 2018041-015
Depth: 4.66-4.71m
Sample type: Mud
Fraction: MSAT
APT-ID: 200083
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
177.16±0.0506: 6.674e+3
29ba
29ab
29Ts
25nor31ab
31abR
31abS
31ba
32abS
32abR
30ba
33abS
33abR
34abS
34abR
35abS
35abR
24/4
27Ts
25nor28ab
27Tm
25nor29ab
28ab
25nor30ab
40 min.
50
60
70
80
90

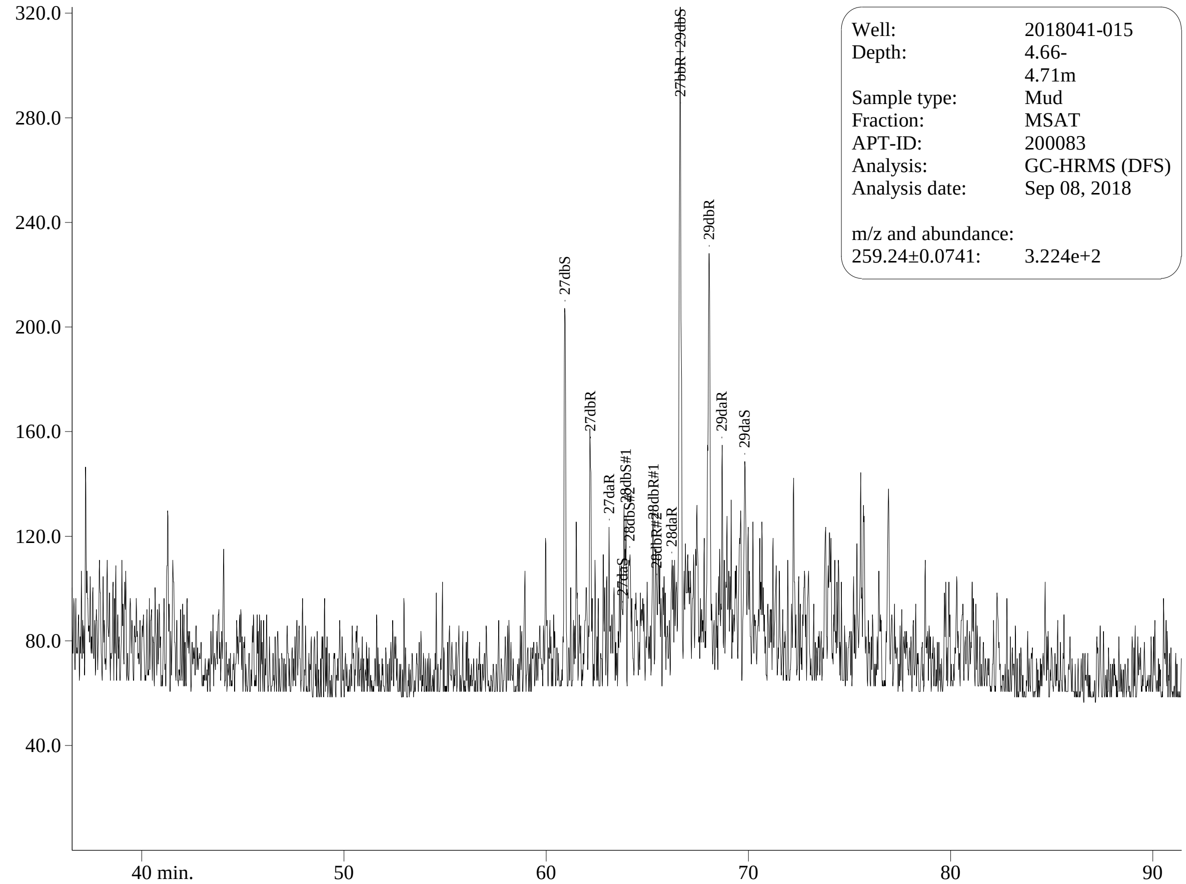

Well: 2018041-015
Depth: 4.66-4.71m
Sample type: Mud
Fraction: MSAT
APT-ID: 200083
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
191.18±0.0546: 1.154e+4
30ab
31abR
29ab
31abS
27Tm
29ba
30ba
29Ts
27Ts
32abS
32abR
31ba
30G
33abS
33abR
34abS
34abR
35abS
35abR
19/3
20/3
21/3
22/3
23/3
24/3
28ab
25nor30ab
30d
40 min.
50
60
70
80
90

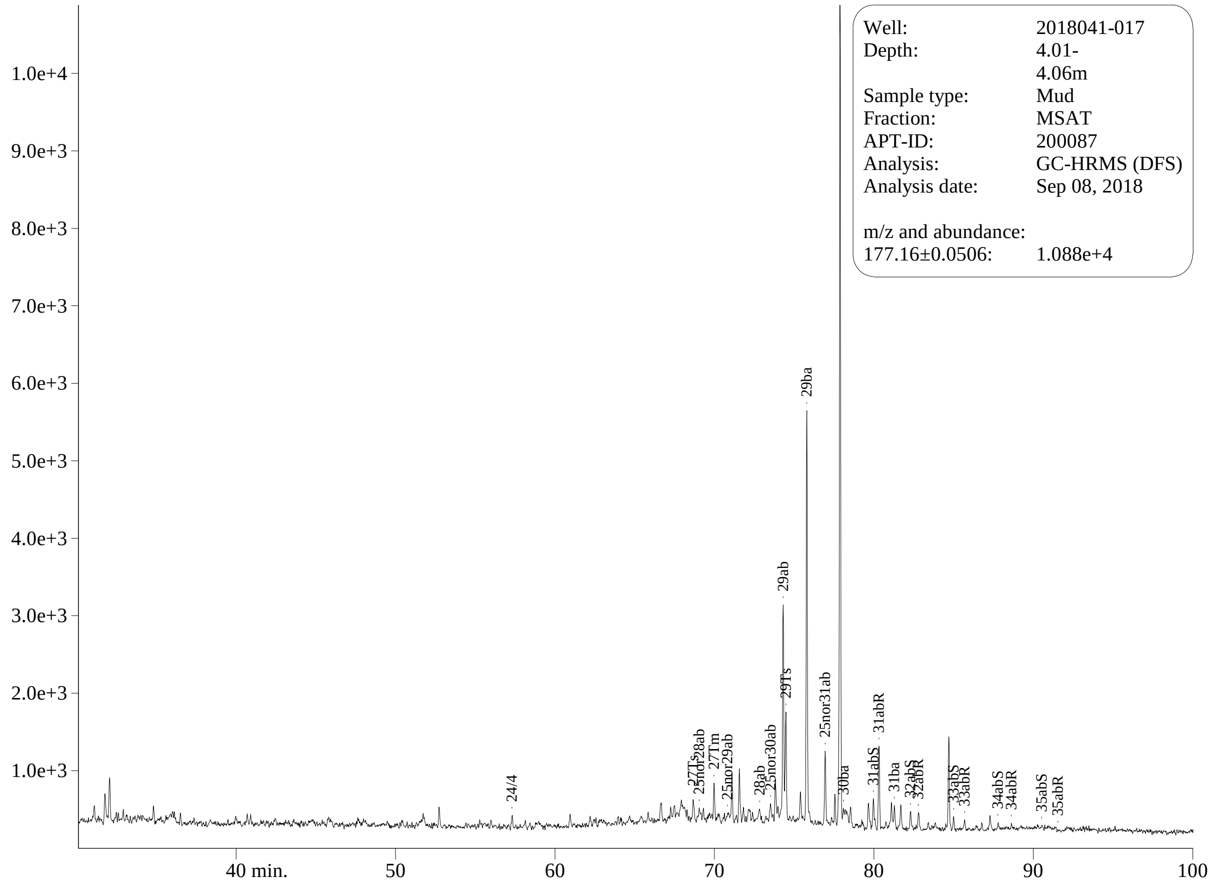

Well: 2018041-015
Depth: 4.66-4.71m
Sample type: Mud
Fraction: MSAT
APT-ID: 200083
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
205.20±0.0586: 1.313e+4
1.3e+4
1.2e+4
1.1e+4
1.0e+4
9.0e+3
8.0e+3
7.0e+3
6.0e+3
5.0e+3
4.0e+3
3.0e+3
2.0e+3
1.0e+3
40 min.
50
60
70
80
90
30ab
30ba
31abS
31abR
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR

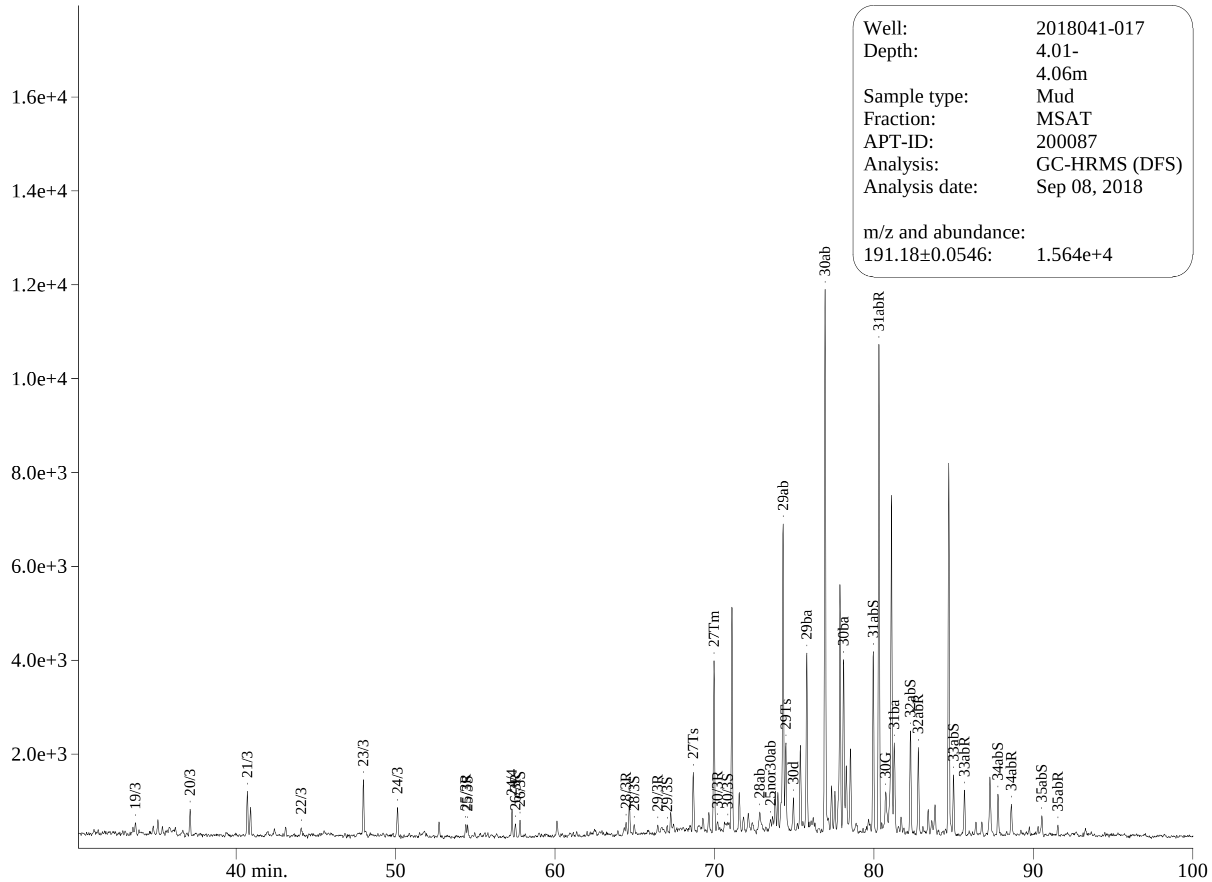

Well: 2018041-015
Depth: 4.66-4.71m
Sample type: Mud
Fraction: MSAT
APT-ID: 200083
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
217.20±0.0621: 1.933e+3
1.8e+3
1.6e+3
1.4e+3
1.2e+3
1.0e+3
8.0e+2
6.0e+2
4.0e+2
2.0e+2
40 min.
50
60
70
80
90
21aa
21bb
22aa
22bb
27dbS
27dbR
27daR
28dbR#2
28dbR#1
28daR
27aaS
27bbR+29dbS
27bbS
27aaR
29dbR
29daR
28aaS
28bbS
28aaR
29aaS
29bbR
29bbS
29aaR
30aaS
30bbR
30aaR

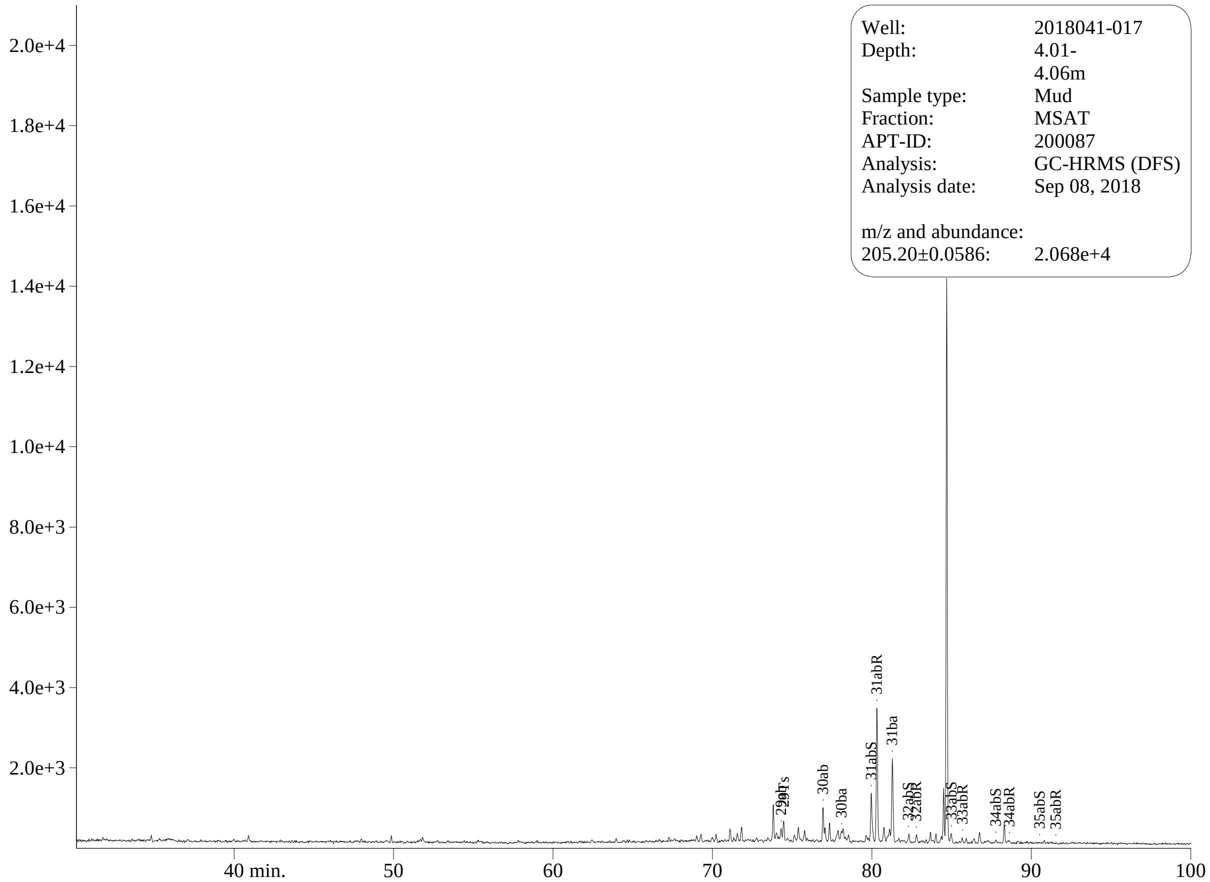

Well: 2018041-015
Depth: 4.66-4.71m
Sample type: Mud
Fraction: MSAT
APT-ID: 200083
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
218.20±0.0623: 1.821e+3
21aa
21bb
22aa
22bb
27dbS
27dbR
27bbR
27bbS
27aaS
27aaR
28aaR
29aaS
29aaR
29dbR
29daR
28bbS
28aaS
30aaS
30bbR
30aaR
40 min.
50
60
70
80
90

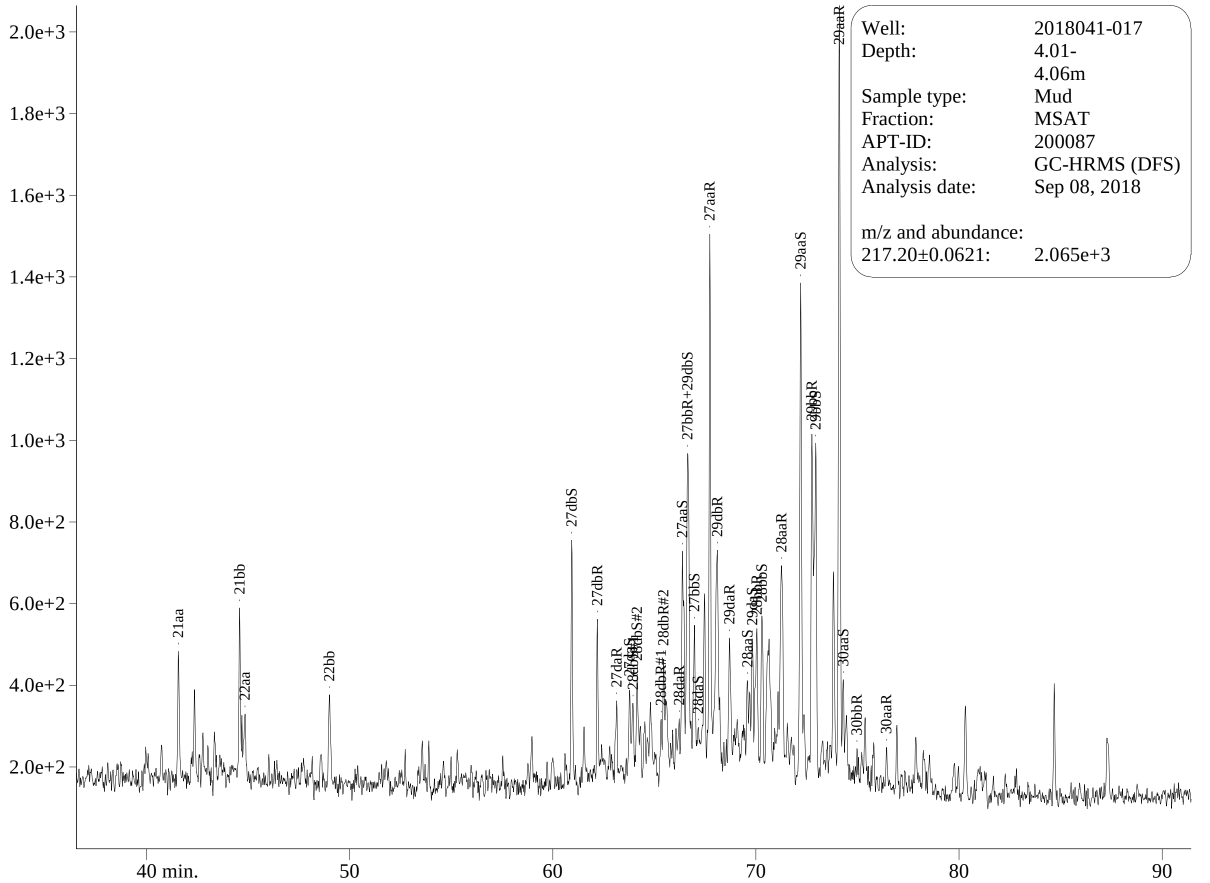

Well: 2018041-015
Depth: 4.66-4.71m
Sample type: Mud
Fraction: MSAT
APT-ID: 200083
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
231.21±0.0661: 5.393e+2
40 min.
50
60
70
80
90

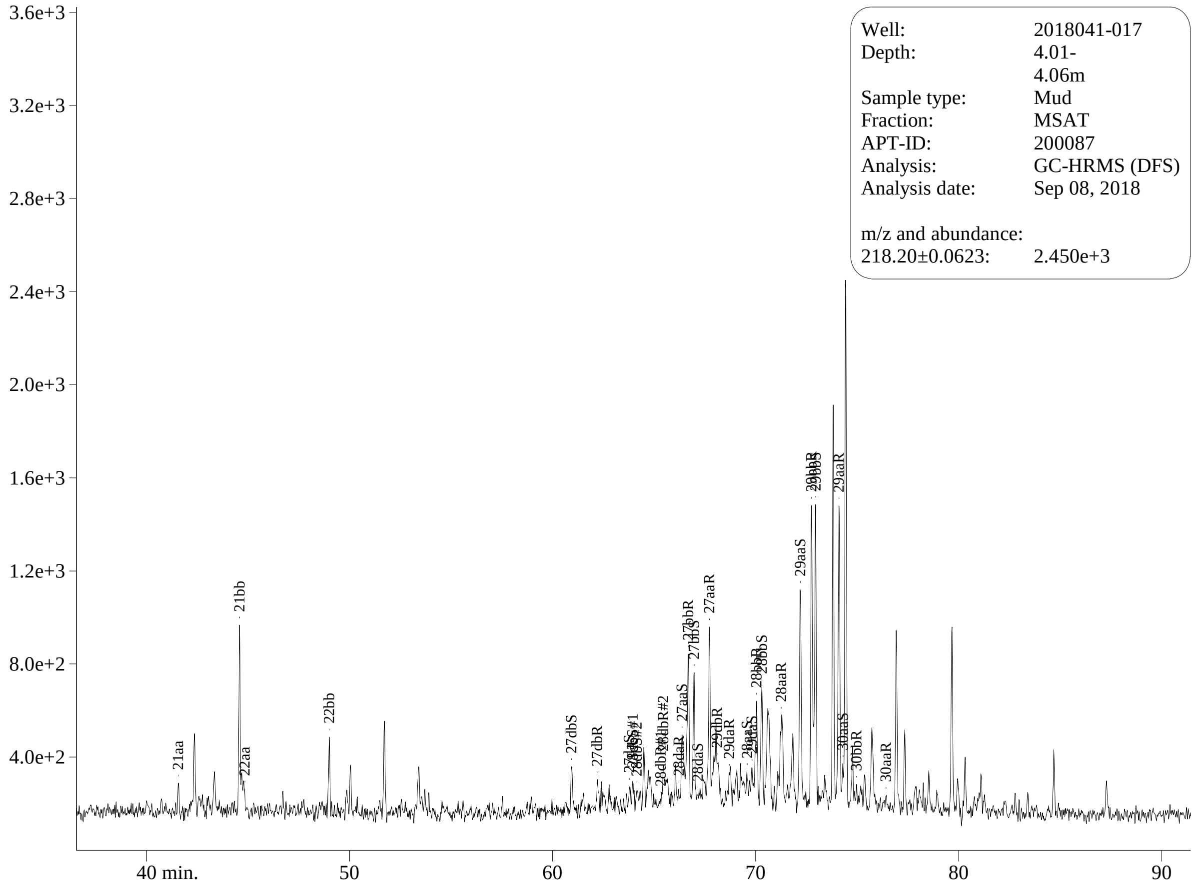

320.0
280.0
240.0
200.0
160.0
120.0
80.0
40.0
40 min.
50
60
70
80
90
27dbS
27dbR
27daR
27daS
28dbS#1
28dbS#2
28dbR#1
28dbR#2
28daR
27bbR+29dbS
29dbR
29daR
29daS
Well: 2018041-015
Depth: 4.66-4.71m
Sample type: Mud
Fraction: MSAT
APT-ID: 200083
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
259.24±0.0741: 3.224e+2

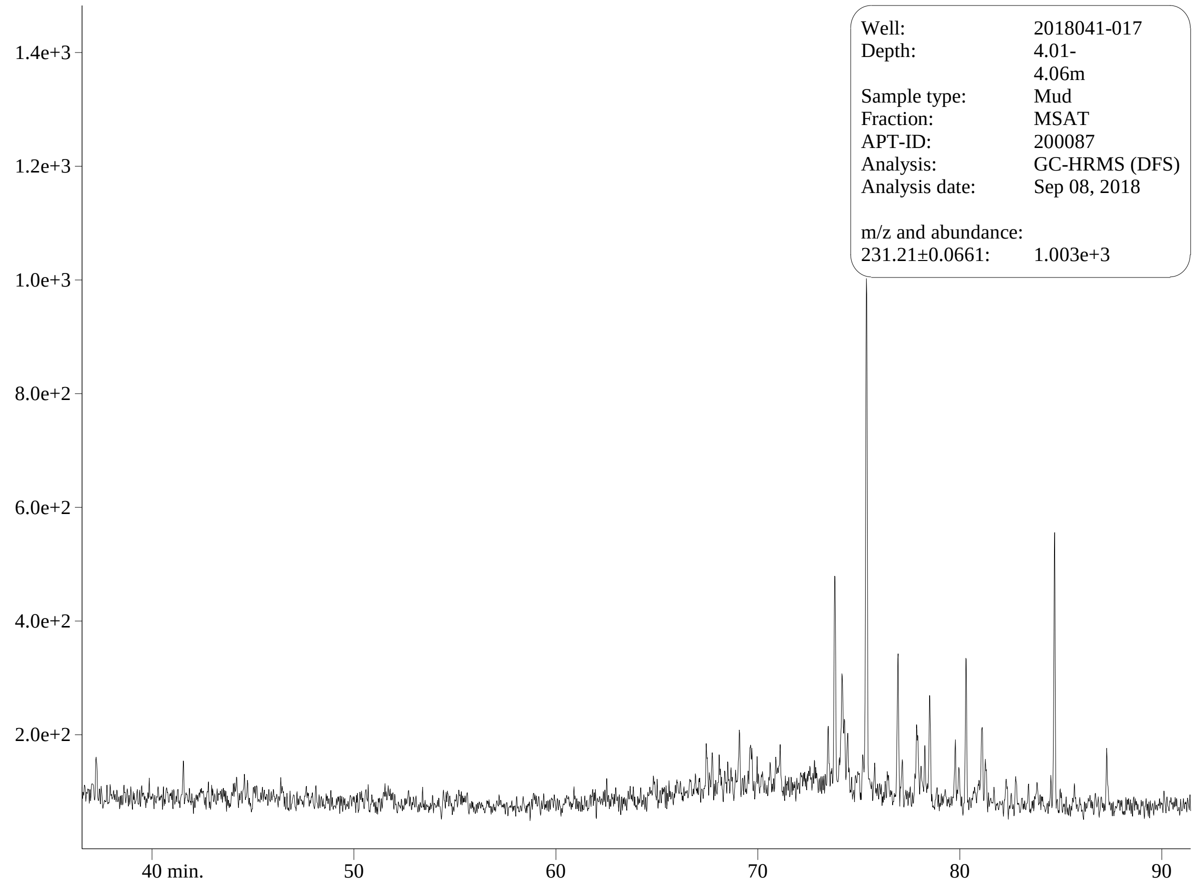

Well: 2018041-017
Depth: 4.01-4.06m
Sample type: Mud
Fraction: MSAT
APT-ID: 200087
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
177.16±0.0506: 1.088e+4
1.0e+4
9.0e+3
8.0e+3
7.0e+3
6.0e+3
5.0e+3
4.0e+3
3.0e+3
2.0e+3
1.0e+3
40 min.
50
60
70
80
90
100
24/4
27Ts
25nor28ab
27Tm
25nor29ab
28ab
25nor30ab
29ab
29Ts
29ba
25nor31ab
30ba
31abS
31abR
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR

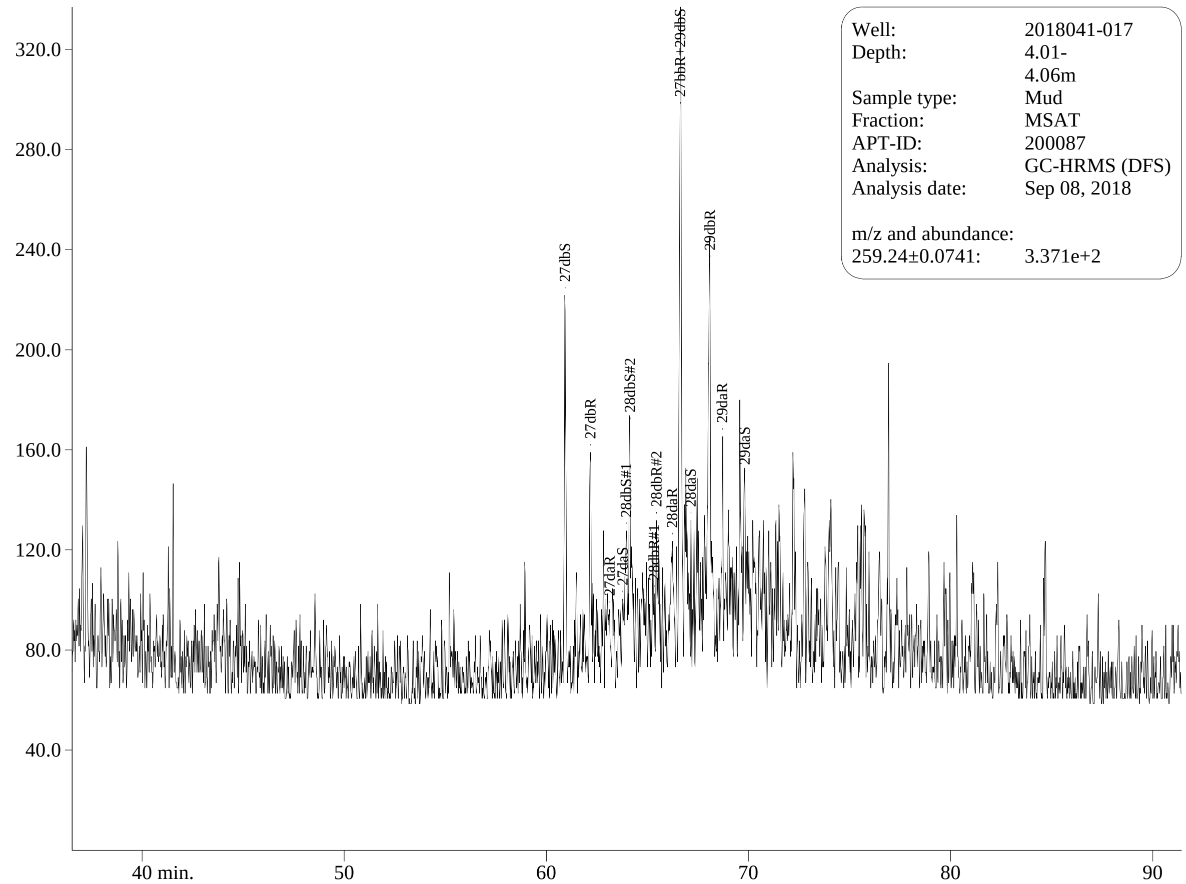

Well: 2018041-017
Depth: 4.01-4.06m
Sample type: Mud
Fraction: MSAT
APT-ID: 200087
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
191.18±0.0546: 1.564e+4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
40 min.
50
60
70
80
90
100
19/3
20/3
21/3
22/3
23/3
24/3
25/3R
25/3S
24/4
26/3R
26/3S
28/3R
28/3S
29/3R
29/3S
27Ts
27Tm
30/3R
30/3S
28ab
25nor30ab
29ab
29Ts
30d
29ba
30ab
30ba
31abS
31abR
30G
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR


Well: 2018041-017
Depth: 4.01-4.06m
Sample type: Mud
Fraction: MSAT
APT-ID: 200087
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
205.20±0.0586: 2.068e+4
2.0e+4
1.8e+4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
40 min.
50
60
70
80
90
100
31abR
31ba
31abS
30ab
30ba
29Ts
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR

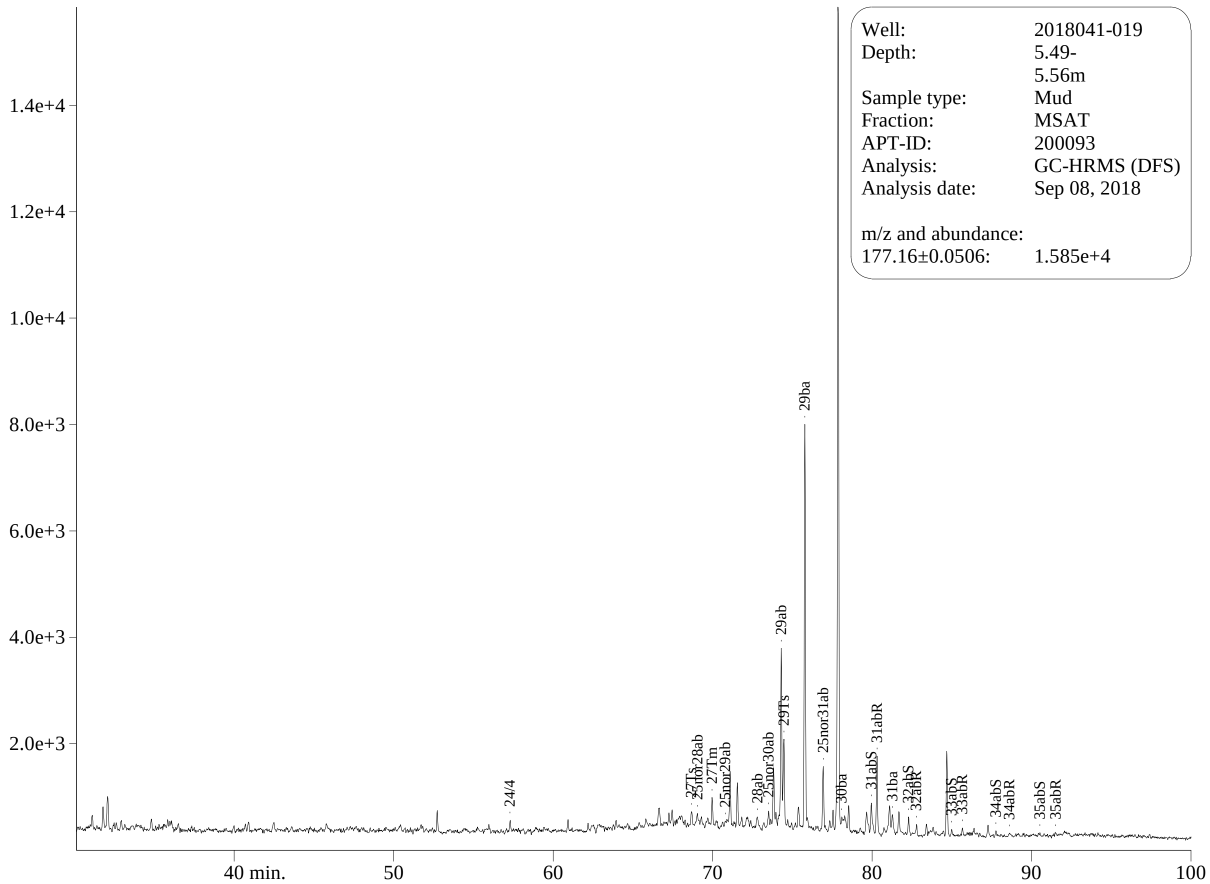

Well: 2018041-017
Depth: 4.01-4.06m
Sample type: Mud
Fraction: MSAT
APT-ID: 200087
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
217.20±0.0621: 2.065e+3
2.0e+3
1.8e+3
1.6e+3
1.4e+3
1.2e+3
1.0e+3
8.0e+2
6.0e+2
4.0e+2
2.0e+2
40 min.
50
60
70
80
90
29aaR
27aaR
29aaS
27bbR+29dbS
27dbS
27aaS
29dbR
28aaR
21bb
21aa
22aa
22bb
27dbR
27daR
28dbR#1
28dbR#2
28dbS#2
28daR
28daS
27bbS
29daR
28aaS
30aaS
30bbR
30aaR


Well: 2018041-017
Depth: 4.01-4.06m
Sample type: Mud
Fraction: MSAT
APT-ID: 200087
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
218.20±0.0623: 2.450e+3
21aa
21bb
22aa
22bb
27dbS
27dbR
27aaS
27bbR
27bbS
27aaR
28aaS
28aaR
29aaS
29aaR
30aaS
30bbR
30aaR
40 min.
50
60
70
80
90

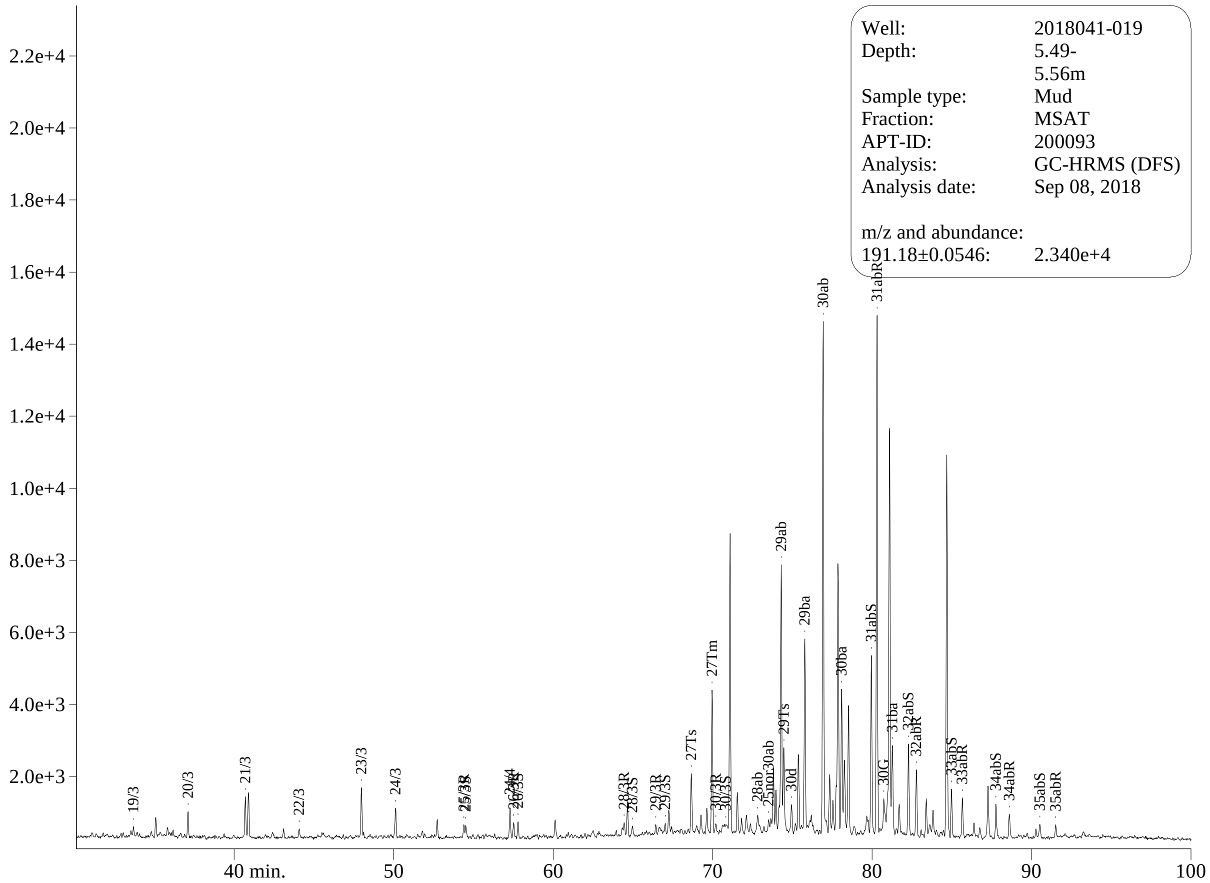

Well: 2018041-017
Depth: 4.01-4.06m
Sample type: Mud
Fraction: MSAT
APT-ID: 200087
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
231.21±0.0661: 1.003e+3
40 min.
50
60
70
80
90



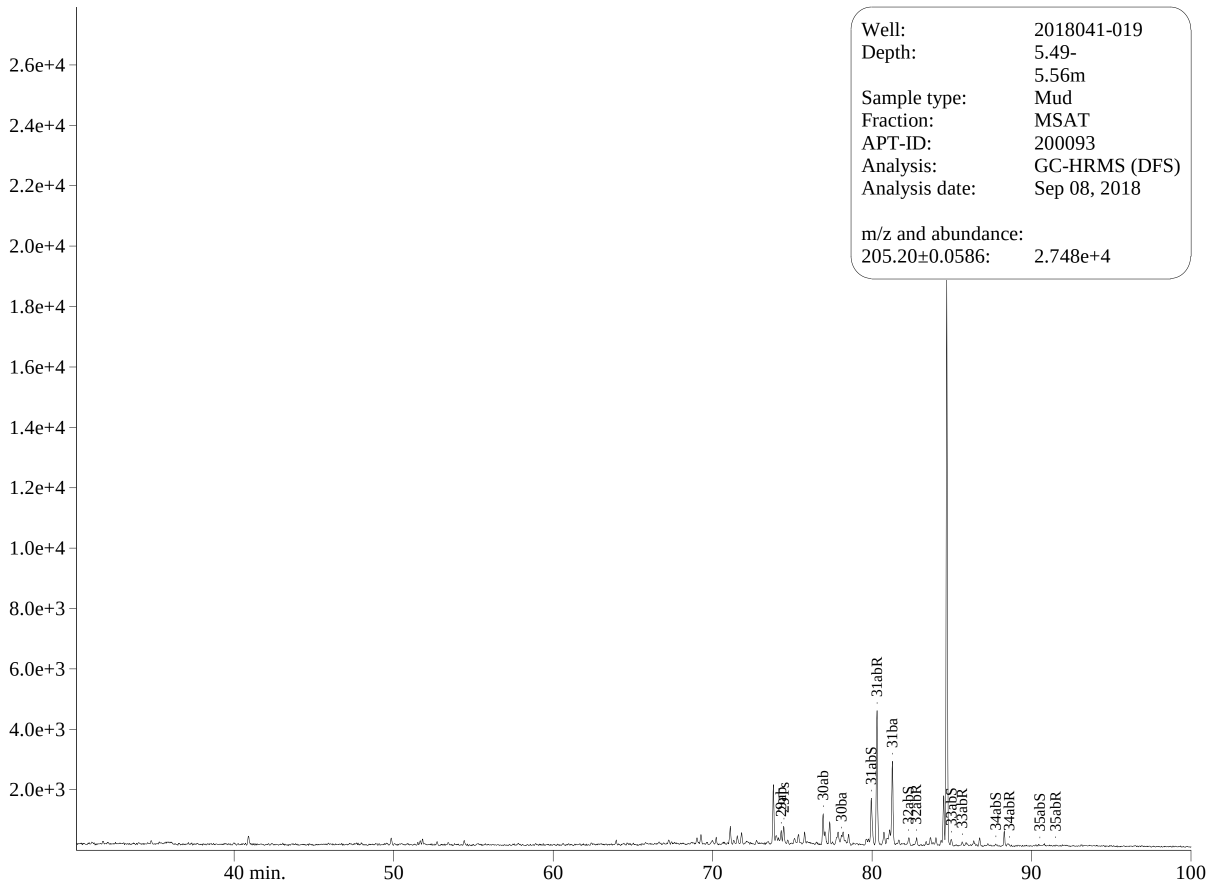
Well: 2018041-017
Depth: 4.01-4.06m
Sample type: Mud
Fraction: MSAT
APT-ID: 200087
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
259.24±0.0741: 3.371e+2
27dbS
27dbR
27daR
27daS
28dbS#1
28dbS#2
28dbR#1
28dbR#2
28daR
27bbR+29dbS
28daS
29dbR
29daR
29daS
320.0
280.0
240.0
200.0
160.0
120.0
80.0
40.0
40 min.
50
60
70
80
90

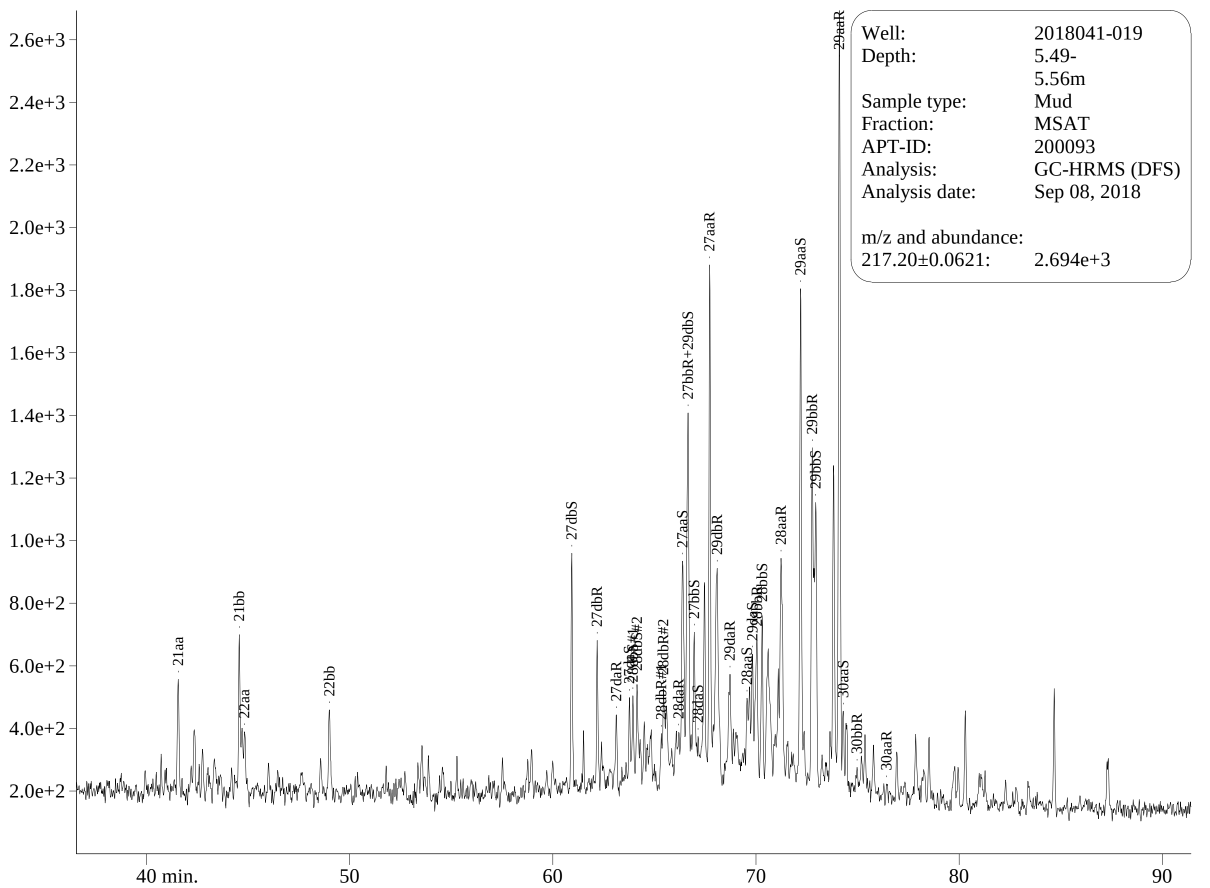


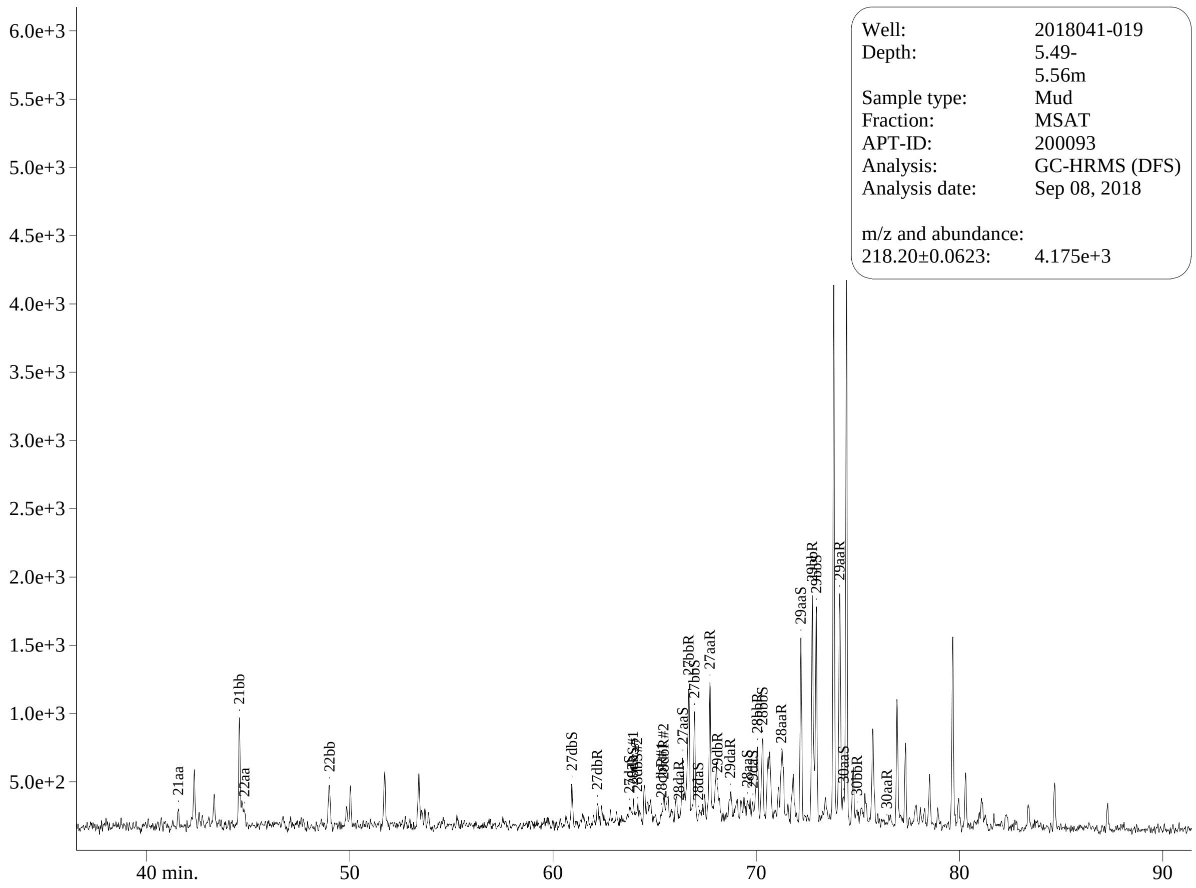
Well: 2018041-019
Depth: 5.49-5.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200093
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
177.16±0.0506: 1.585e+4
29ba
29ab
29Ts
25nor31ab
31abR
31abS
30ba
24/4
40 min.
50
60
70
80
90
100

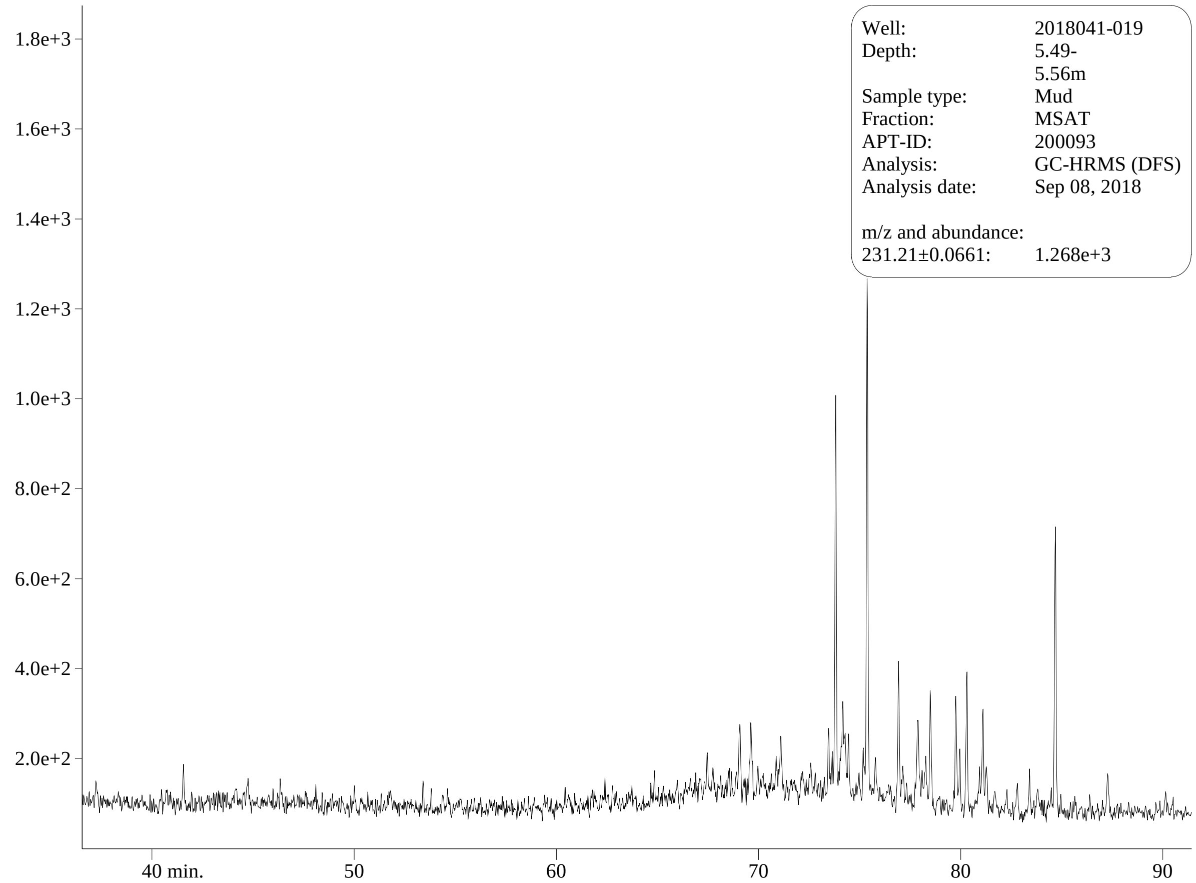


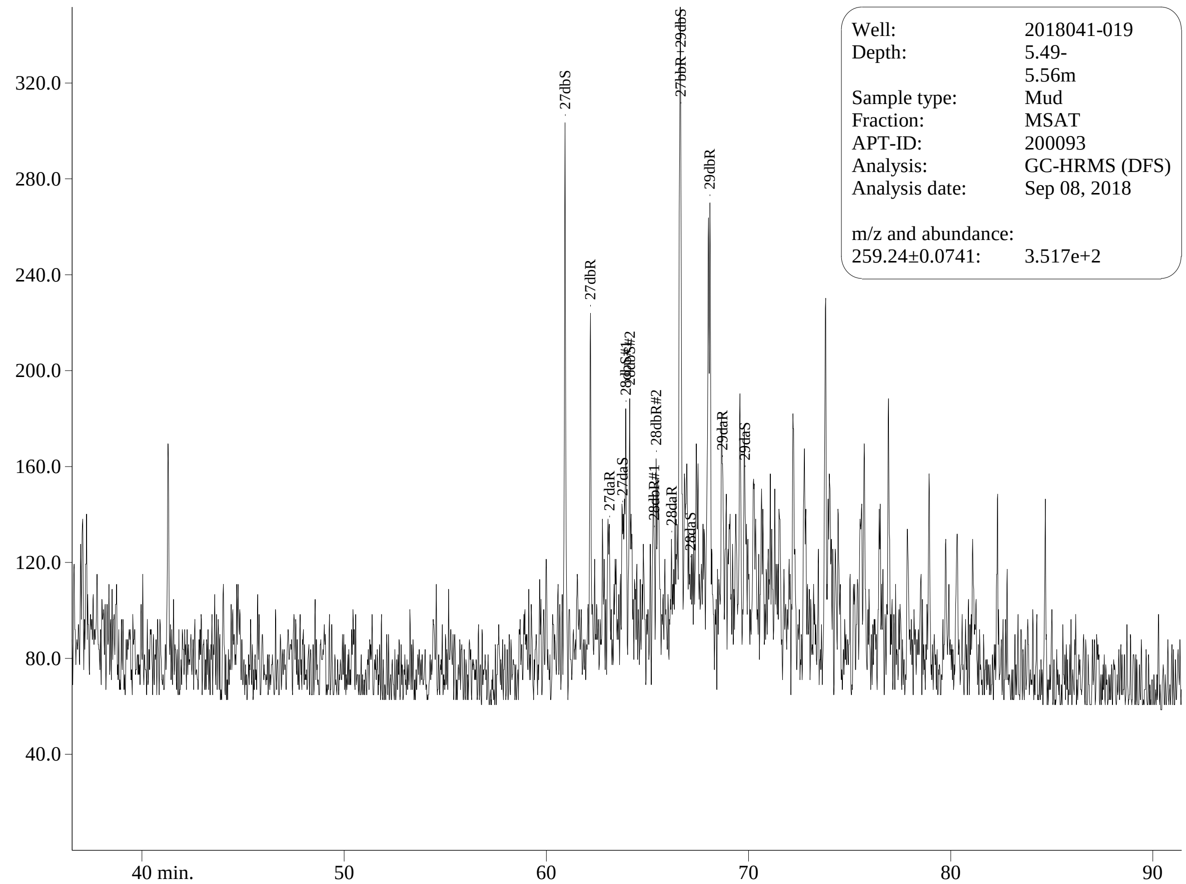
Well: 2018041-019
Depth: 5.49-5.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200093
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
191.18±0.0546: 2.340e+4
30ab
31abR
29ab
29ba
31abS
30ba
27Tm
27Ts
29Ts
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR
19/3
20/3
21/3
22/3
23/3
24/3
40 min.
50
60
70
80
90
100


Well: 2018041-019
Depth: 5.49-5.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200093
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
205.20±0.0586: 2.748e+4
31abR
31ba
31abS
30ab
30ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR
40 min.
50
60
70
80
90
100

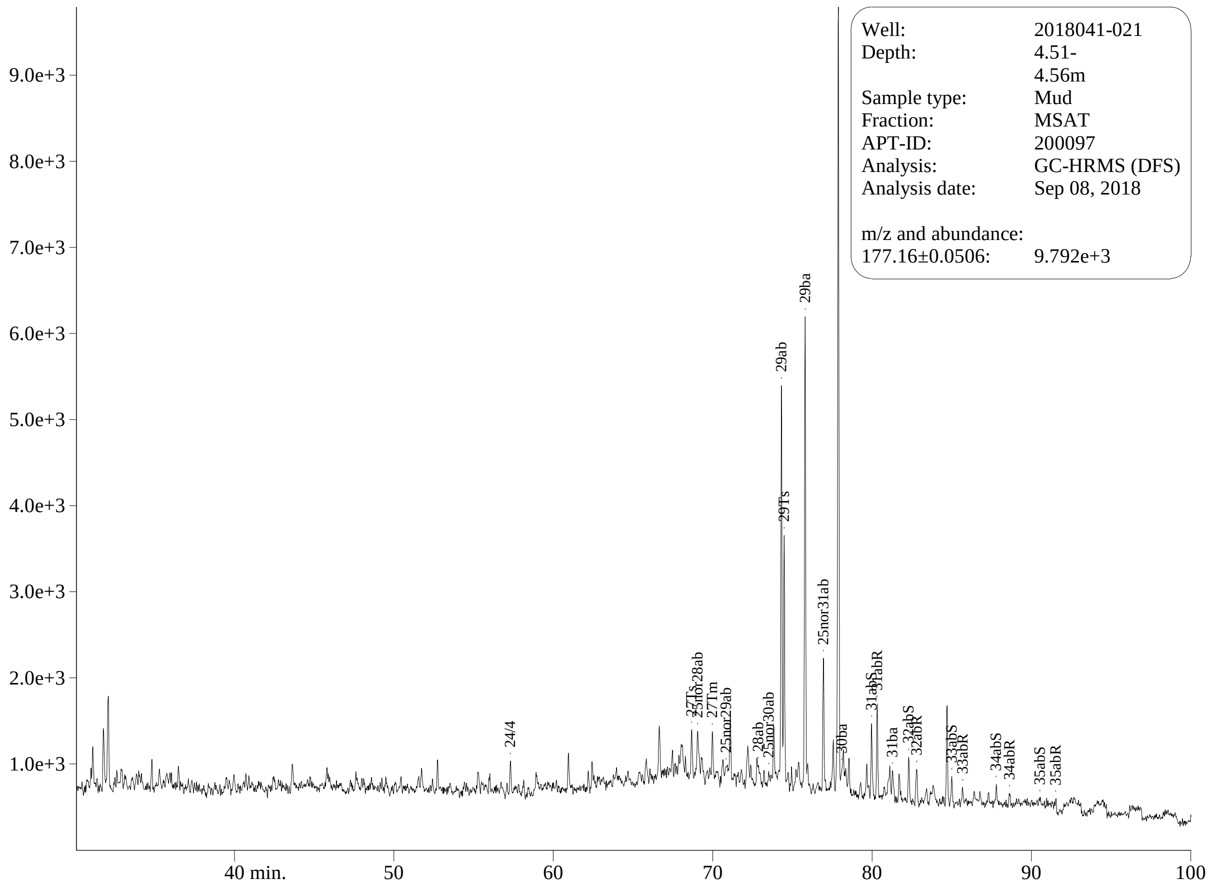

Well: 2018041-019
Depth: 5.49-5.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200093
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
217.20±0.0621: 2.694e+3
21aa
21bb
22aa
22bb
27dbS
27dbR
27daR
27bbR+29dbS
27aaS
27bbS
27aaR
28daR
28daS
29dbR
29daR
28aaS
28aaR
29aaS
29bbR
29bbS
29aaR
30aaS
30bbR
30aaR
40 min.
50
60
70
80
90

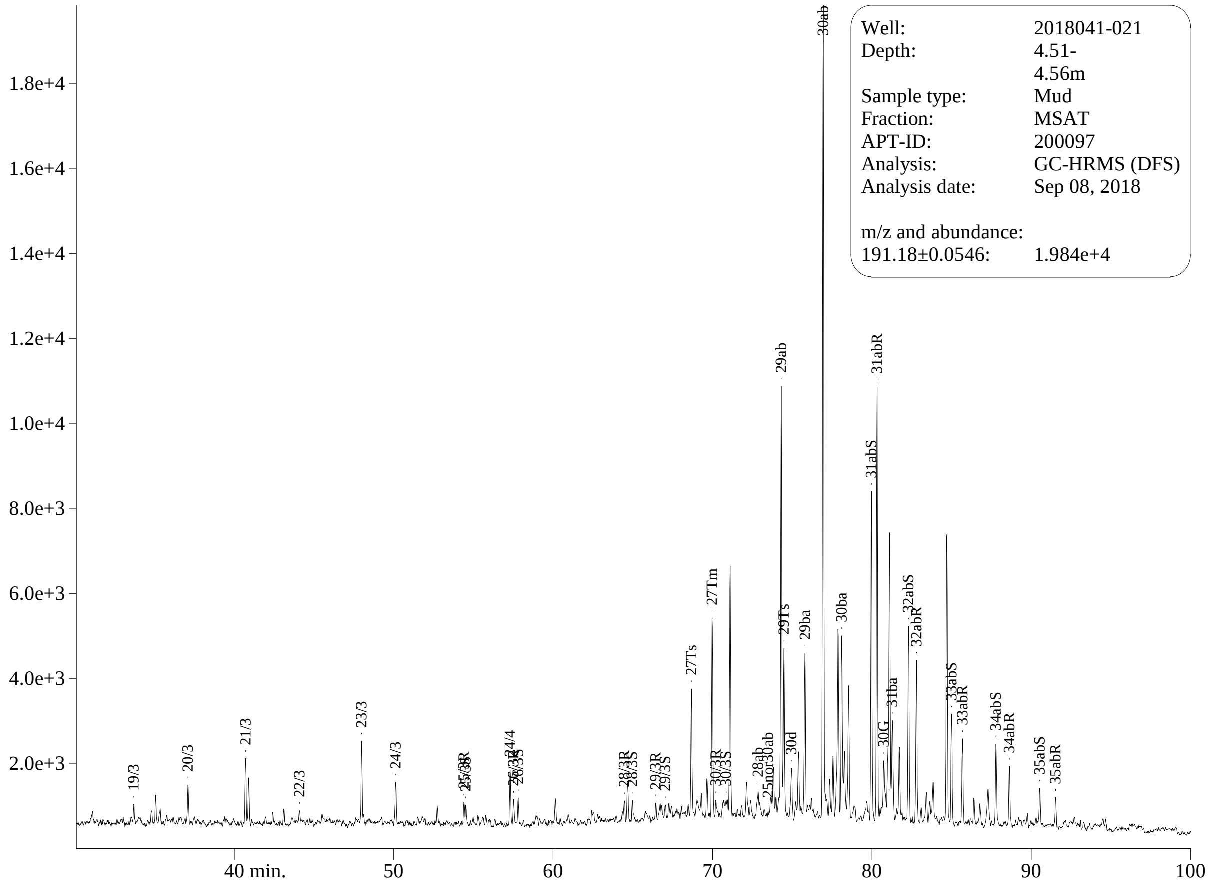

Well: 2018041-019
Depth: 5.49-5.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200093
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
218.20±0.0623: 4.175e+3
21aa
21bb
22aa
22bb
27dbS
27dbR
27daR
28daR
27aaS
27bbR
27bbS
27aaR
28daS
29dbR
29daR
28bbR
28bbS
28aaR
29aaS
29bbR
29bbS
29aaR
30aaS
30bbR
30aaR
40 min.
50
60
70
80
90
6.0e+3
5.5e+3
5.0e+3
4.5e+3
4.0e+3
3.5e+3
3.0e+3
2.5e+3
2.0e+3
1.5e+3
1.0e+3
5.0e+2

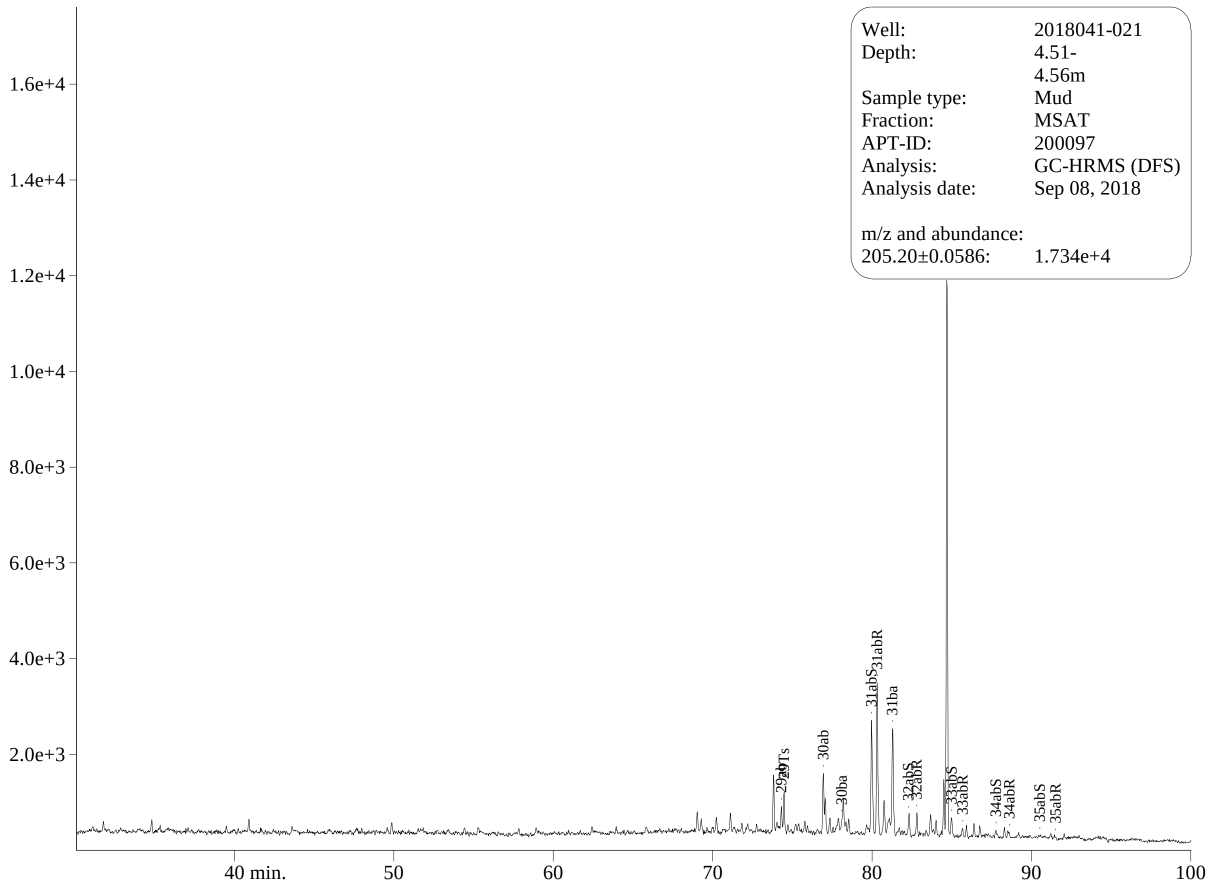

Well: 2018041-019
Depth: 5.49-5.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200093
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
231.21±0.0661: 1.268e+3
40 min.
50
60
70
80
90
1.8e+3
1.6e+3
1.4e+3
1.2e+3
1.0e+3
8.0e+2
6.0e+2
4.0e+2
2.0e+2

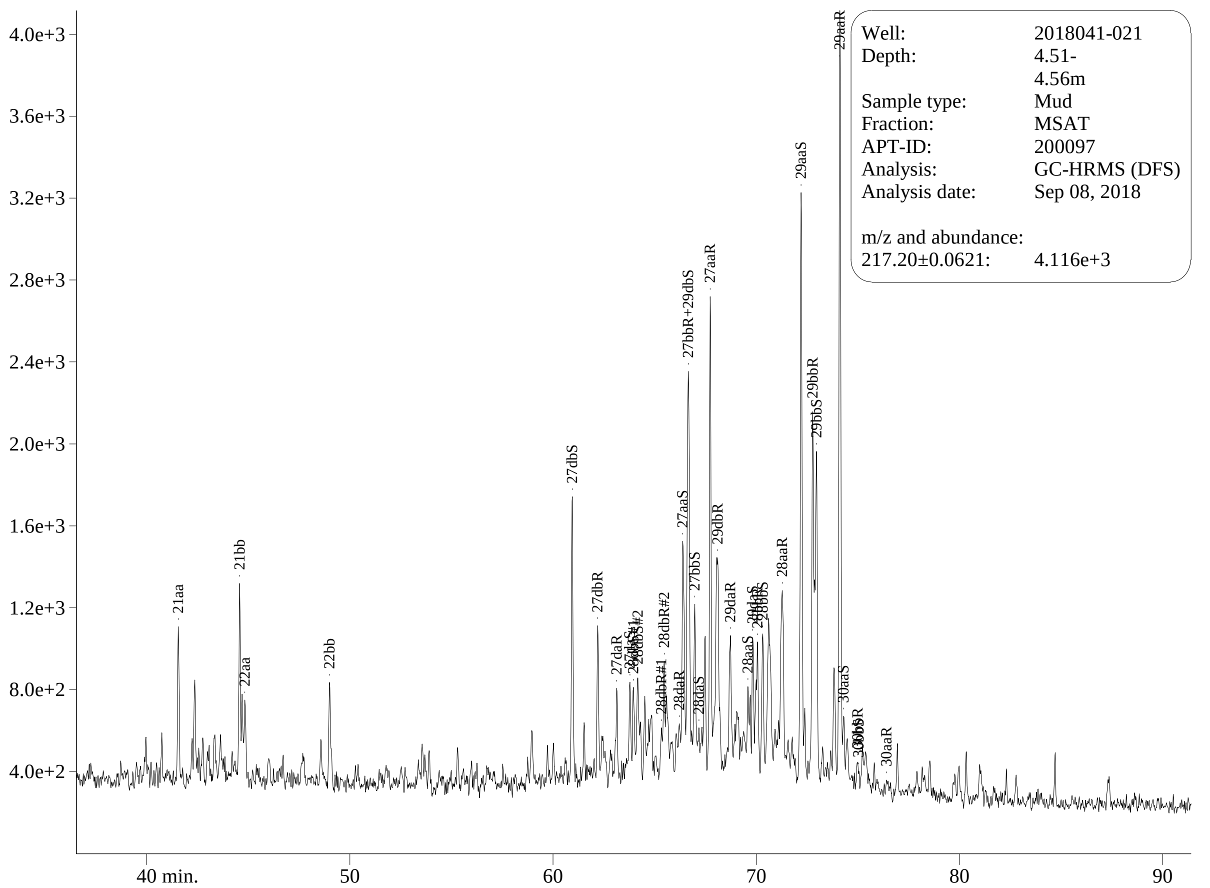


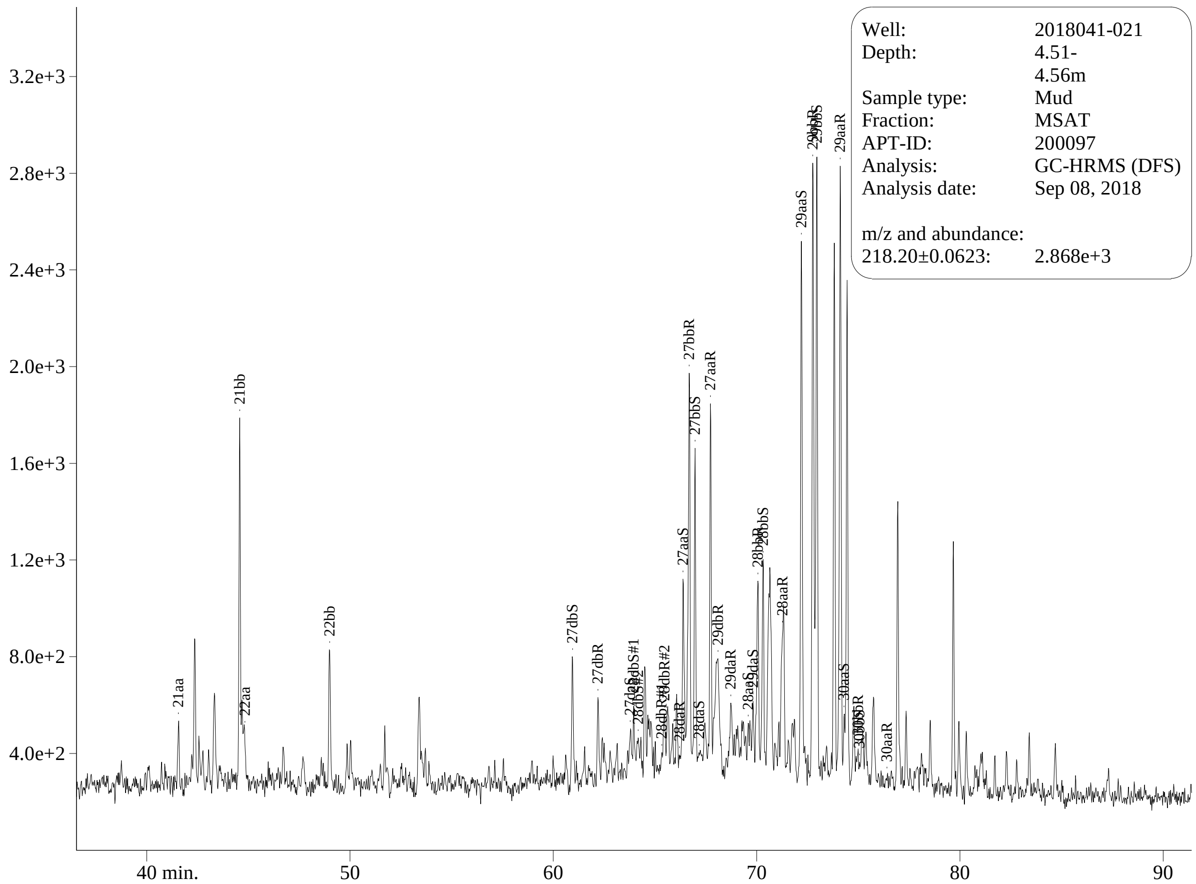
Well: 2018041-019
Depth: 5.49-5.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200093
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
259.24±0.0741: 3.517e+2
27dbS
27dbR
27daR
27daS
28dbS#1
28dbS#2
28dbR#1
28dbR#2
28daR
28daS
27bbR+29dbS
29dbR
29daR
29daS
320.0
280.0
240.0
200.0
160.0
120.0
80.0
40.0
40 min.
50
60
70
80
90

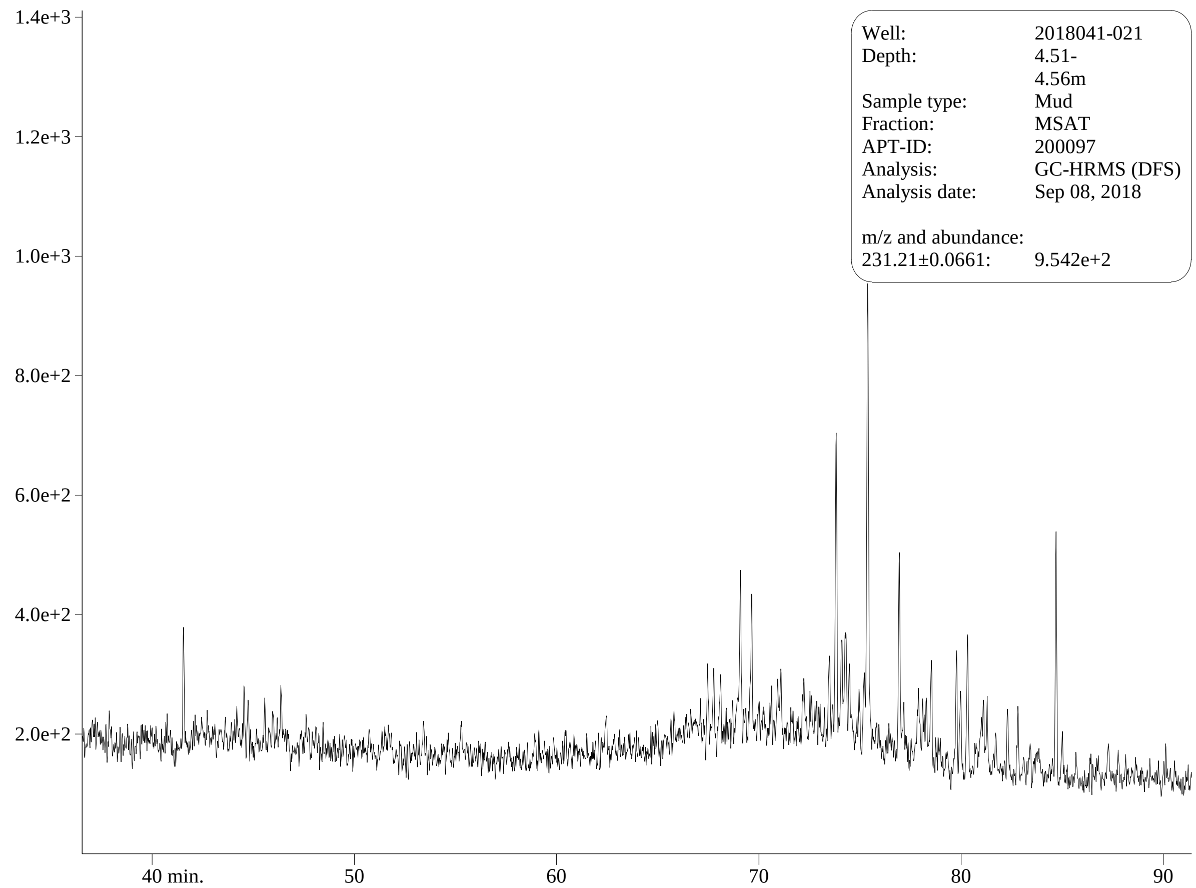

Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200097
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
177.16±0.0506: 9.792e+3
9.0e+3
8.0e+3
7.0e+3
6.0e+3
5.0e+3
4.0e+3
3.0e+3
2.0e+3
1.0e+3
40 min.
50
60
70
80
90
100
24/4
27Ts
25nor28ab
27Tm
25nor29ab
28ab
25nor30ab
29ab
29Ts
29ba
25nor31ab
30ba
31abS
31abR
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR

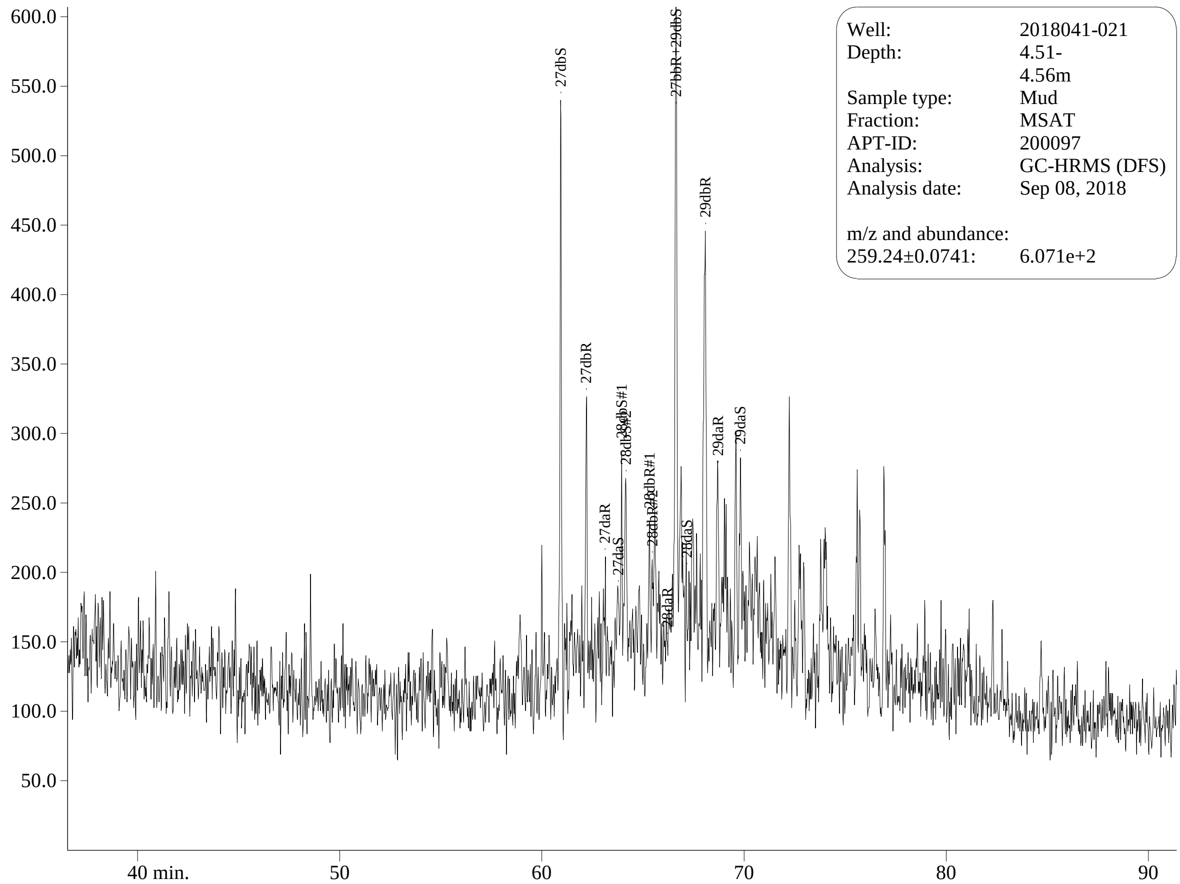

Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200097
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
191.18±0.0546: 1.984e+4
1.8e+4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
40 min.
50
60
70
80
90
100
19/3
20/3
21/3
22/3
23/3
24/3
25/3R
25/3S
24/4
26/3R
26/3S
28/3R
28/3S
29/3R
29/3S
27Ts
27Tm
30/3R
30/3S
28ab
25nor30ab
29ab
29Ts
30d
29ba
30ab
30ba
30G
31abS
31abR
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR


Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200097
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
205.20±0.0586: 1.734e+4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
40 min.
50
60
70
80
90
100
30ab
30ba
31abS
31abR
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR

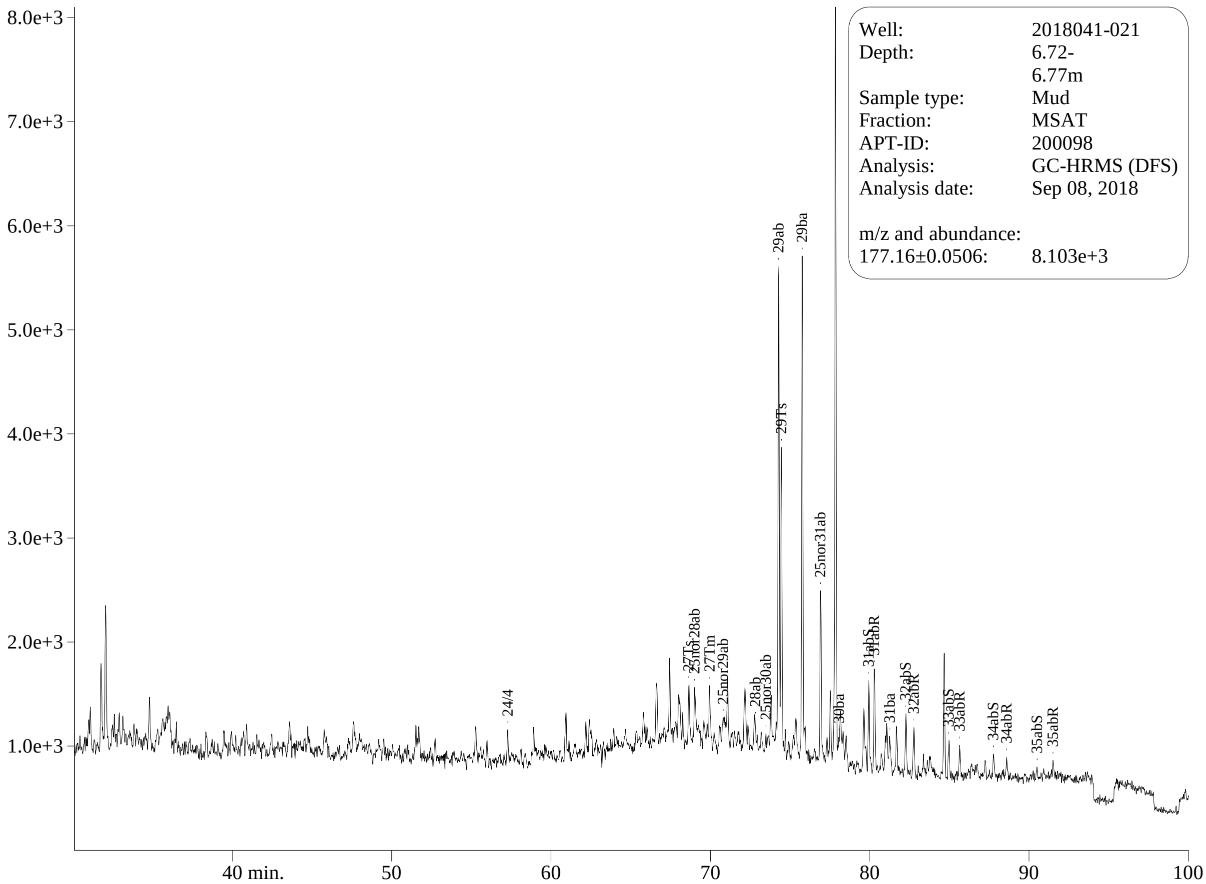

Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200097
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
217.20±0.0621: 4.116e+3
4.0e+3
3.6e+3
3.2e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
40 min.
50
60
70
80
90
21aa
21bb
22aa
22bb
27dbS
27dbR
27daR
28dbR#1
28dbR#2
28daR
27bbR+29dbS
27aaS
27bbS
28daS
27aaR
29dbR
29daR
28aaS
28aaR
29aaS
29bbR
29bbS
29aaR
30aaS
30aaR

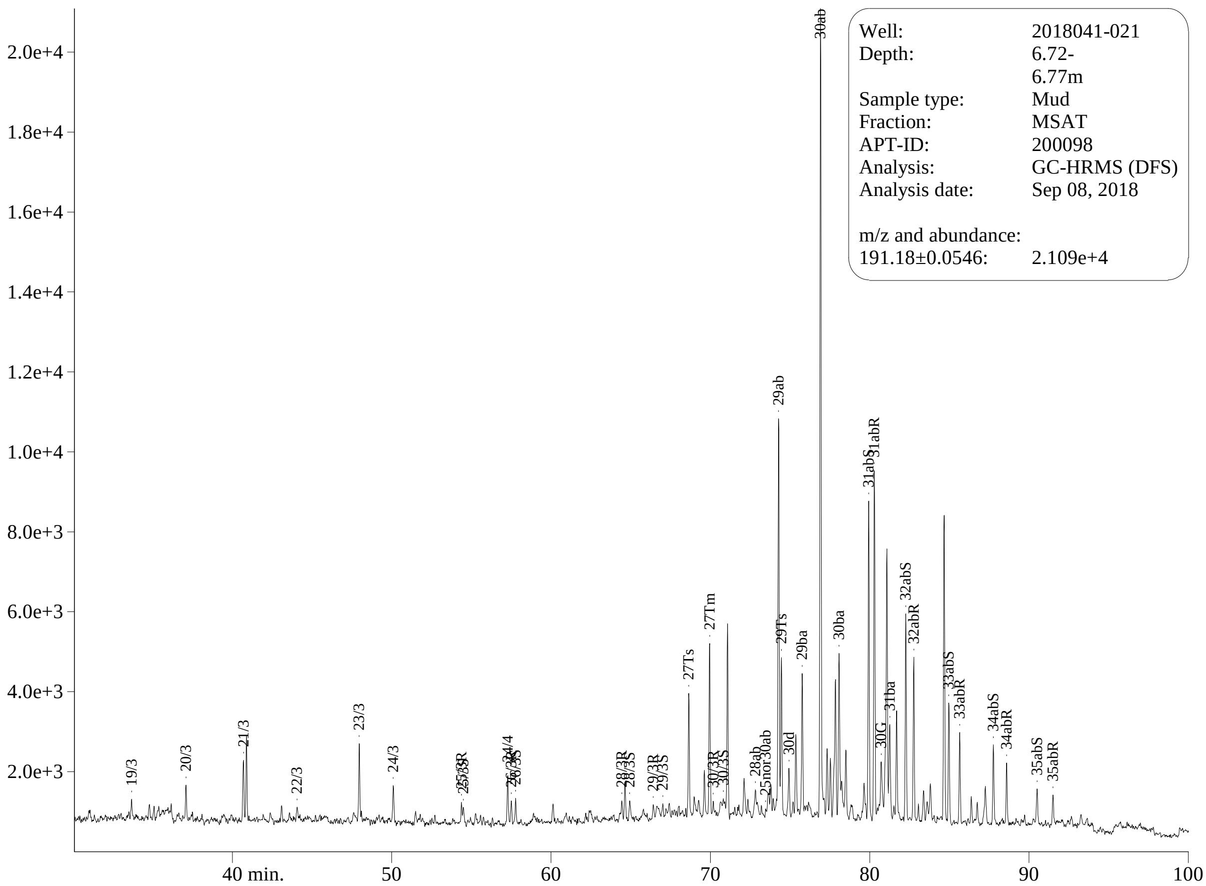

Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200097
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
218.20±0.0623: 2.868e+3
21aa
21bb
22aa
22bb
27dbS
27dbR
27aaS
27bbR
27bbS
27aaR
28aaR
29aaS
29aaR
30aaS
30aaR
40 min.
50
60
70
80
90

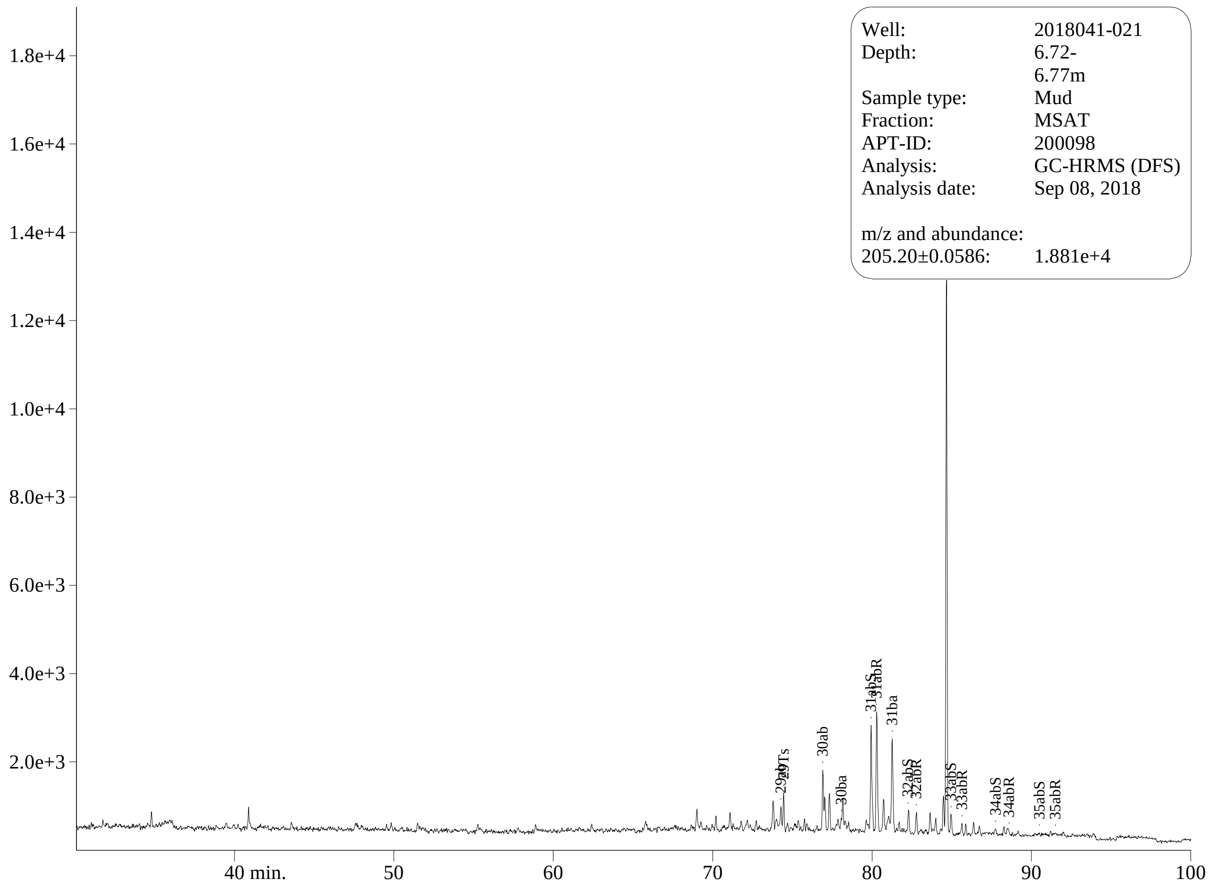

Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200097
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
231.21±0.0661: 9.542e+2
40 min.
50
60
70
80
90

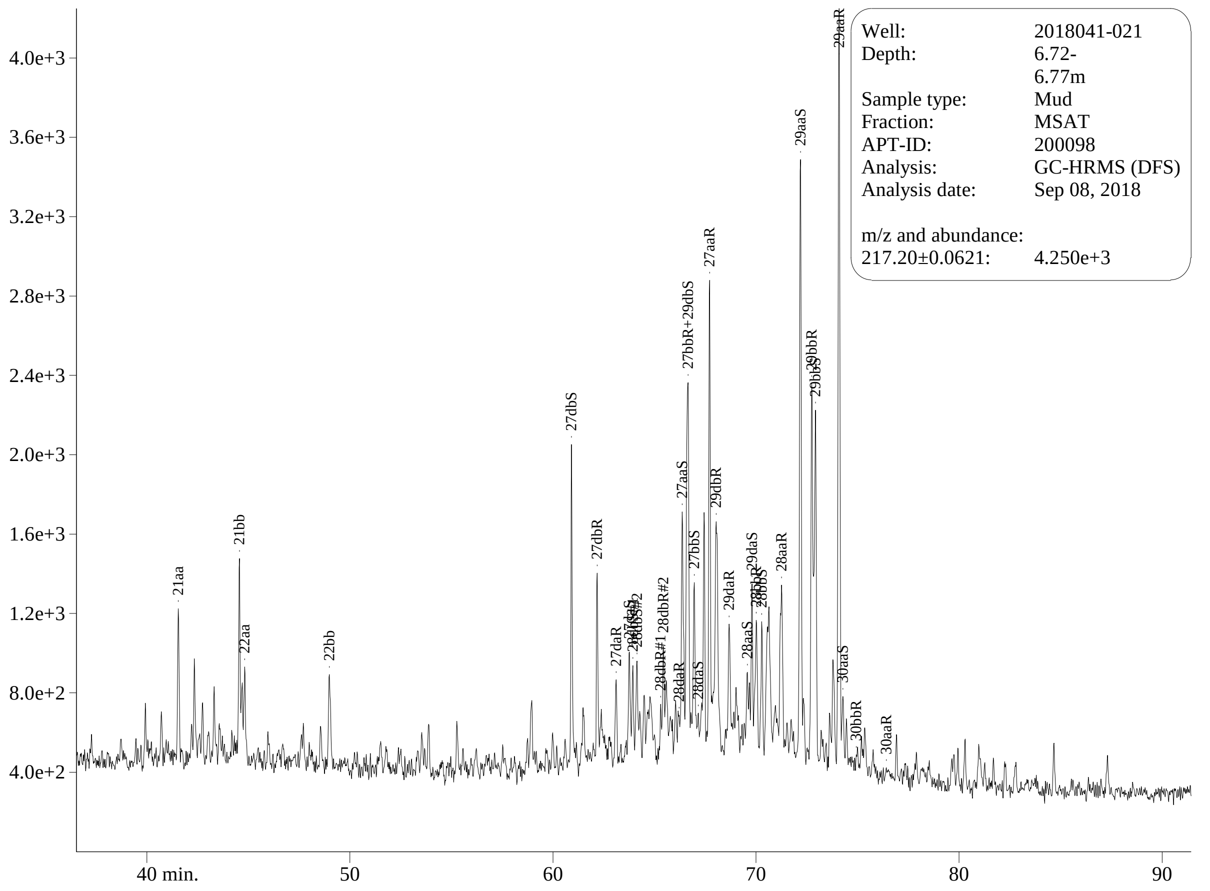


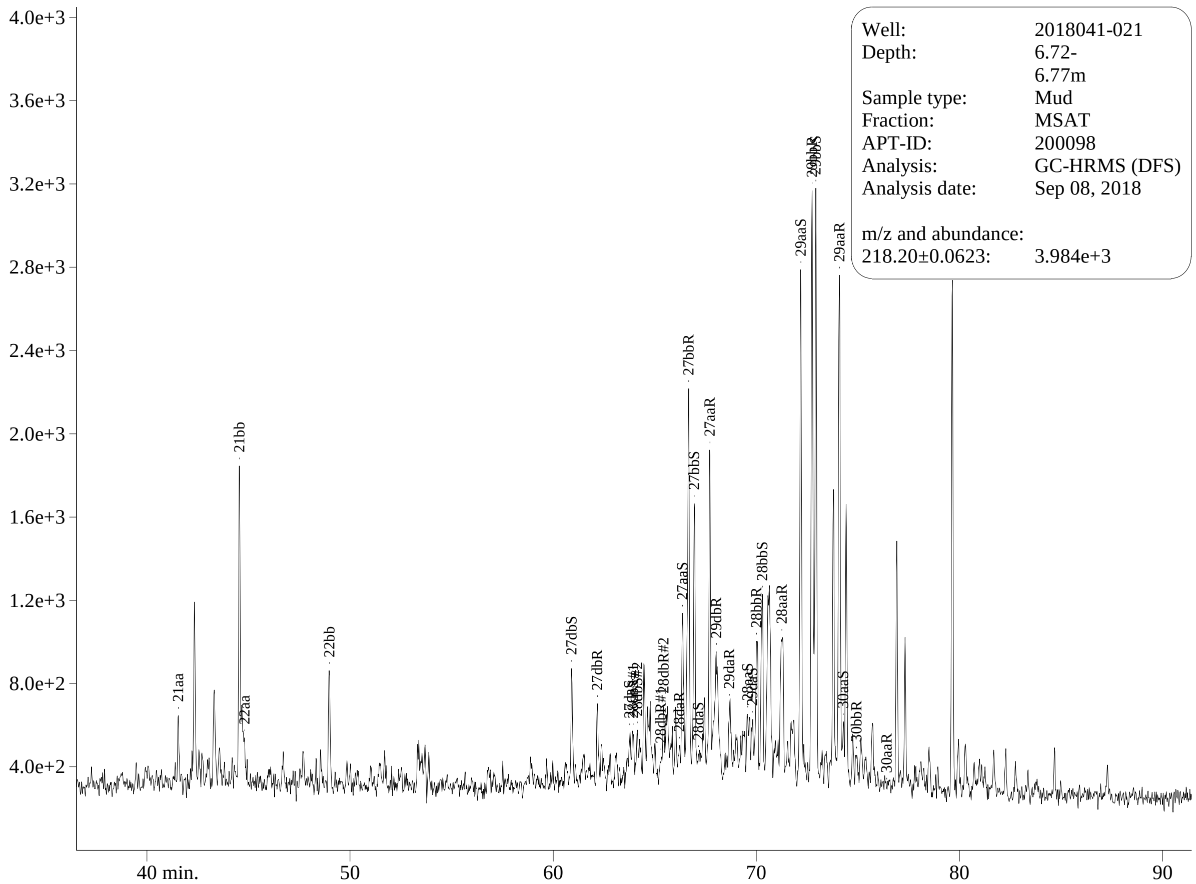
Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200097
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
259.24±0.0741: 6.071e+2
27dbS
27dbR
27daR
27daS
28dbS#1
28dbS#2
28dbR#1
28dbR#2
28daR
27bbR+29dbS
28daS
29dbR
29daR
29daS
600.0
550.0
500.0
450.0
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
40 min.
50
60
70
80
90

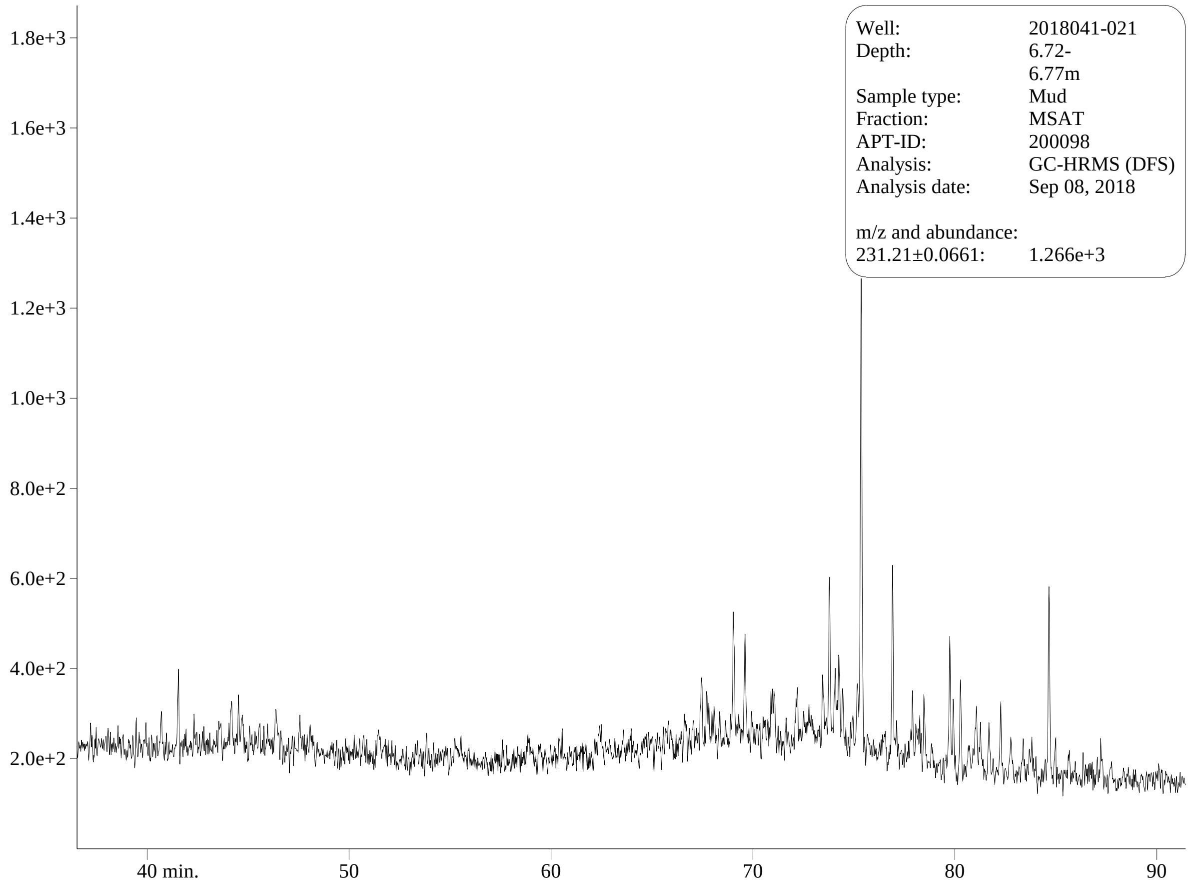

Well: 2018041-021
Depth: 6.72-6.77m
Sample type: Mud
Fraction: MSAT
APT-ID: 200098
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
177.16±0.0506: 8.103e+3
24/4
27Ts
25nor28ab
27Tm
25nor29ab
28ab
25nor30ab
29ab
29Ts
29ba
25nor31ab
30ba
31abS
31abR
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR
40 min.
50
60
70
80
90
100

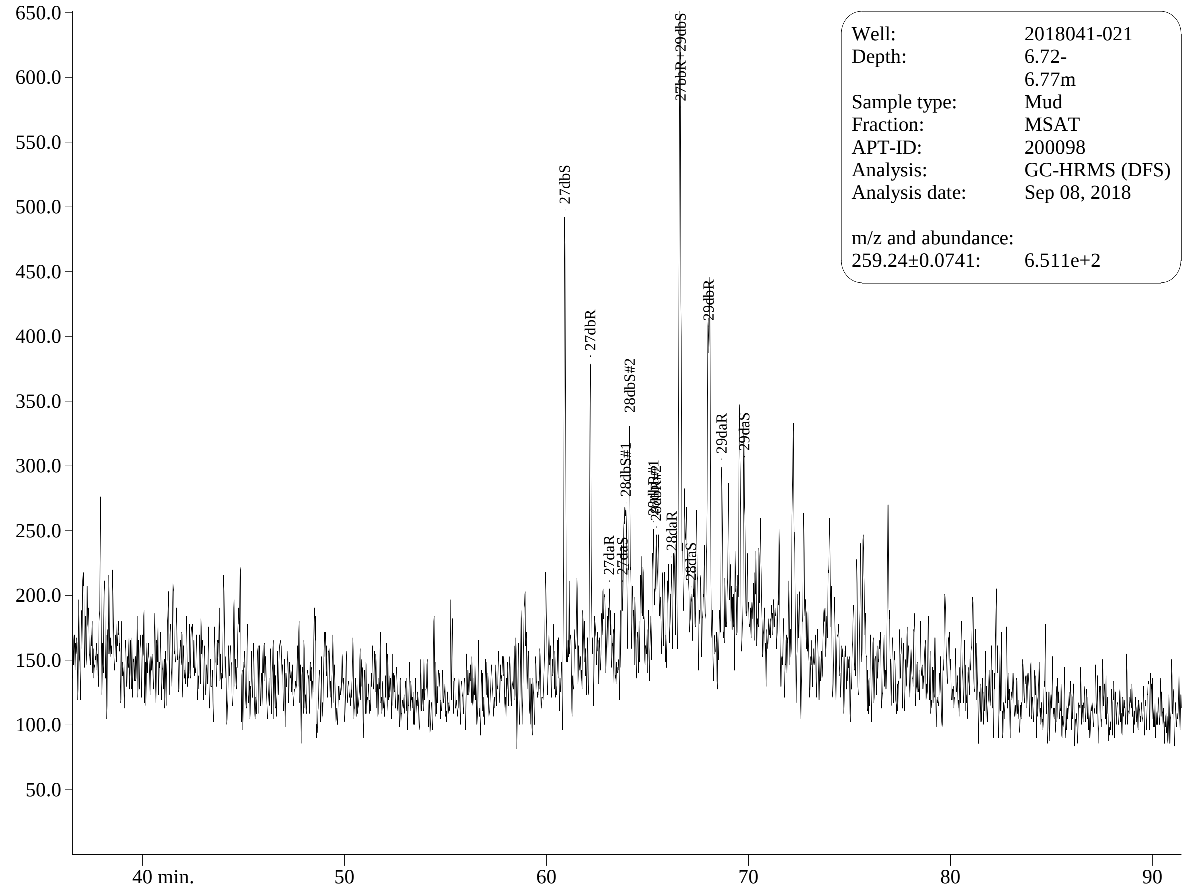

Well: 2018041-021
Depth: 6.72-6.77m
Sample type: Mud
Fraction: MSAT
APT-ID: 200098
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
191.18±0.0546: 2.109e+4
19/3
20/3
21/3
22/3
23/3
24/3
27Ts
27Tm
28ab
25nor30ab
29ab
29Ts
29ba
30d
30ab
30ba
30G
31abS
31abR
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR
40 min.
50
60
70
80
90
100


Well: 2018041-021
Depth: 6.72-6.77m
Sample type: Mud
Fraction: MSAT
APT-ID: 200098
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
205.20±0.0586: 1.881e+4
1.8e+4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
40 min.
50
60
70
80
90
100
30ab
30ba
31abS
31abR
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR

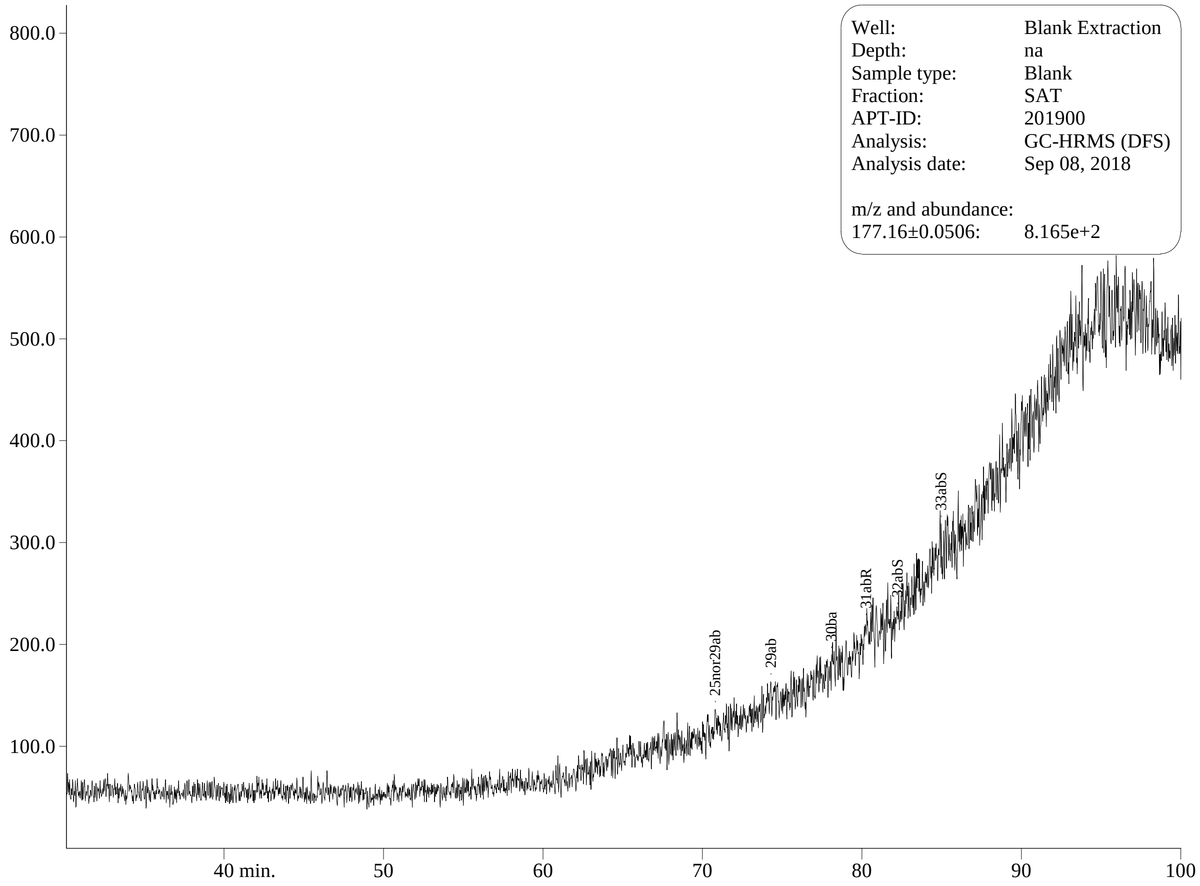

Well: 2018041-021
Depth: 6.72-6.77m
Sample type: Mud
Fraction: MSAT
APT-ID: 200098
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
217.20±0.0621: 4.250e+3
4.0e+3
3.6e+3
3.2e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
40 min.
50
60
70
80
90
21aa
21bb
22aa
22bb
27dbS
27dbR
27daR
28dbR#2
28dbR#1
28daR
28daS
27aaS
27bbR+29dbS
27bS
27aaR
29dbR
29daR
28aaS
29daS
28aaR
29aaS
29bbR
29bbS
29aaR
30aaS
30bbR
30aaR

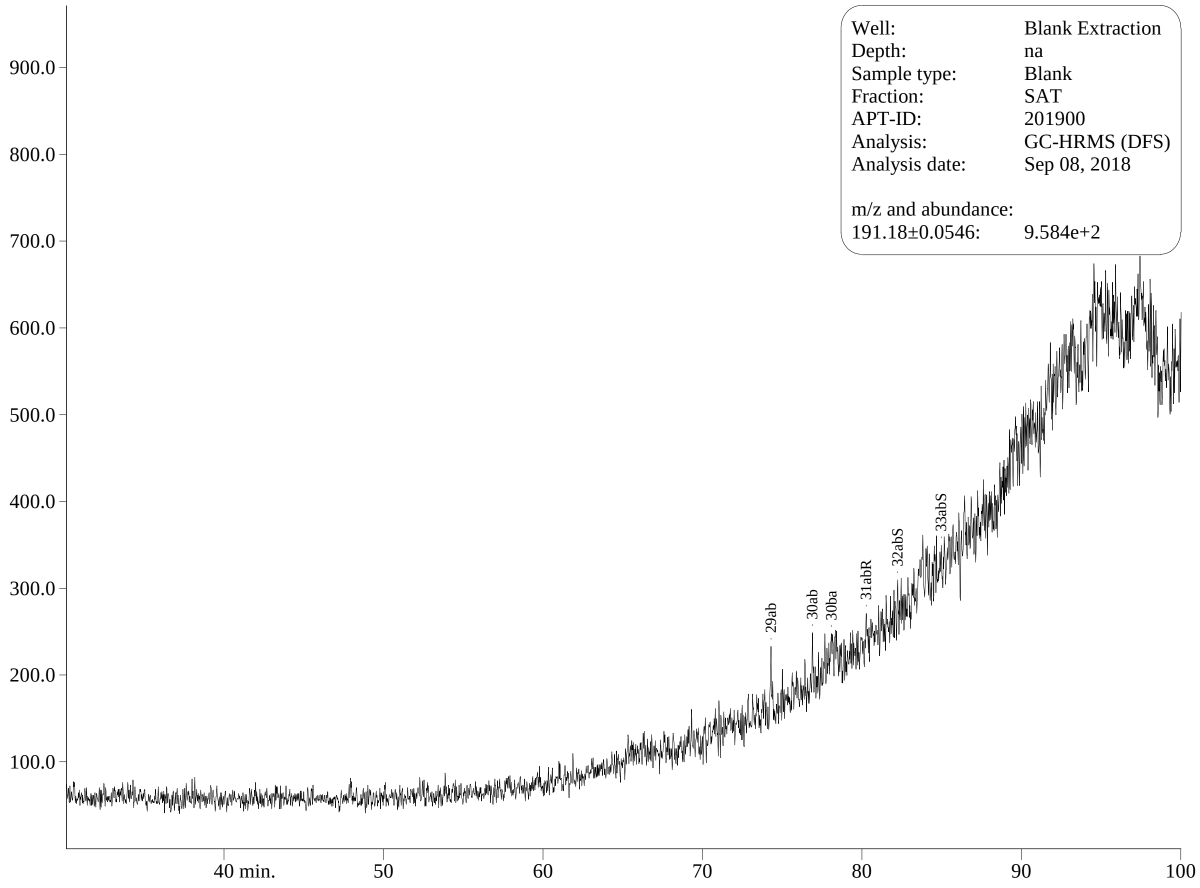

Well: 2018041-021
Depth: 6.72-6.77m
Sample type: Mud
Fraction: MSAT
APT-ID: 200098
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
218.20±0.0623: 3.984e+3
21aa
21bb
22aa
22bb
27dbS
27dbR
27aaS
27bbR
27bbS
27aaR
28daS
28dbR#2
29dbR
29daR
28aaS
28bbR
28bbS
28aaR
29aaS
29aaR
30aaS
30bbR
30aaR
4.0e+3
3.6e+3
3.2e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
40 min.
50
60
70
80
90

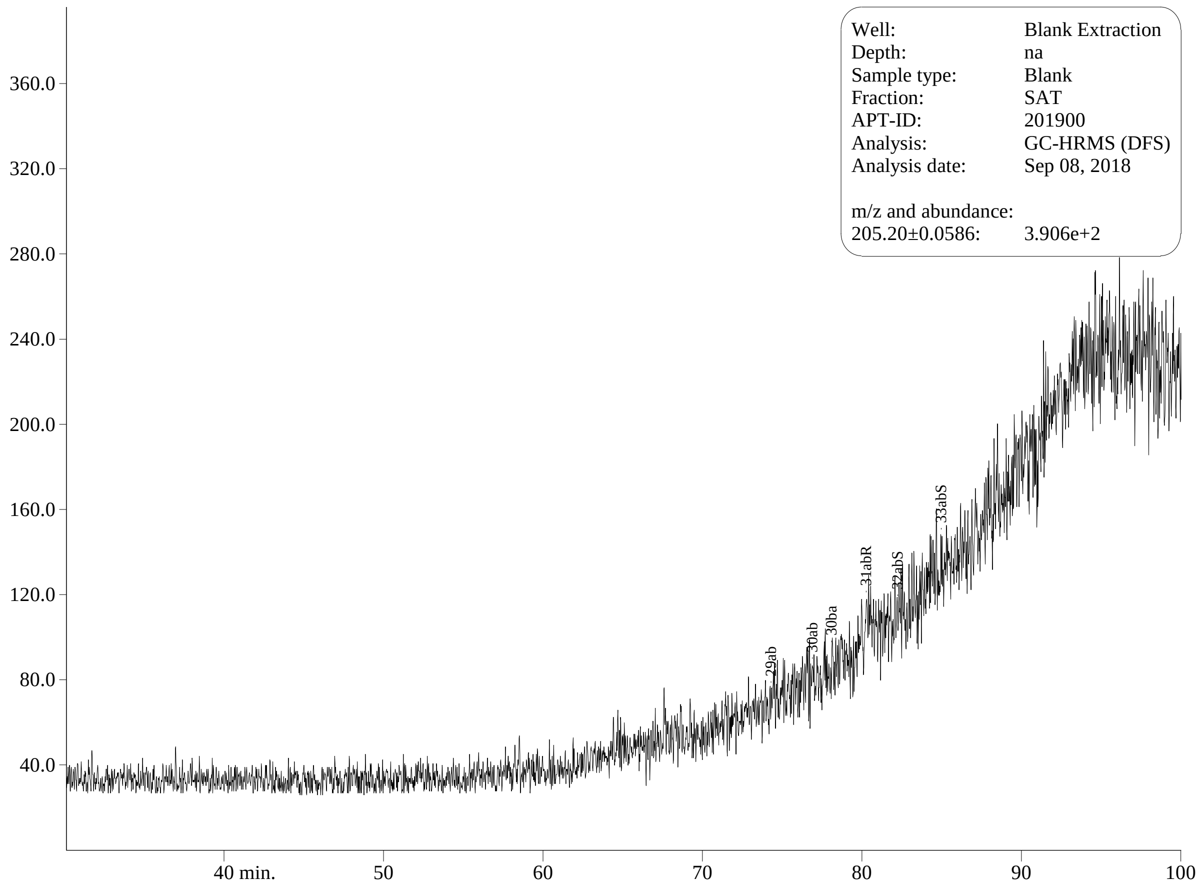

Well: 2018041-021
Depth: 6.72-6.77m
Sample type: Mud
Fraction: MSAT
APT-ID: 200098
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
231.21±0.0661: 1.266e+3
1.8e+3
1.6e+3
1.4e+3
1.2e+3
1.0e+3
8.0e+2
6.0e+2
4.0e+2
2.0e+2
40 min.
50
60
70
80
90

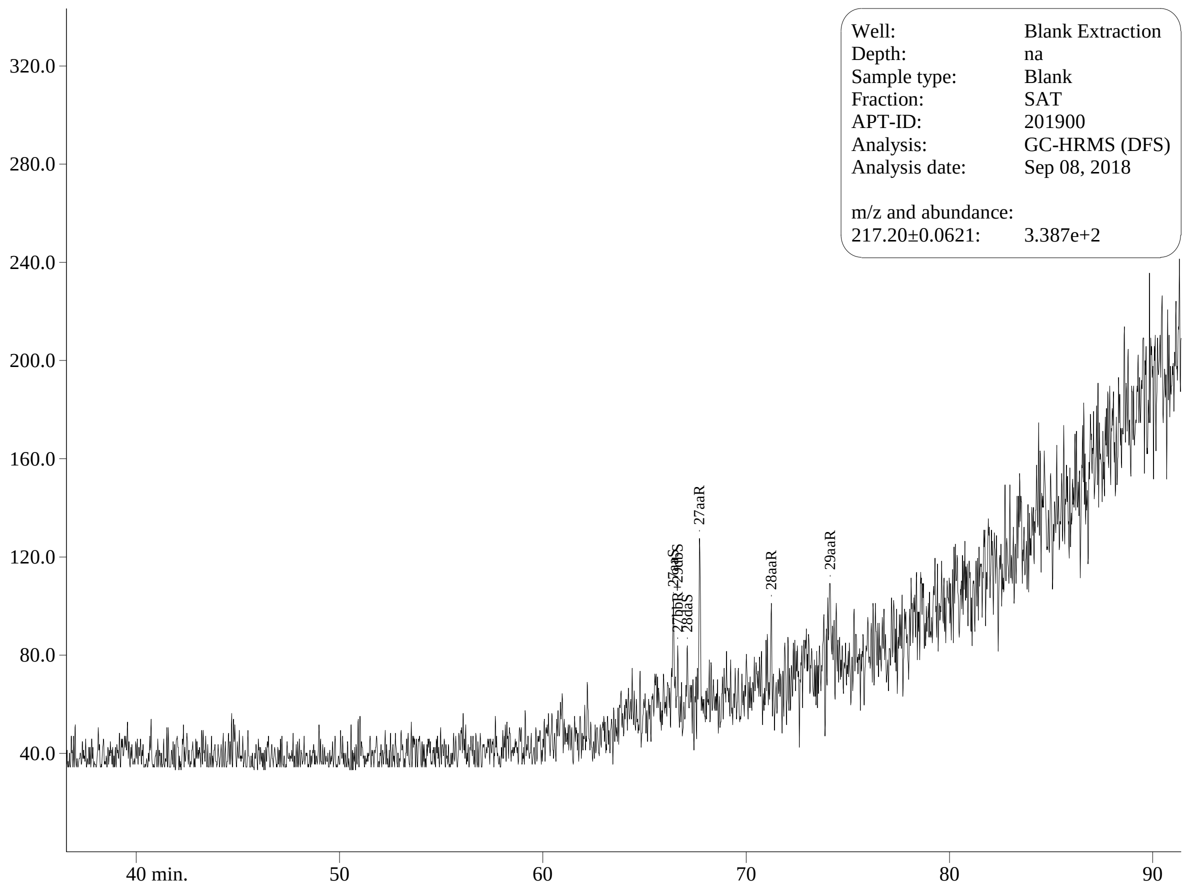


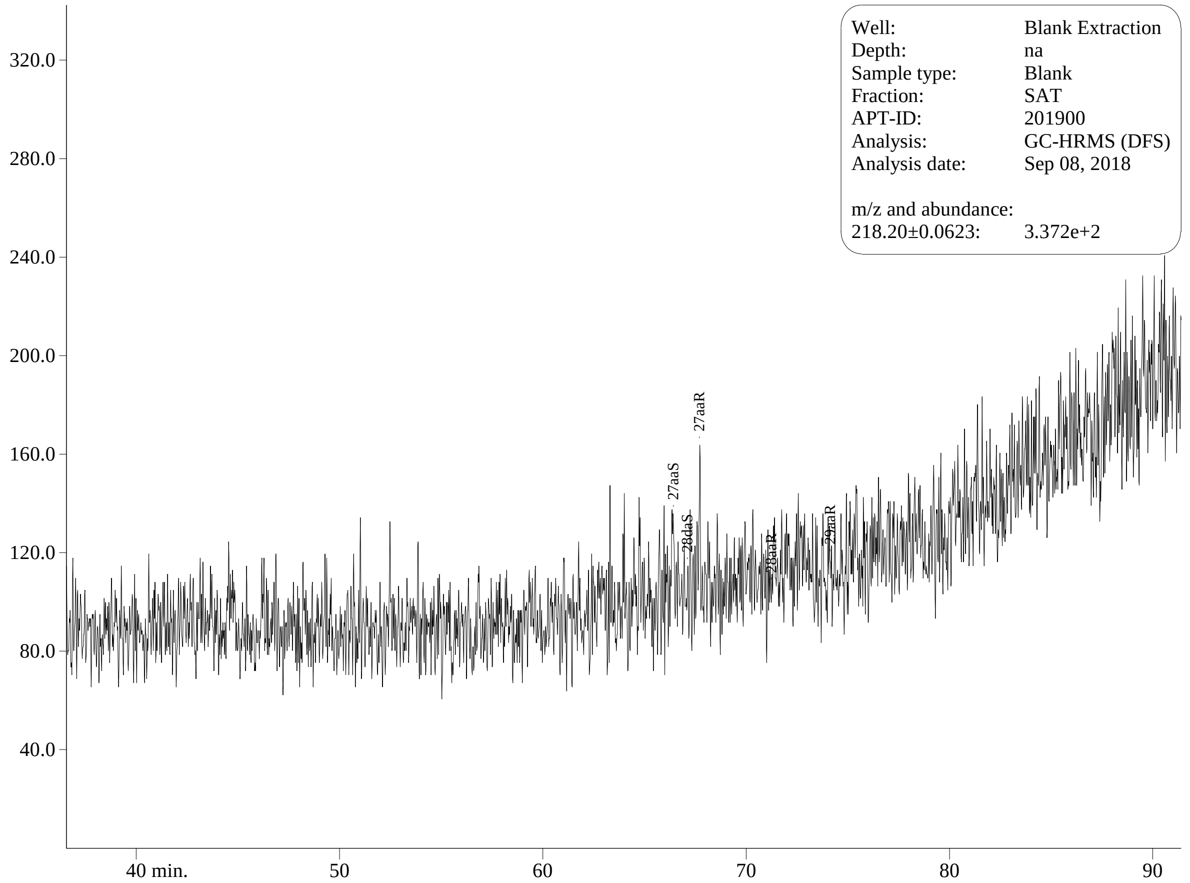
650.0
600.0
550.0
500.0
450.0
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
40 min.
50
60
70
80
90
27dbS
27dbR
27daR
27daS
28dbS#1
28dbS#2
28dbR#1
28dbR#2
28daR
28daS
27bbR+29dbS
29dbR
29daR
29daS
Well: 2018041-021
Depth: 6.72-6.77m
Sample type: Mud
Fraction: MSAT
APT-ID: 200098
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
259.24±0.0741: 6.511e+2

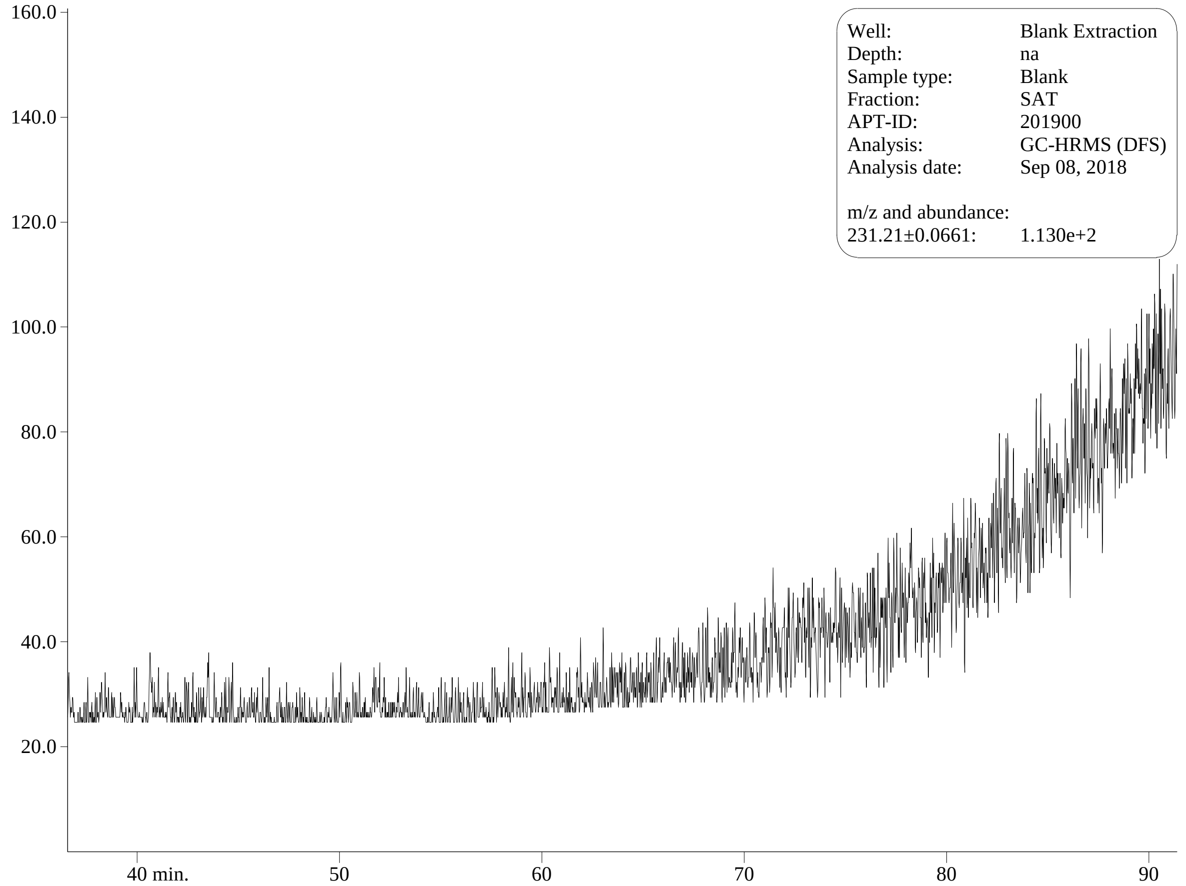

Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
177.16±0.0506: 8.165e+2
800.0
700.0
600.0
500.0
400.0
300.0
200.0
100.0
25nor29ab
29ab
30ba
31abR
32abS
33abS
40 min.
50
60
70
80
90
100

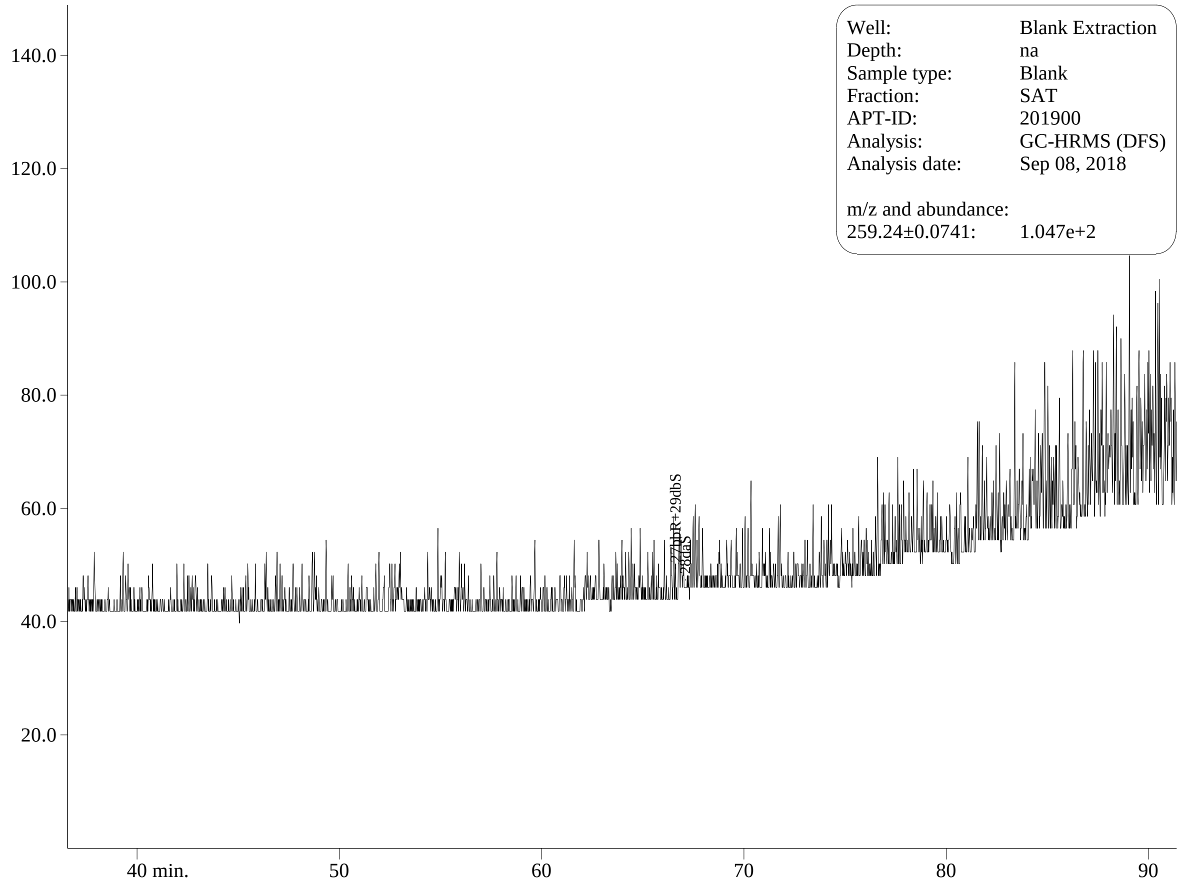

Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
191.18±0.0546: 9.584e+2
900.0
800.0
700.0
600.0
500.0
400.0
300.0
200.0
100.0
29ab
30ab
30ba
31abR
32abS
33abS
40 min.
50
60
70
80
90
100

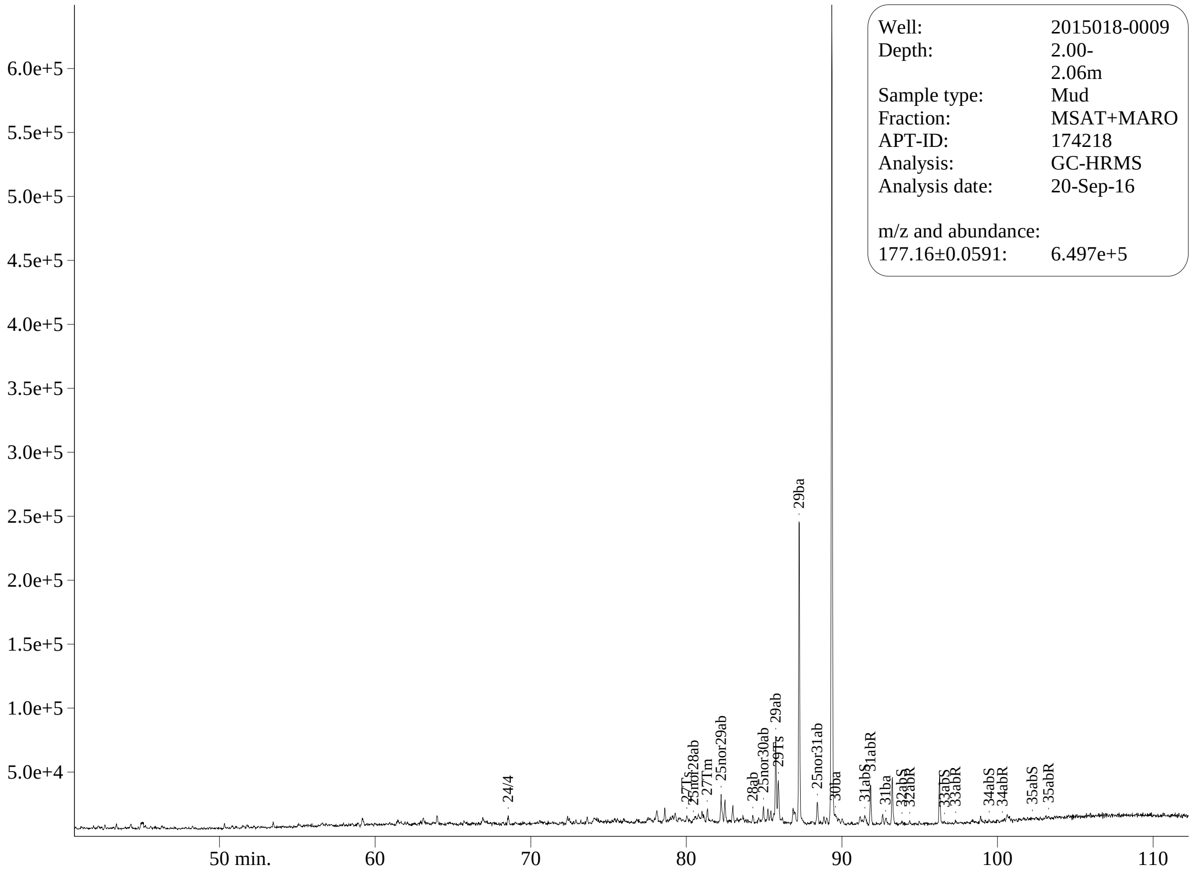

Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
205.20±0.0586: 3.906e+2
29ab
30ab
30ba
31abR
32abS
33abS
360.0
320.0
280.0
240.0
200.0
160.0
120.0
80.0
40.0
40 min.
50
60
70
80
90
100

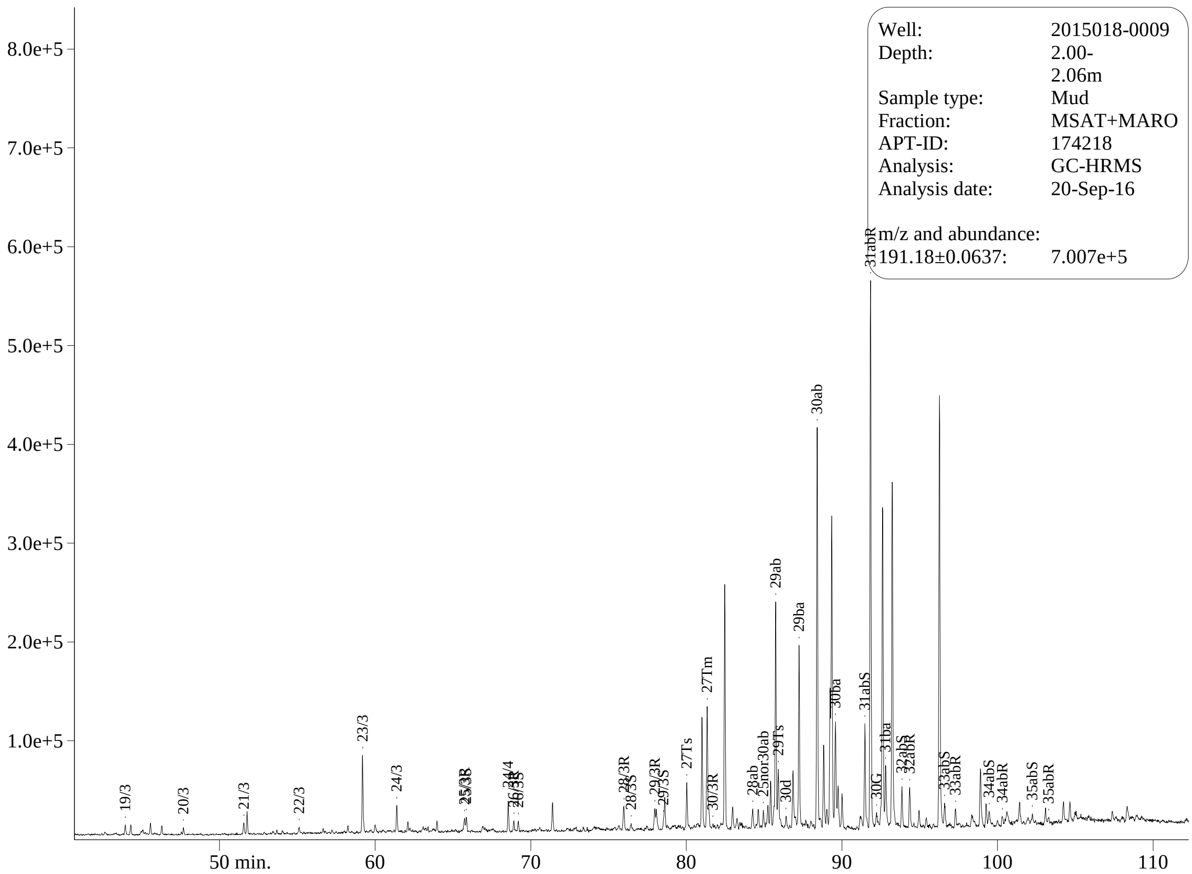

Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
217.20±0.0621: 3.387e+2
27aaR
28aaR
29aaR
28daS
320.0
280.0
240.0
200.0
160.0
120.0
80.0
40.0
40 min.
50
60
70
80
90

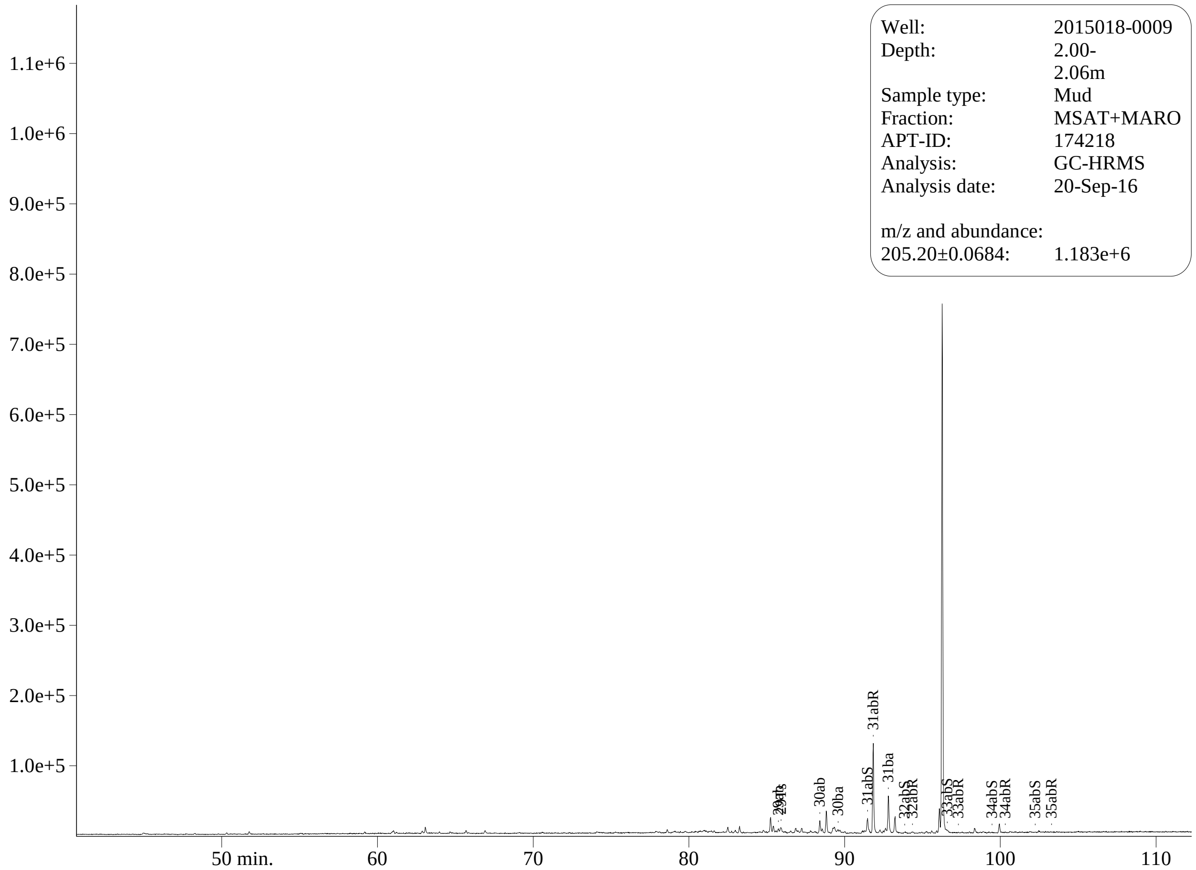

Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
218.20±0.0623: 3.372e+2
27aaR
27aaS
28daS
28aaR
29aaR
320.0
280.0
240.0
200.0
160.0
120.0
80.0
40.0
40 min.
50
60
70
80
90

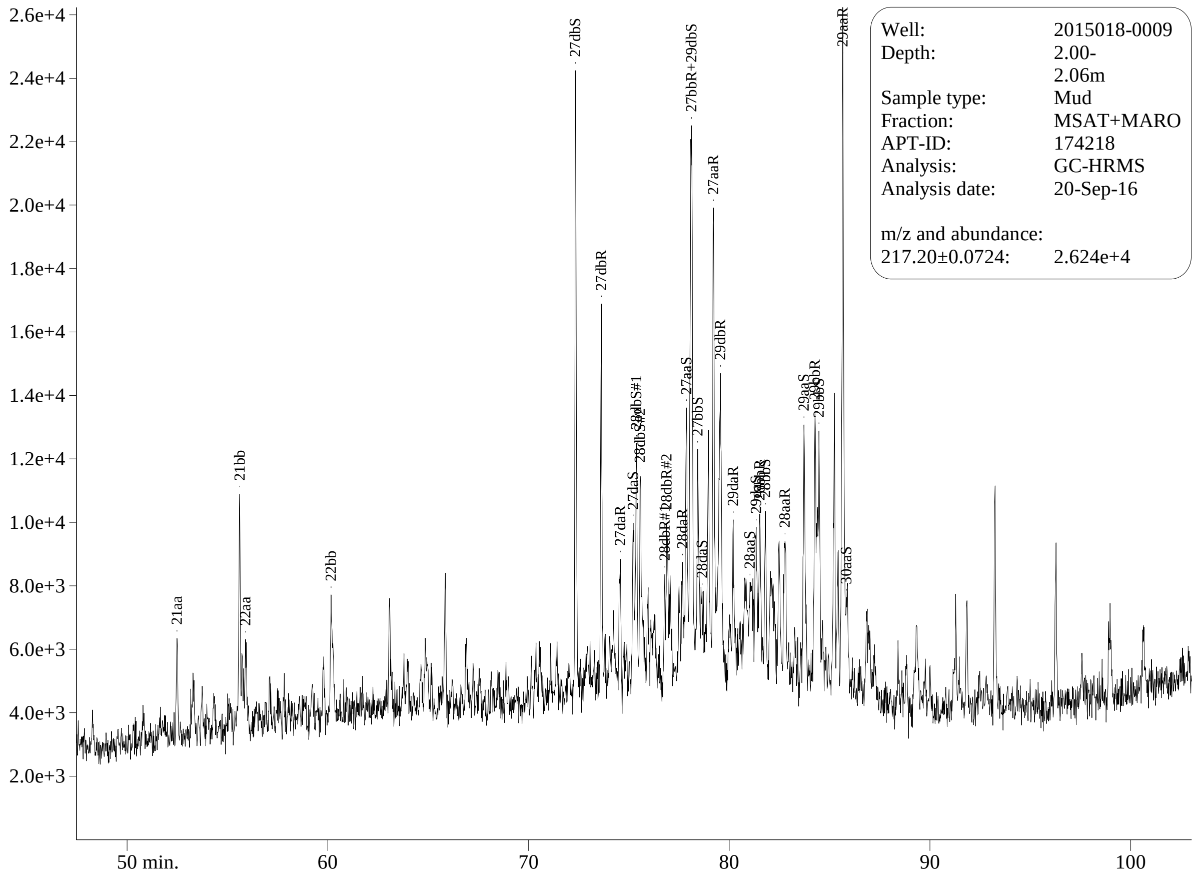

Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
231.21±0.0661: 1.130e+2
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
40 min.
50
60
70
80
90

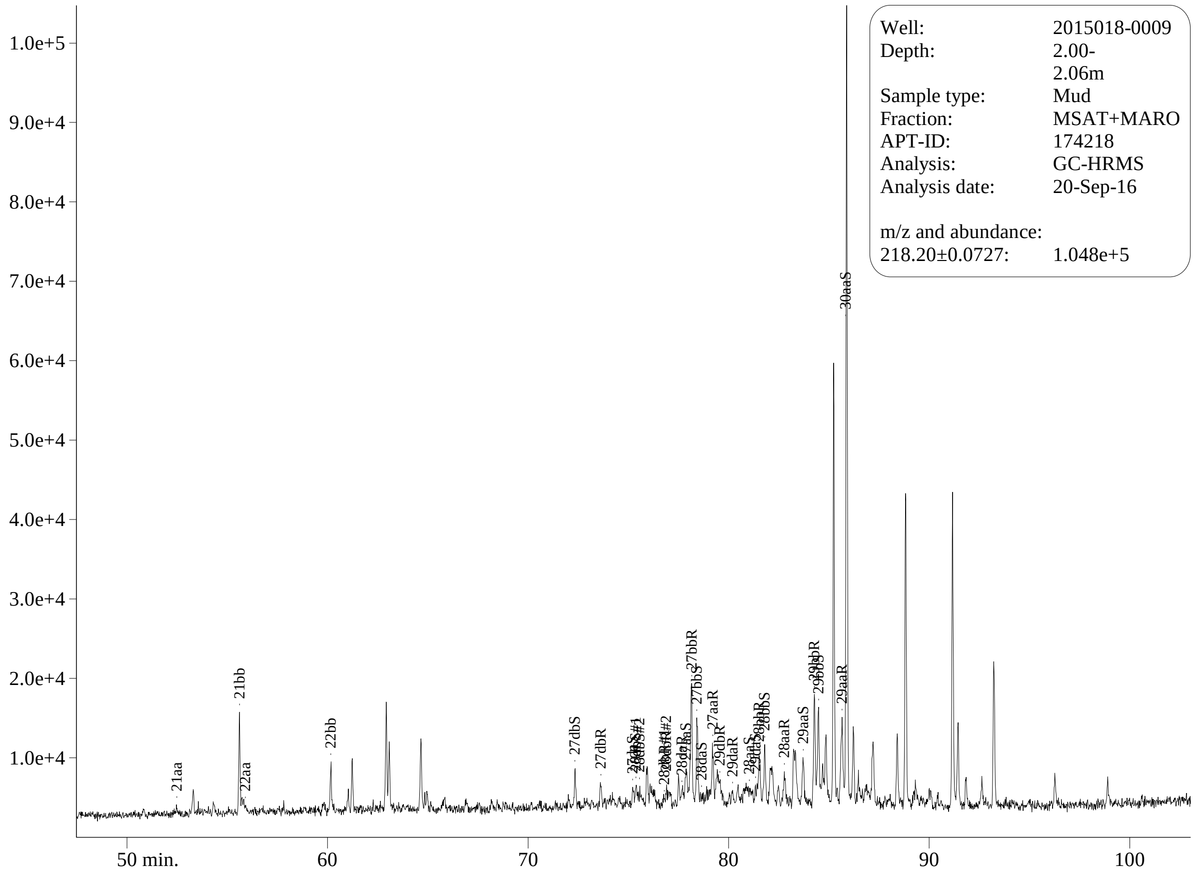

Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-HRMS (DFS)
Analysis date: Sep 08, 2018
m/z and abundance:
259.24±0.0741: 1.047e+2
140.0
120.0
100.0
80.0
60.0
40.0
20.0
40 min.
50
60
70
80
90
27bbR+29dbS
28daS

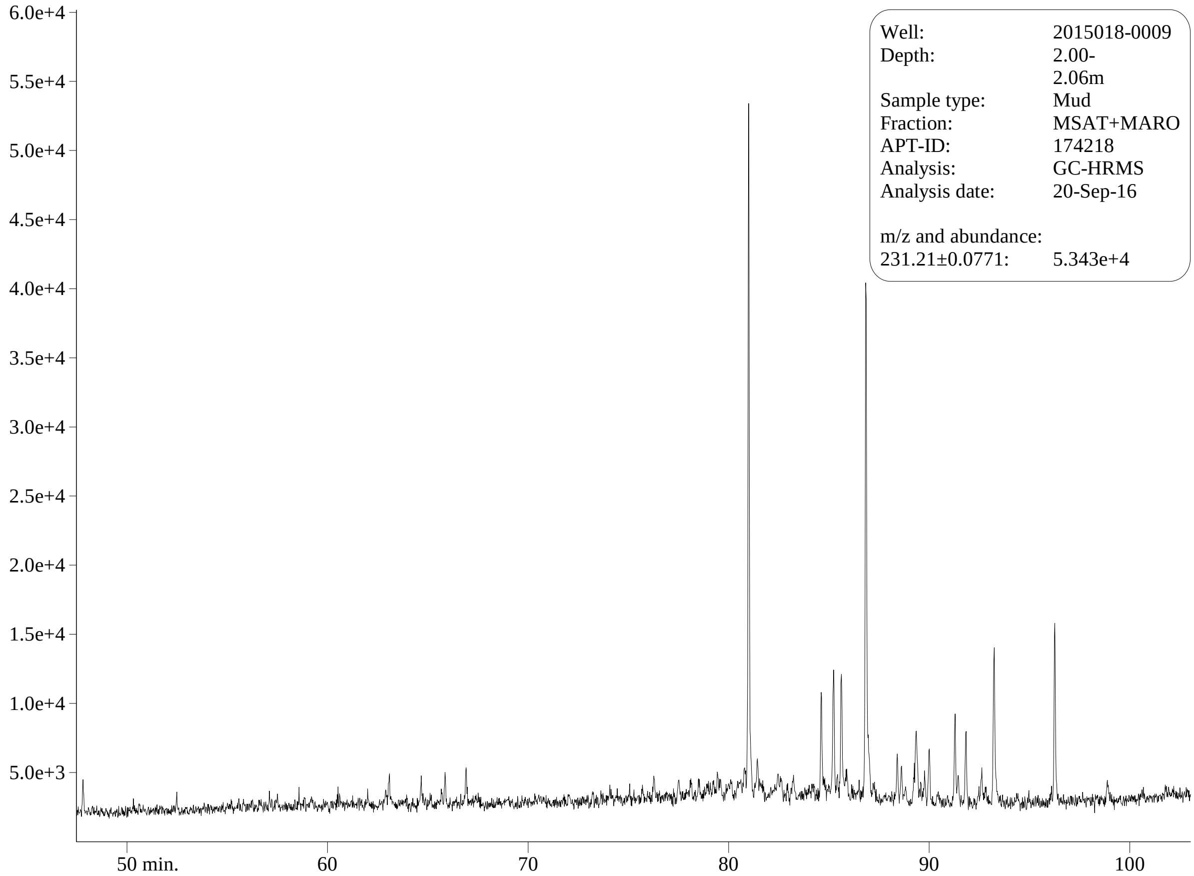

Well: 2015018-0009
Depth: 2.00-2.06m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174218
Analysis: GC-HRMS
Analysis date: 20-Sep-16
m/z and abundance:
177.16±0.0591: 6.497e+5
24/4
27Ts
25nor28ab
27Tm
25nor29ab
28ab
25nor30ab
29Ts
29ab
29ba
25nor31ab
30ba
31abS
31abR
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR
50 min.
60
70
80
90
100
110
6.0e+5
5.5e+5
5.0e+5
4.5e+5
4.0e+5
3.5e+5
3.0e+5
2.5e+5
2.0e+5
1.5e+5
1.0e+5
5.0e+4

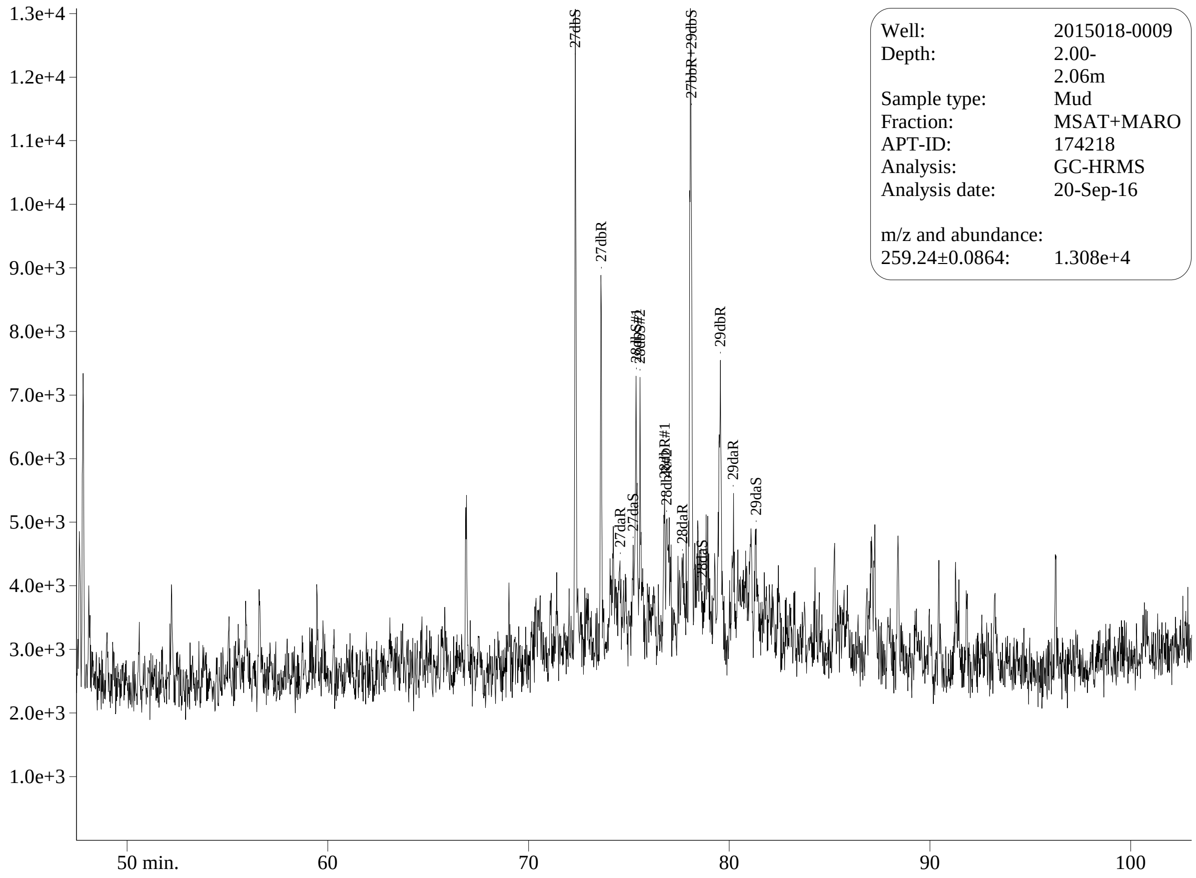

Well: 2015018-0009
Depth: 2.00-2.06m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174218
Analysis: GC-HRMS
Analysis date: 20-Sep-16
m/z and abundance:
191.18±0.0637: 7.007e+5
19/3
20/3
21/3
22/3
23/3
24/3
25/3R
25/3S
24/4
26/3R
26/3S
28/3R
28/3S
29/3R
29/3S
27Ts
27Tm
30/3R
28ab
25nor30ab
29Ts
29ab
30d
29ba
30ab
30ba
30G
31abS
31abR
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR
50 min.
60
70
80
90
100
110
8.0e+5
7.0e+5
6.0e+5
5.0e+5
4.0e+5
3.0e+5
2.0e+5
1.0e+5


Well: 2015018-0009
Depth: 2.00-2.06m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174218
Analysis: GC-HRMS
Analysis date: 20-Sep-16
m/z and abundance:
205.20±0.0684: 1.183e+6
31abR
31abS
31ba
30ab
30ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR
1.1e+6
1.0e+6
9.0e+5
8.0e+5
7.0e+5
6.0e+5
5.0e+5
4.0e+5
3.0e+5
2.0e+5
1.0e+5
50 min.
60
70
80
90
100
110

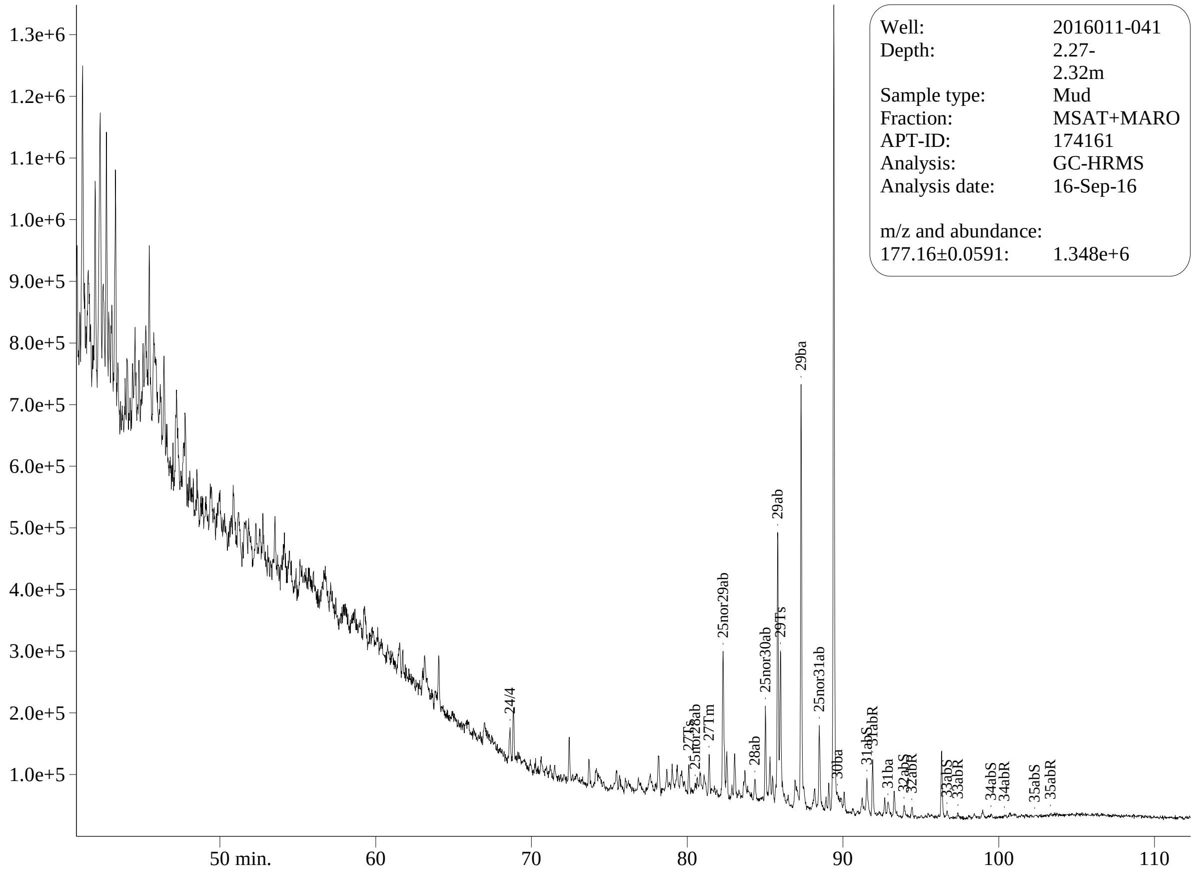

Well: 2015018-0009
Depth: 2.00-2.06m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174218
Analysis: GC-HRMS
Analysis date: 20-Sep-16
m/z and abundance:
217.20±0.0724: 2.624e+4
21aa
21bb
22aa
22bb
27dbS
27dbR
27daR
27daS
28dbS#1
28dbS#2
28dbR#2
28daR
28daS
27bbR+29dbS
27aaS
27bbS
27aaR
29dbR
29daR
28aaS
28aaR
29aaS
30aaS
29aaR
2.6e+4
2.4e+4
2.2e+4
2.0e+4
1.8e+4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
50 min.
60
70
80
90
100

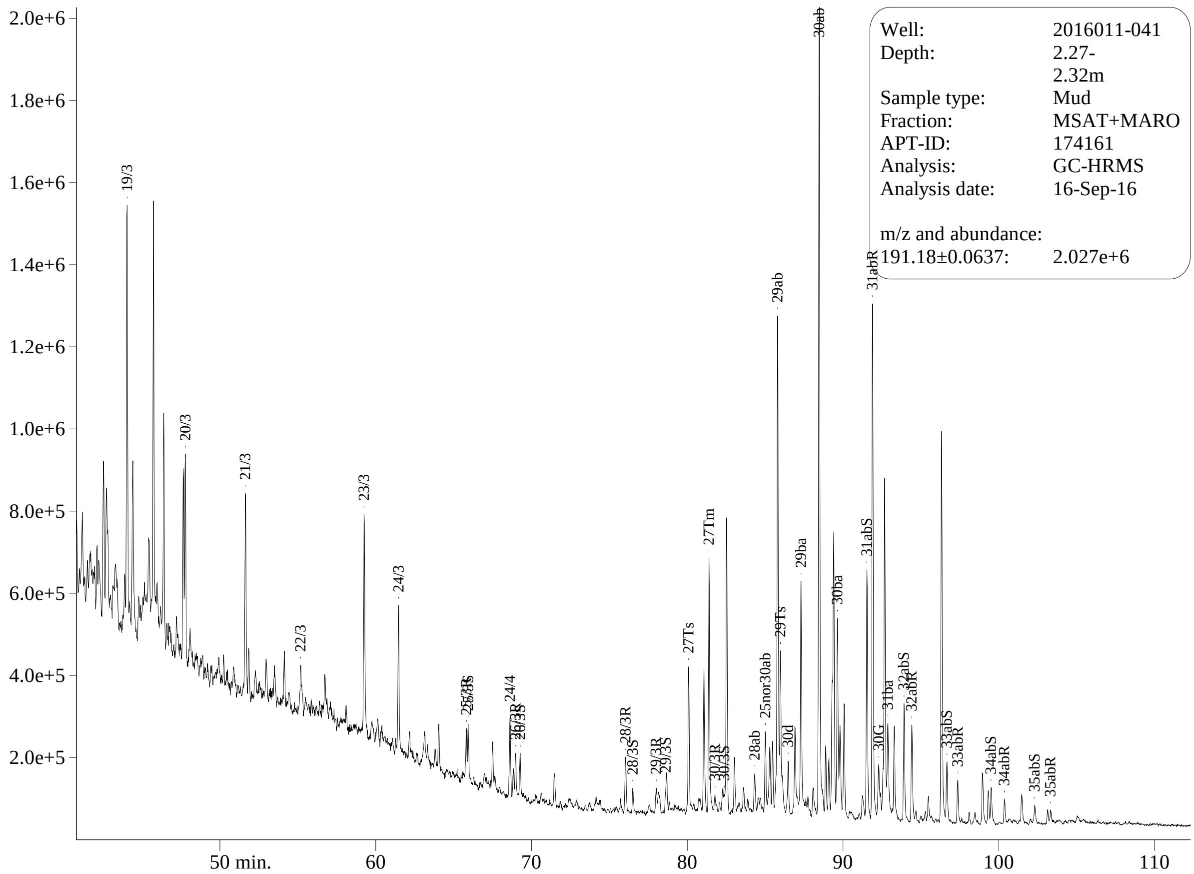

Well: 2015018-0009
Depth: 2.00-2.06m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174218
Analysis: GC-HRMS
Analysis date: 20-Sep-16
m/z and abundance:
218.20±0.0727: 1.048e+5
1.0e+5
9.0e+4
8.0e+4
7.0e+4
6.0e+4
5.0e+4
4.0e+4
3.0e+4
2.0e+4
1.0e+4
50 min.
60
70
80
90
100
21aa
21bb
22aa
22bb
27dbS
27dbR
27bbR
27bbS
27aaR
28daS
29daR
28aaR
29aaS
29aaR
30aaS

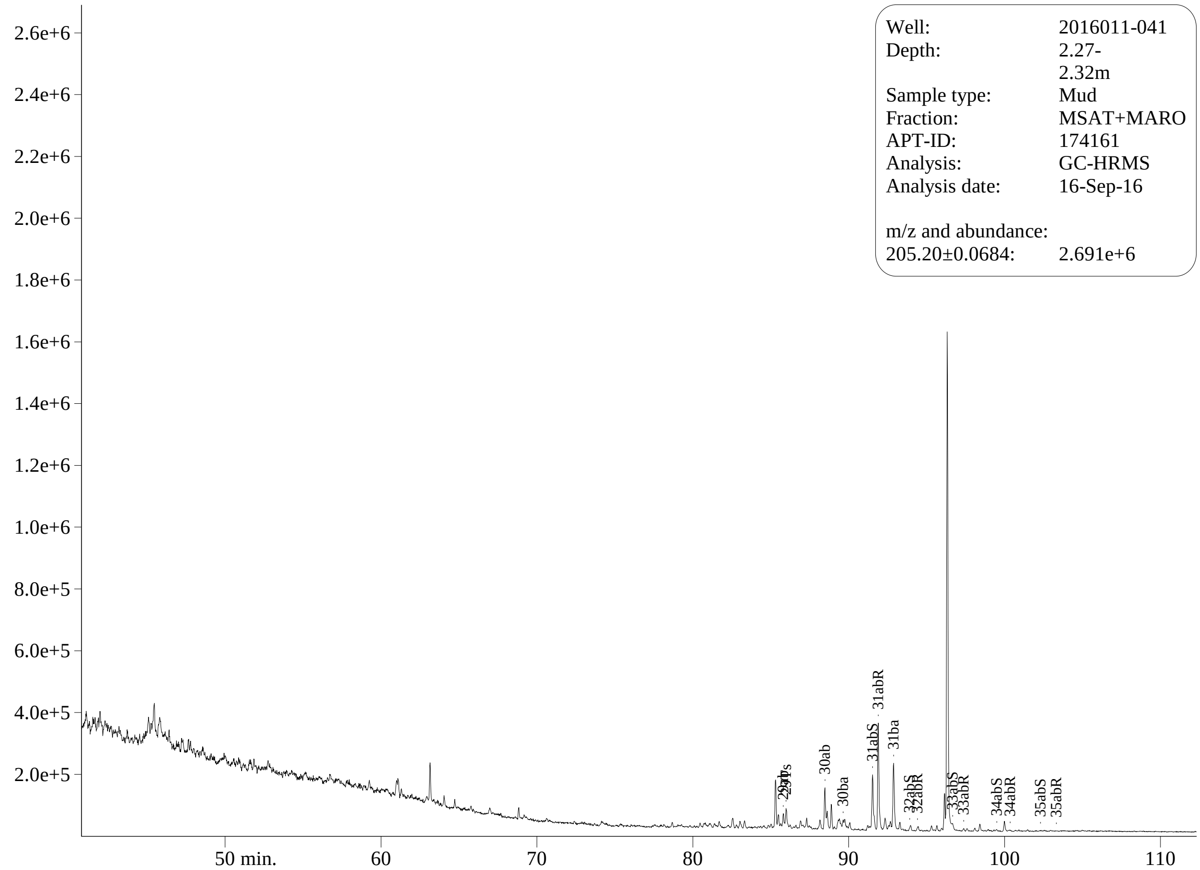

Well: 2015018-0009
Depth: 2.00-2.06m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174218
Analysis: GC-HRMS
Analysis date: 20-Sep-16
m/z and abundance:
231.21±0.0771: 5.343e+4
6.0e+4
5.5e+4
5.0e+4
4.5e+4
4.0e+4
3.5e+4
3.0e+4
2.5e+4
2.0e+4
1.5e+4
1.0e+4
5.0e+3
50 min.
60
70
80
90
100

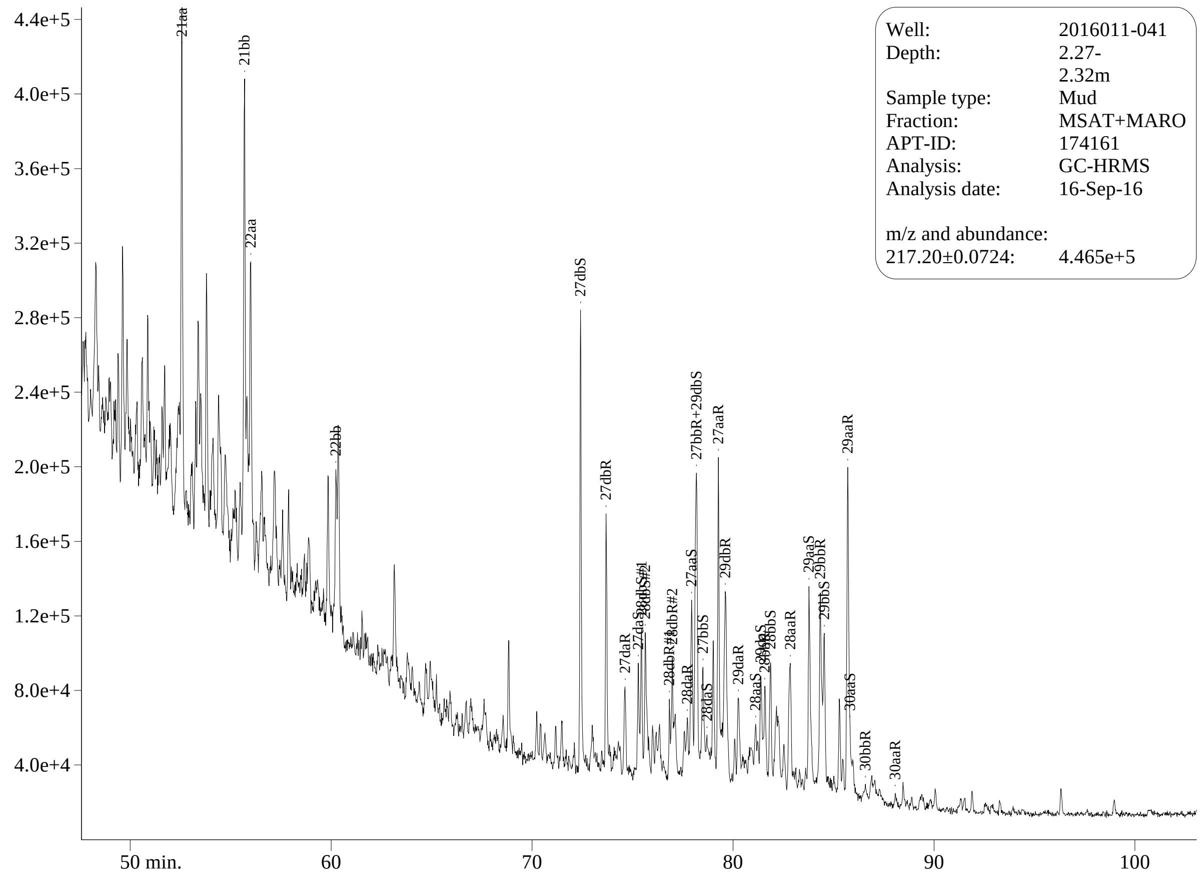


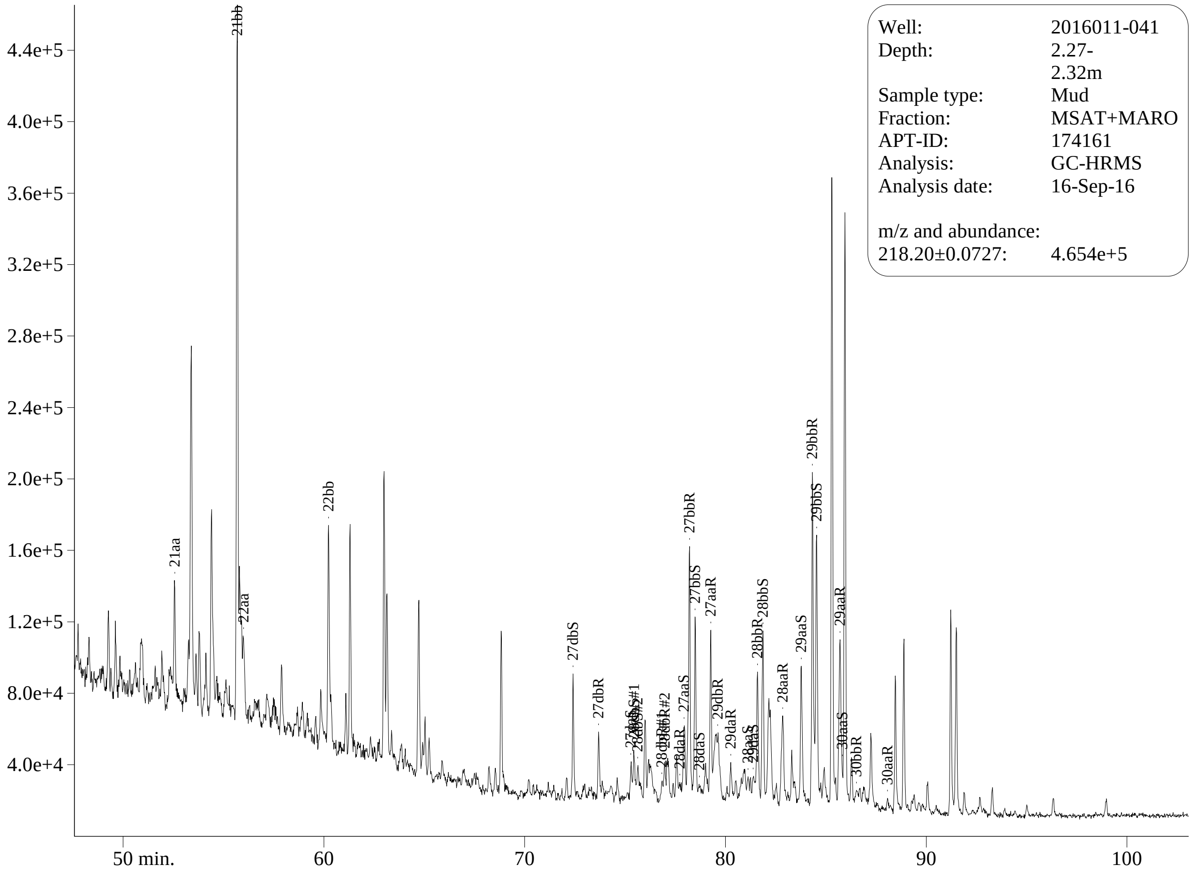
1.3e+4
1.2e+4
1.1e+4
1.0e+4
9.0e+3
8.0e+3
7.0e+3
6.0e+3
5.0e+3
4.0e+3
3.0e+3
2.0e+3
1.0e+3
50 min.
60
70
80
90
100
27dbS
27dbR
27daR
27daS
28dbS#1
28dbS#2
28dbR#1
28dbR#2
28daR
28daS
27bbR+29dbS
29dbR
29daR
29daS
Well: 2015018-0009
Depth: 2.00-2.06m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174218
Analysis: GC-HRMS
Analysis date: 20-Sep-16
m/z and abundance:
259.24±0.0864: 1.308e+4


Well: 2016011-041
Depth: 2.27-2.32m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174161
Analysis: GC-HRMS
Analysis date: 16-Sep-16
m/z and abundance:
177.16±0.0591: 1.348e+6
1.3e+6
1.2e+6
1.1e+6
1.0e+6
9.0e+5
8.0e+5
7.0e+5
6.0e+5
5.0e+5
4.0e+5
3.0e+5
2.0e+5
1.0e+5
50 min.
60
70
80
90
100
110
24/4
27Ts
25nor28ab
27Tm
25nor29ab
28ab
25nor30ab
29ab
29Ts
29ba
25nor31ab
30ba
31abS
31abR
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR

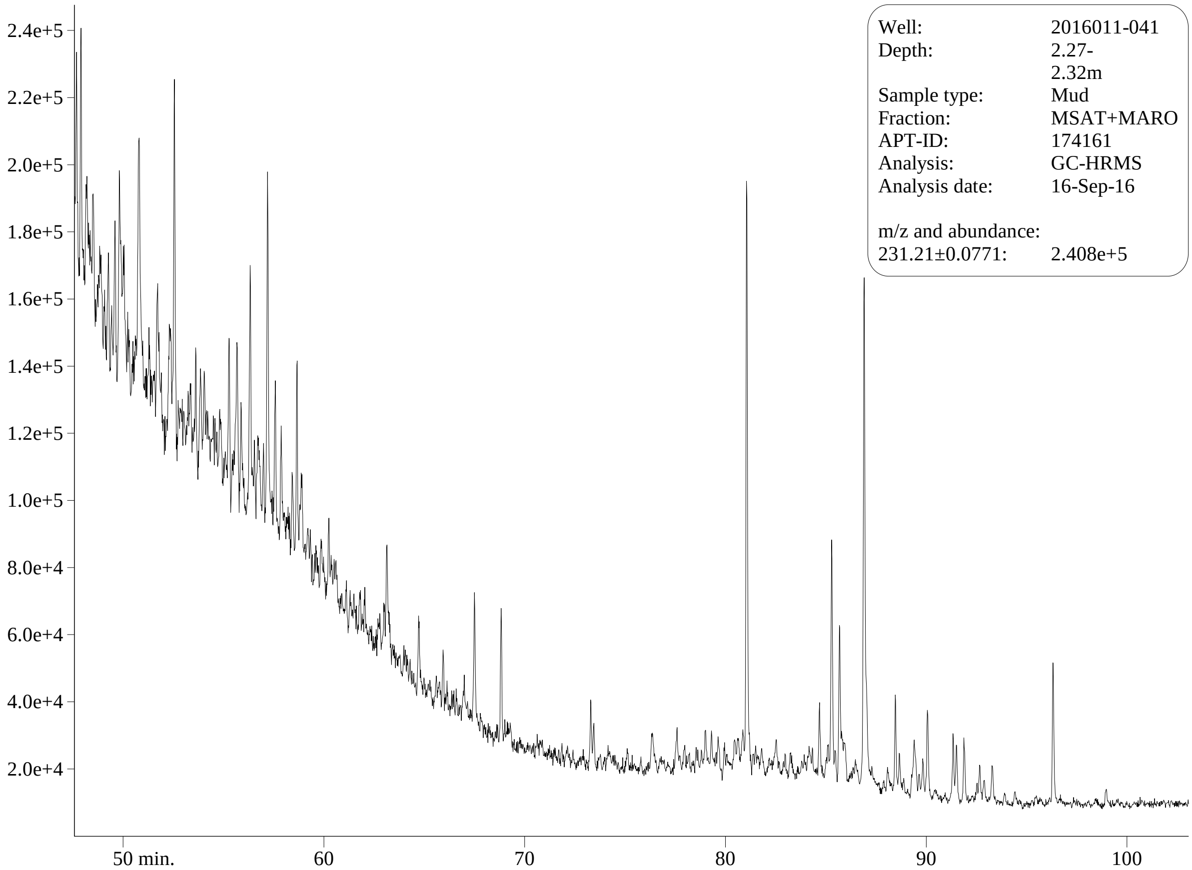

Well: 2016011-041
Depth: 2.27-2.32m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174161
Analysis: GC-HRMS
Analysis date: 16-Sep-16
m/z and abundance:
191.18±0.0637: 2.027e+6
2.0e+6
1.8e+6
1.6e+6
1.4e+6
1.2e+6
1.0e+6
8.0e+5
6.0e+5
4.0e+5
2.0e+5
50 min.
60
70
80
90
100
110
19/3
20/3
21/3
22/3
23/3
24/3
25/3R
25/3S
24/4
26/3R
26/3S
28/3R
28/3S
29/3R
29/3S
27Ts
30/3R
30/3S
27Tm
28ab
25nor30ab
29Ts
29ab
30d
29ba
30ab
30ba
31abS
31abR
30G
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR


Well: 2016011-041
Depth: 2.27-2.32m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174161
Analysis: GC-HRMS
Analysis date: 16-Sep-16
m/z and abundance:
205.20±0.0684: 2.691e+6

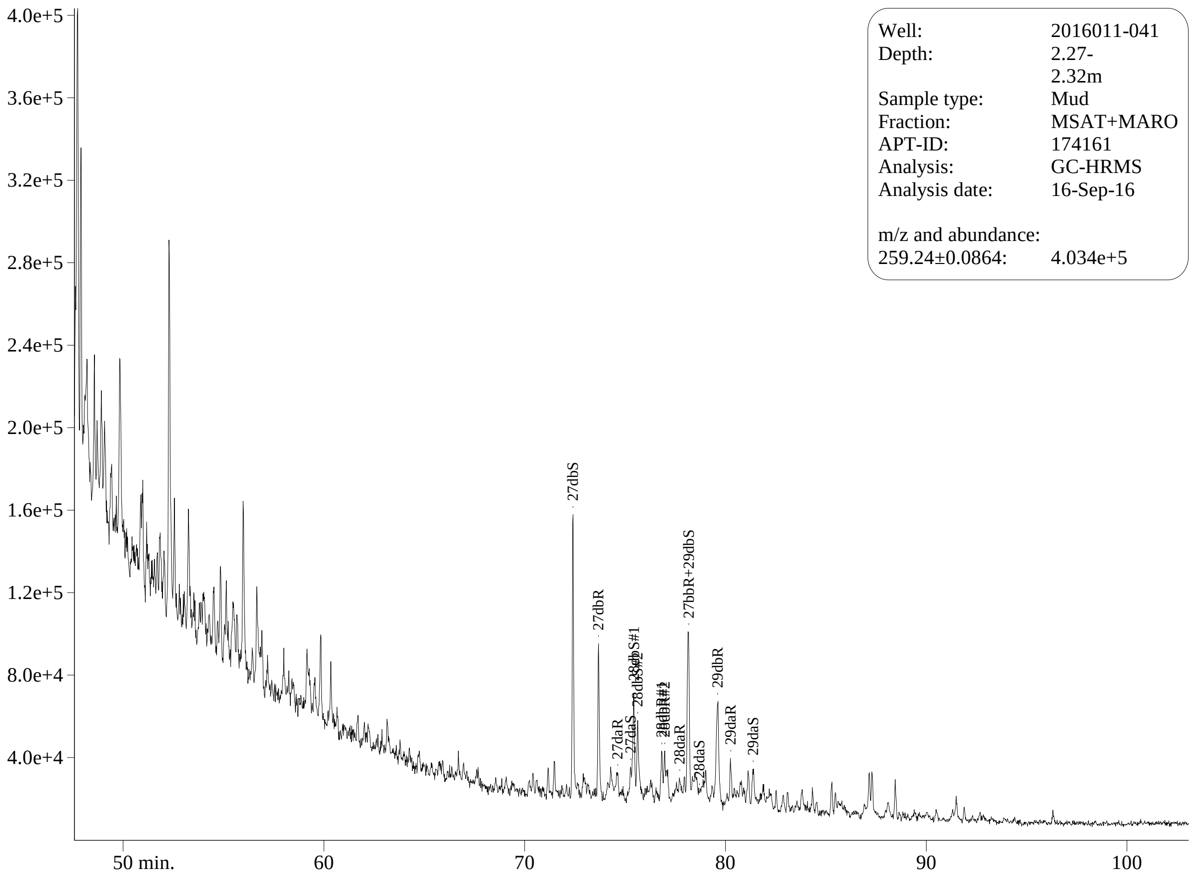

Well: 2016011-041
Depth: 2.27-2.32m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174161
Analysis: GC-HRMS
Analysis date: 16-Sep-16
m/z and abundance:
217.20±0.0724: 4.465e+5

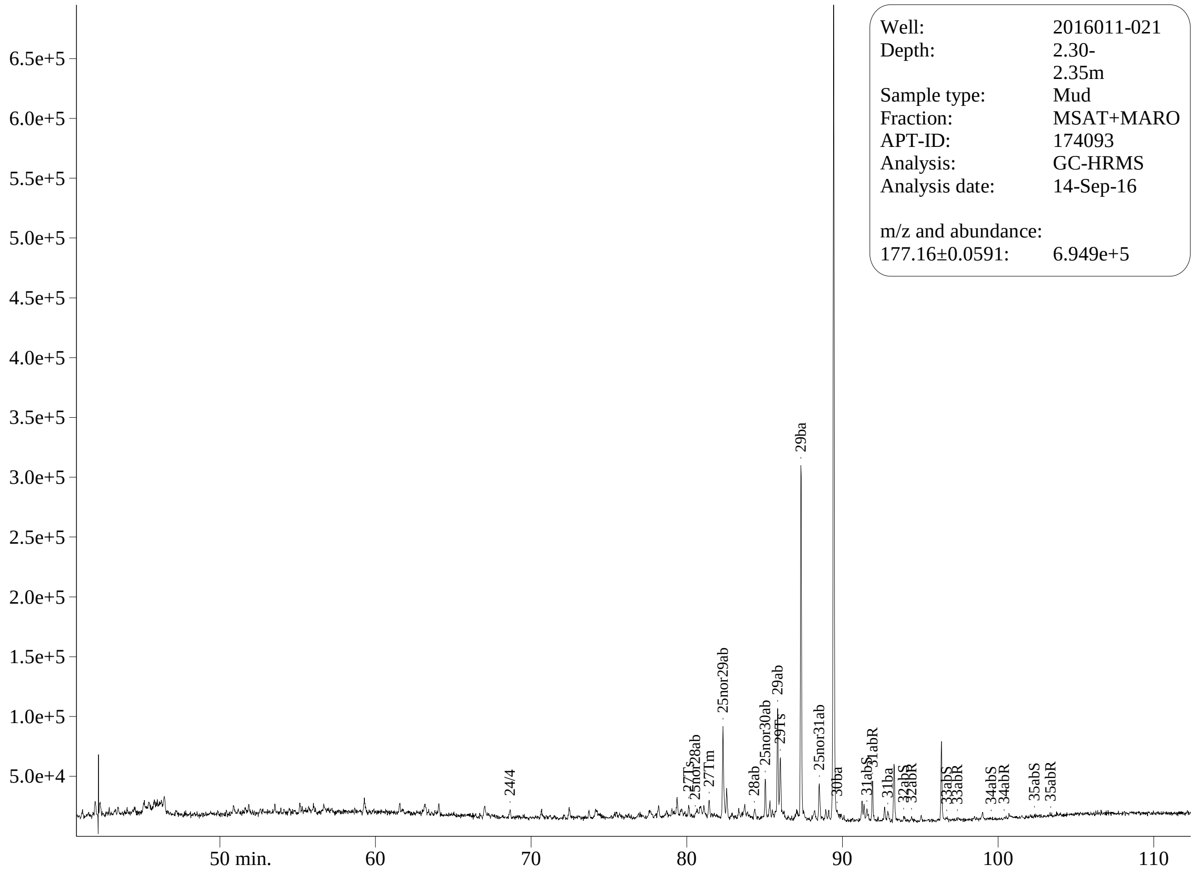


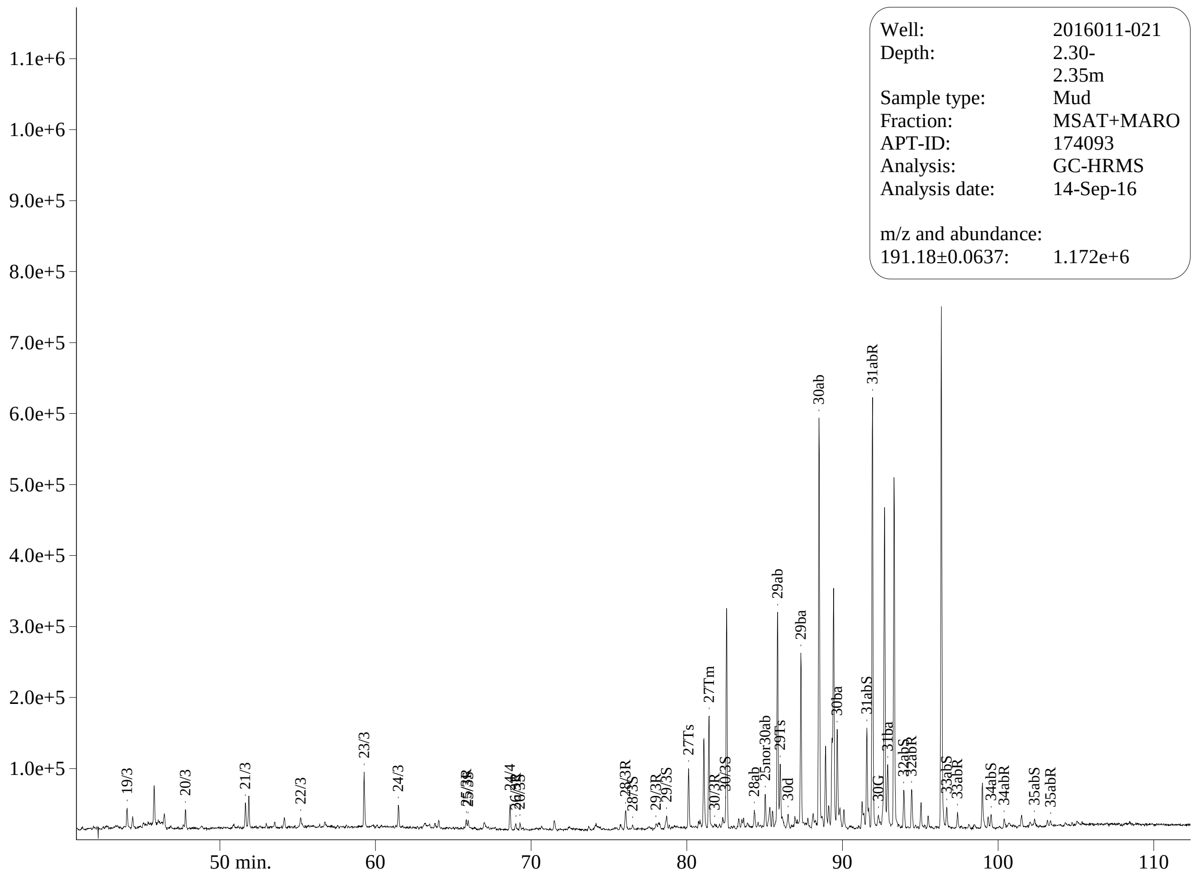
Well:	2016011-041
Depth:	2.27-2.32m
Sample type:	Mud
Fraction:	MSAT+MARO
APT-ID:	174161
Analysis:	GC-HRMS
Analysis date:	16-Sep-16
m/z and abundance:	
218.20±0.0727:	4.654e+5

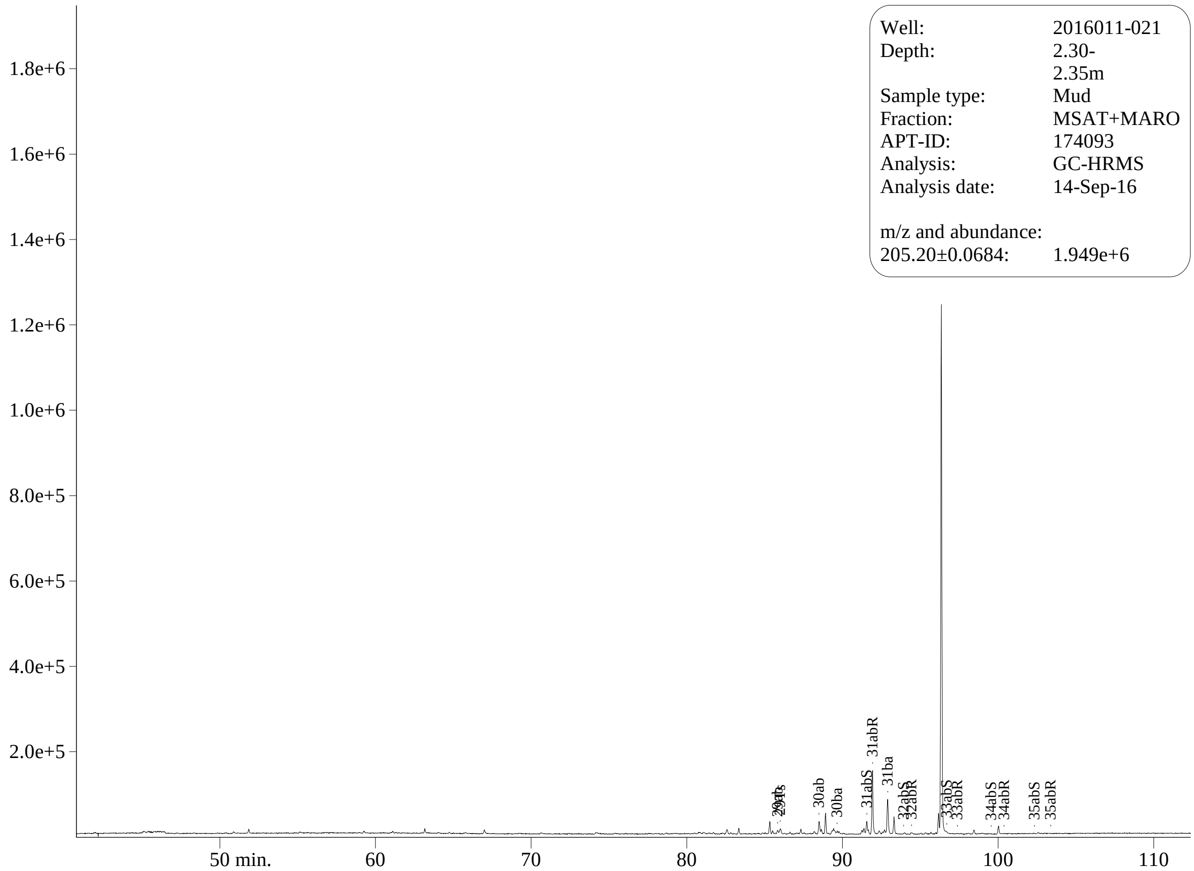


Well:	2016011-041
Depth:	2.27-2.32m
Sample type:	Mud
Fraction:	MSAT+MARO
APT-ID:	174161
Analysis:	GC-HRMS
Analysis date:	16-Sep-16
m/z and abundance:	
231.21±0.0771:	2.408e+5

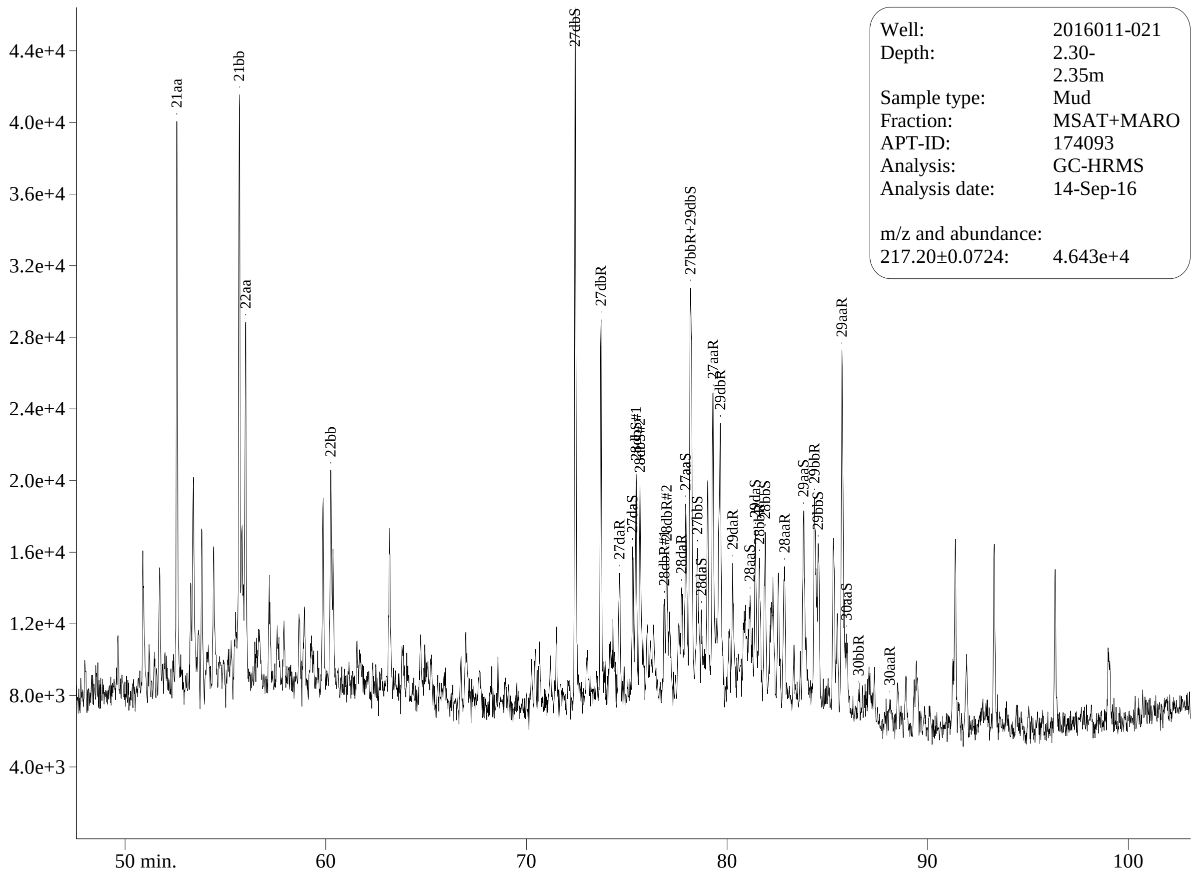

Well: 2016011-041
Depth: 2.27-2.32m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174161
Analysis: GC-HRMS
Analysis date: 16-Sep-16
m/z and abundance:
259.24±0.0864: 4.034e+5
4.0e+5
3.6e+5
3.2e+5
2.8e+5
2.4e+5
2.0e+5
1.6e+5
1.2e+5
8.0e+4
4.0e+4
50 min.
60
70
80
90
100
27dbS
27dbR
27daR
27daS
28dbS#1
28dbS#2
28dbR#1
28dbR#2
28daR
28daS
27bbR+29dbS
29dbR
29daR
29daS


Well: 2016011-021
Depth: 2.30-2.35m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174093
Analysis: GC-HRMS
Analysis date: 14-Sep-16
m/z and abundance:
177.16±0.0591: 6.949e+5
29ba
25nor29ab
29ab
25nor30ab
29Ts
25nor31ab
27Ts
25nor28ab
27Tm
28ab
24/4
30ba
31abS
31abR
31ba
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR
50 min.
60
70
80
90
100
110

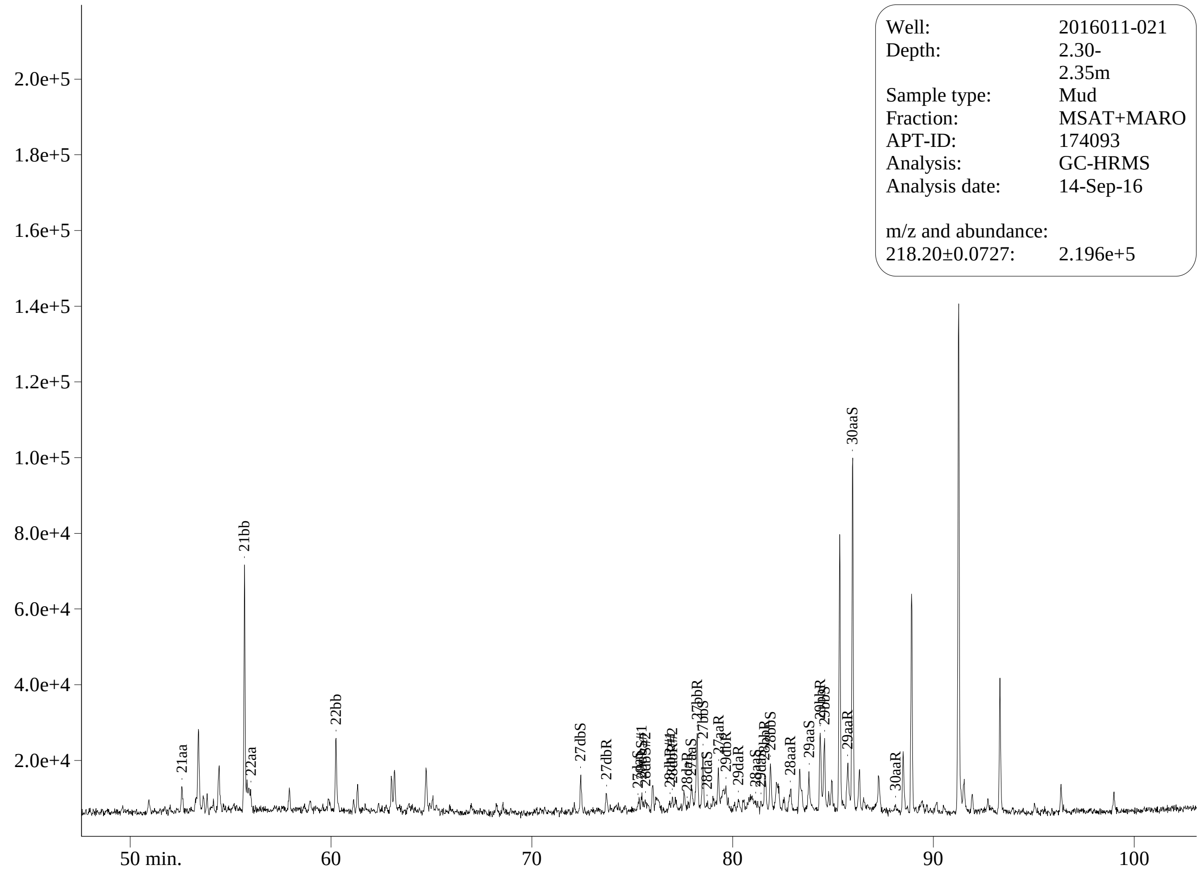

Well: 2016011-021
Depth: 2.30-2.35m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174093
Analysis: GC-HRMS
Analysis date: 14-Sep-16
m/z and abundance:
191.18±0.0637: 1.172e+6
31abR
30ab
29ab
29ba
27Tm
27Ts
30ba
31abS
31ba
32abS
32abR
25nor30ab
29Ts
30d
30G
28ab
30/3R
30/3S
19/3
20/3
21/3
22/3
23/3
24/3
28/3R
28/3S
29/3R
29/3S
33abS
33abR
34abS
34abR
35abS
35abR
50 min.
60
70
80
90
100
110

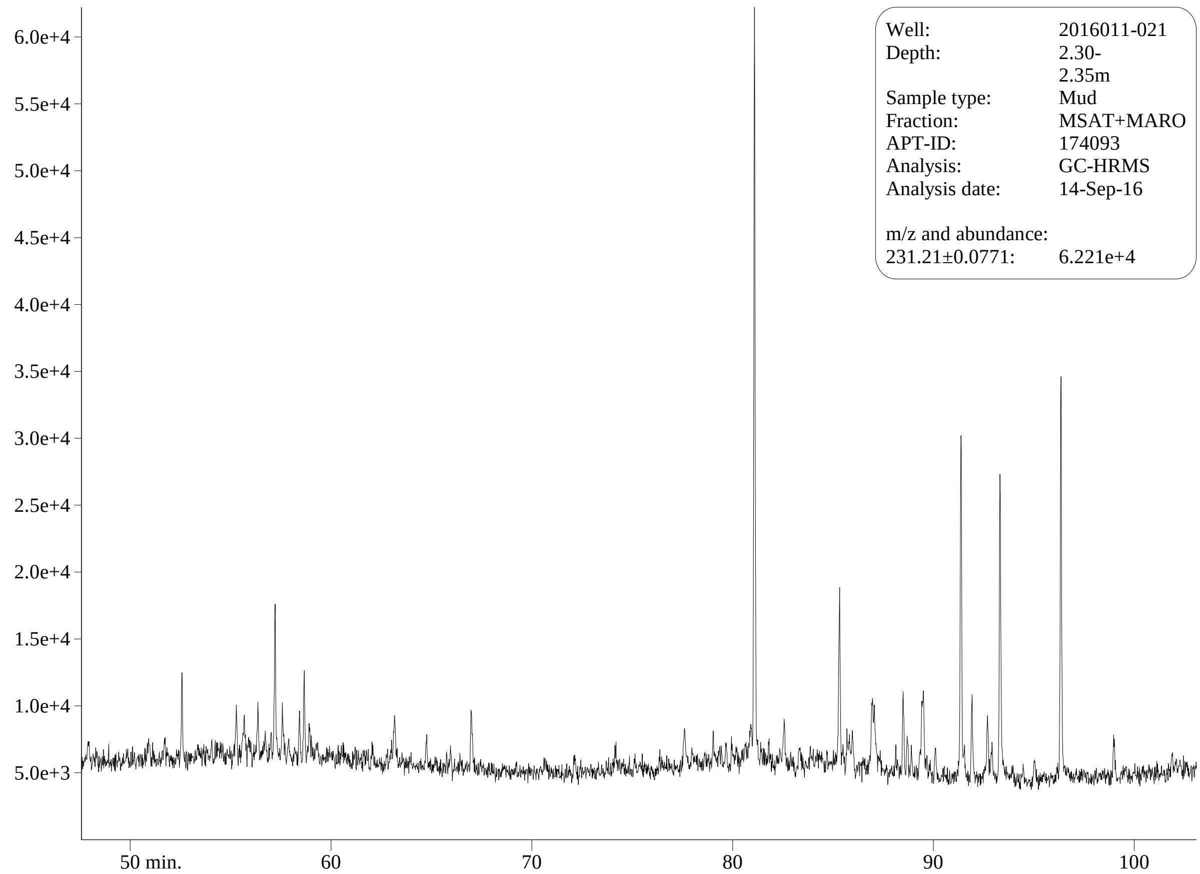


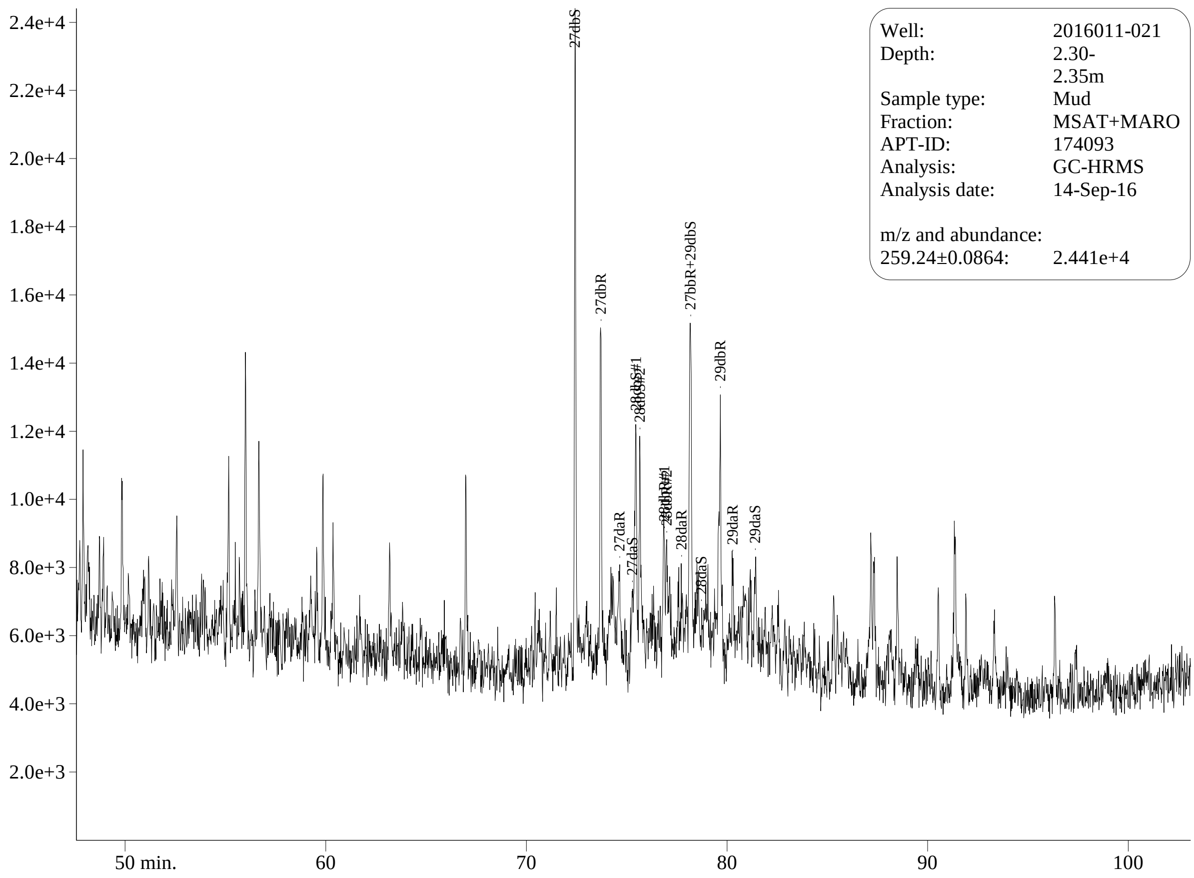
Well: 2016011-021
Depth: 2.30-2.35m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174093
Analysis: GC-HRMS
Analysis date: 14-Sep-16
m/z and abundance:
205.20±0.0684: 1.949e+6
1.8e+6
1.6e+6
1.4e+6
1.2e+6
1.0e+6
8.0e+5
6.0e+5
4.0e+5
2.0e+5
50 min.
60
70
80
90
100
110
30ab
30ba
31abS
31abR
31ba
33abS
33abR
34abS
34abR
35abS
35abR



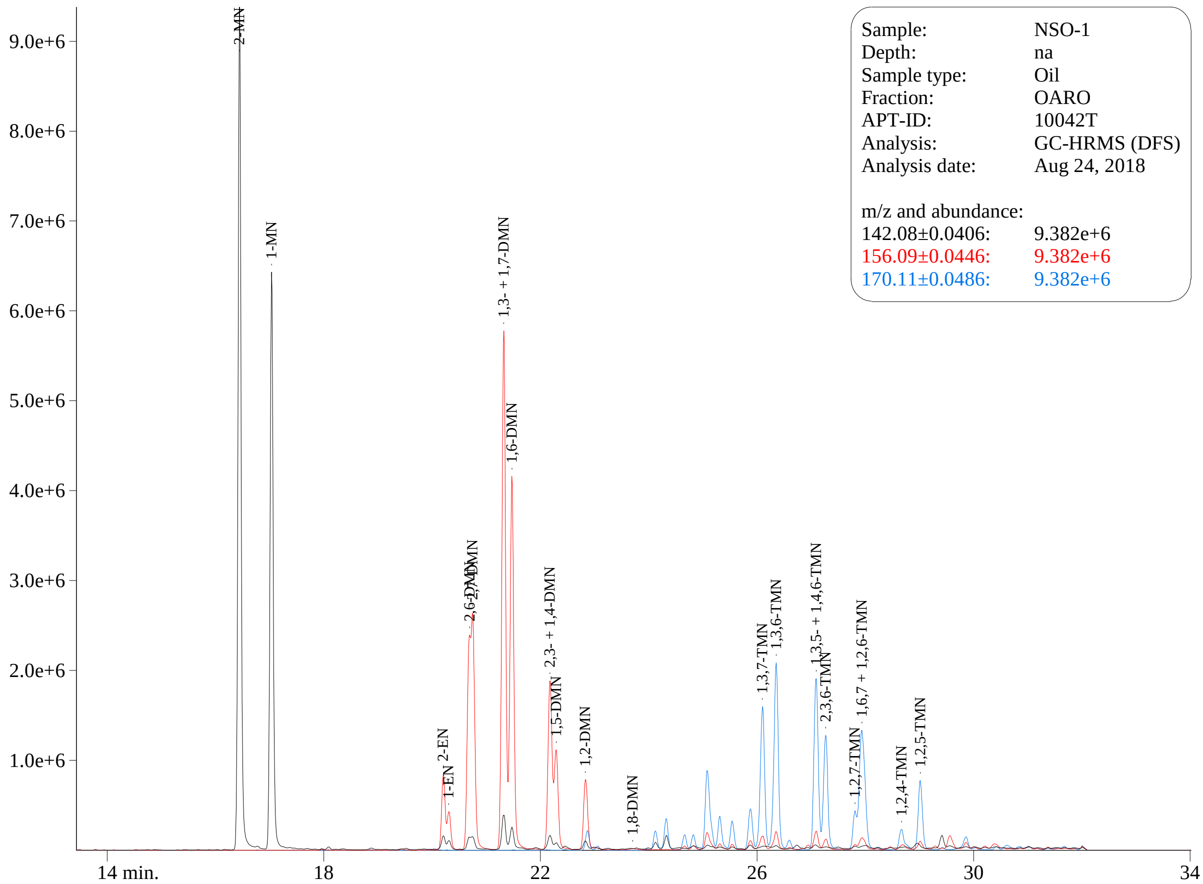
Well: 2016011-021
Depth: 2.30-2.35m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174093
Analysis: GC-HRMS
Analysis date: 14-Sep-16
m/z and abundance:
217.20±0.0724: 4.643e+4
4.4e+4
4.0e+4
3.6e+4
3.2e+4
2.8e+4
2.4e+4
2.0e+4
1.6e+4
1.2e+4
8.0e+3
4.0e+3
50 min.
60
70
80
90
100
21aa
21bb
22aa
22bb
27dbS
27dbR
27daR
27daS
27bbR+29dbS
27aaS
27bbS
28daR
28daS
27aaR
29dbR
29daR
28aaS
28aaR
29aaS
29bbR
29bbS
29aaR
30aaS
30bbR
30aaR


Well: 2016011-021
Depth: 2.30-2.35m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174093
Analysis: GC-HRMS
Analysis date: 14-Sep-16
m/z and abundance:
218.20±0.0727: 2.196e+5
21aa
21bb
22aa
22bb
27dbS
27dbR
30aaS
29aaS
28aaR
29aaR
30aaR
50 min.
60
70
80
90
100

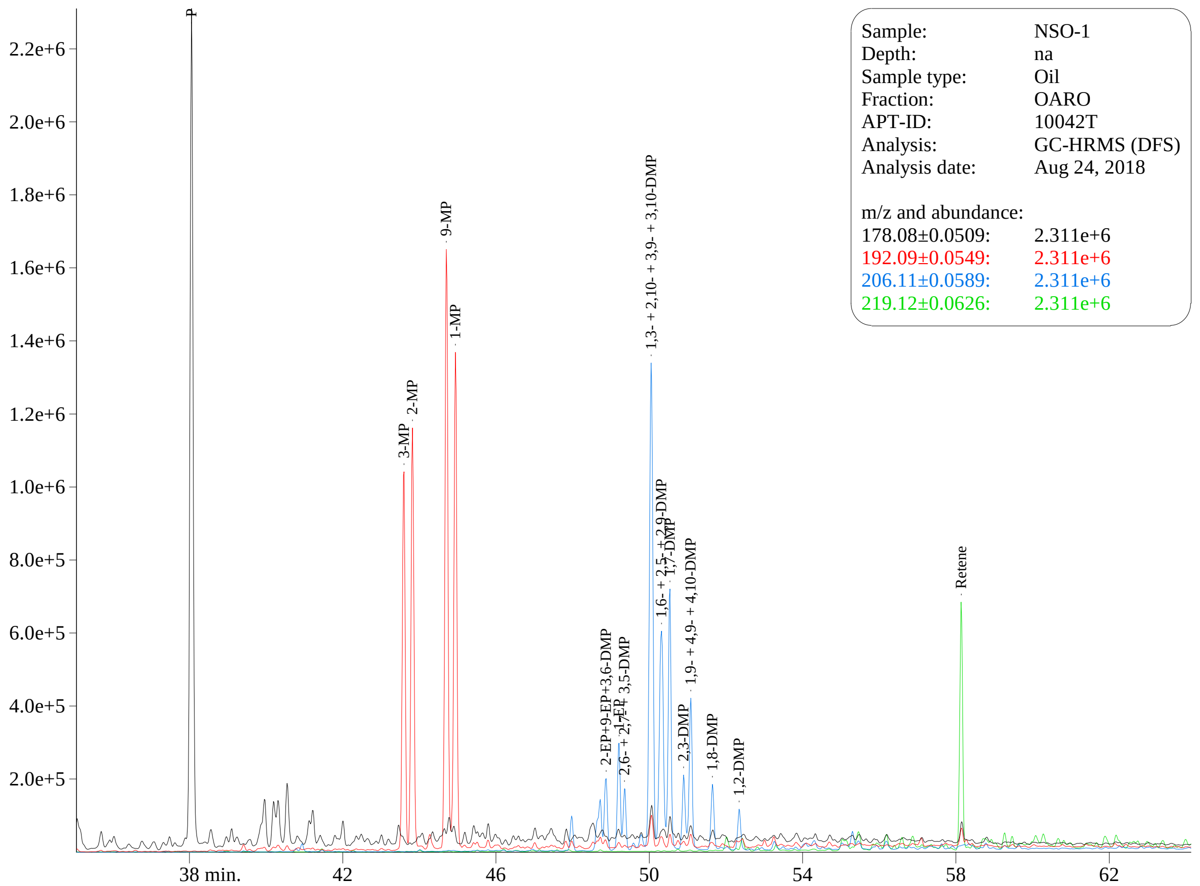

Well: 2016011-021
Depth: 2.30-2.35m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174093
Analysis: GC-HRMS
Analysis date: 14-Sep-16
m/z and abundance:
231.21±0.0771: 6.221e+4
50 min.
60
70
80
90
100


Well: 2016011-021
Depth: 2.30-2.35m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174093
Analysis: GC-HRMS
Analysis date: 14-Sep-16
m/z and abundance:
259.24±0.0864: 2.441e+4
27dbS
27dbR
27daR
27daS
28dbS#1
28dbS#2
28dbR#1
28dbR#2
28daR
28daS
27bbR+29dbS
29dbR
29daR
29daS
2.4e+4
2.2e+4
2.0e+4
1.8e+4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
50 min.
60
70
80
90
100

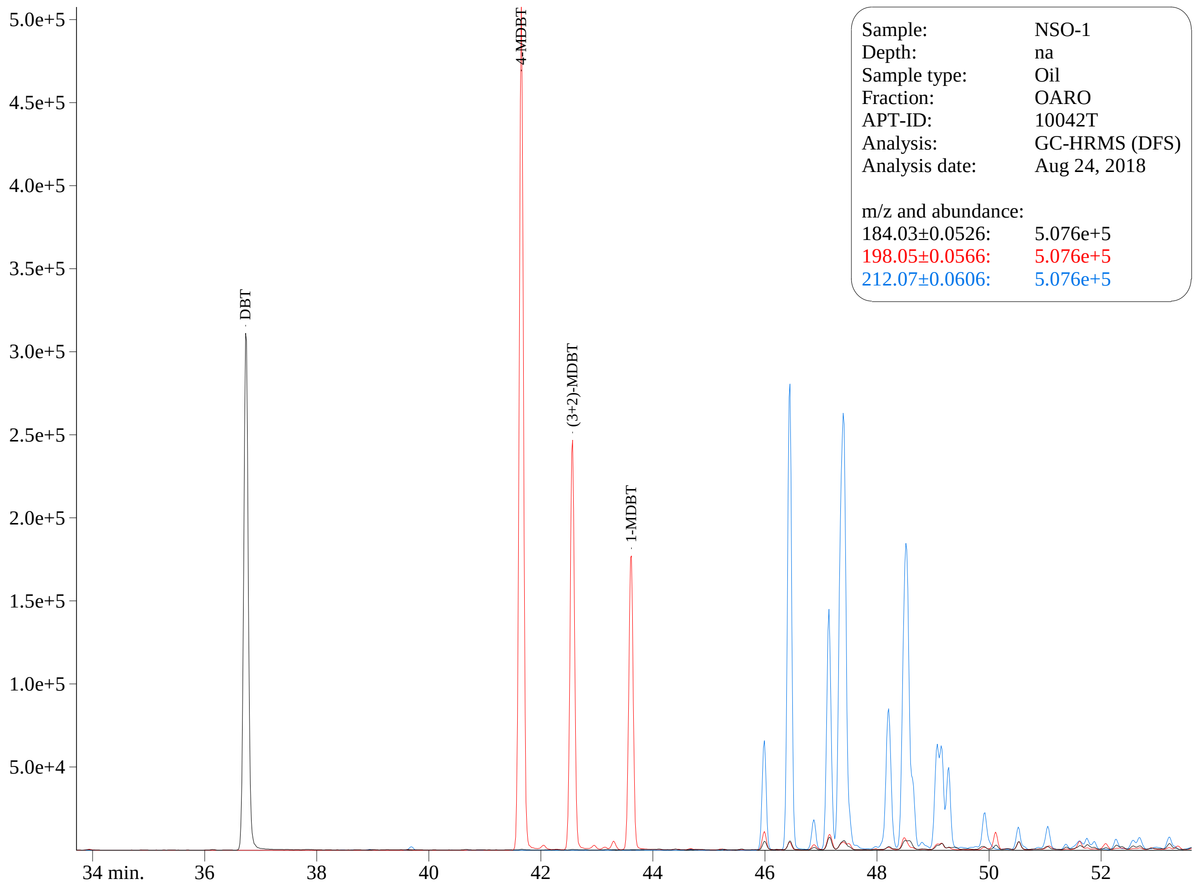
GC-MS Chromatograms of Aromatic Hydrocarbons



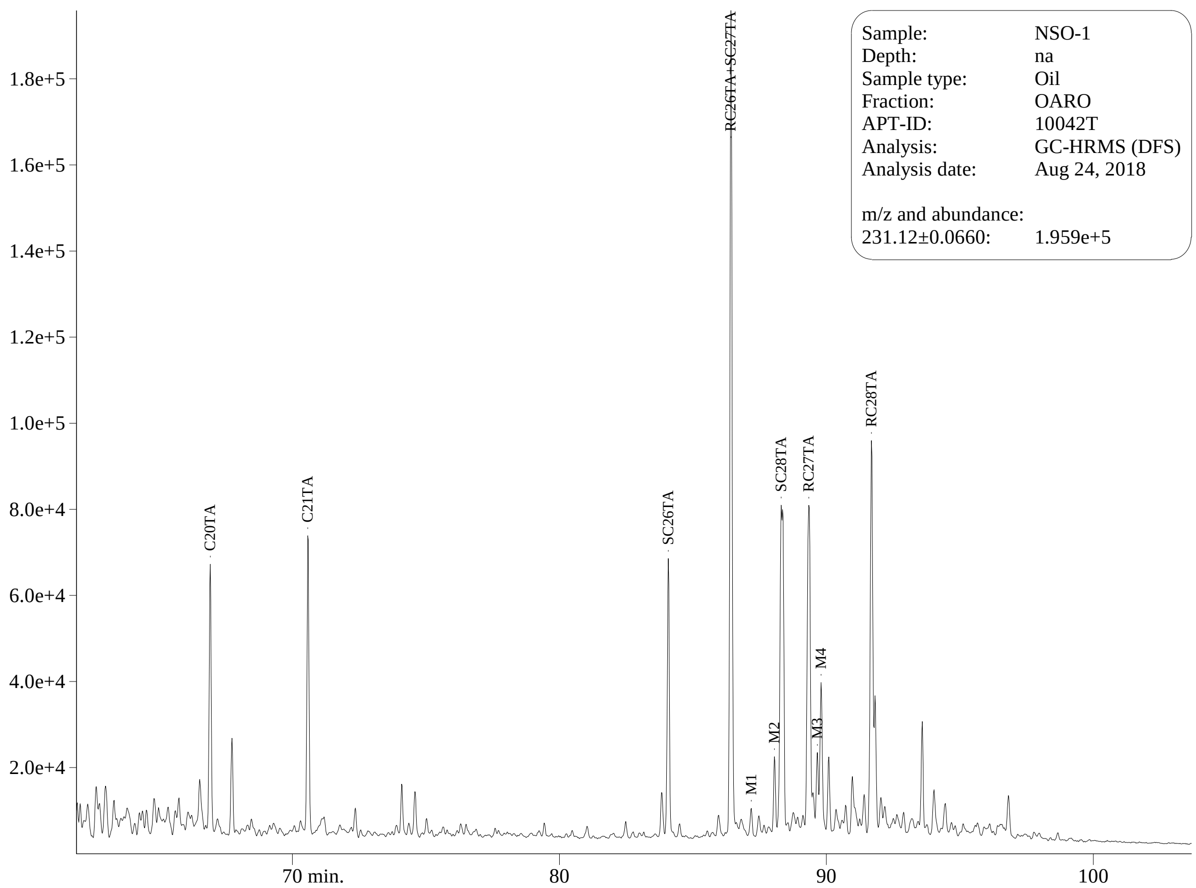
Sample: NSO-1
Depth: na
Sample type: Oil
Fraction: OARO
APT-ID: 10042T
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
142.08±0.0406: 9.382e+6
156.09±0.0446: 9.382e+6
170.11±0.0486: 9.382e+6
2-MN
1-MN
1,3- + 1,7-DMN
1,6-DMN
2,6-DMN
2,7-DMN
2-EN
1-EN
2,3- + 1,4-DMN
1,5-DMN
1,2-DMN
1,8-DMN
1,3,7-TMN
1,3,6-TMN
1,3,5- + 1,4,6-TMN
2,3,6-TMN
1,6,7 + 1,2,6-TMN
1,2,7-TMN
1,2,4-TMN
1,2,5-TMN
9.0e+6
8.0e+6
7.0e+6
6.0e+6
5.0e+6
4.0e+6
3.0e+6
2.0e+6
1.0e+6
14 min.
18
22
26
30
34



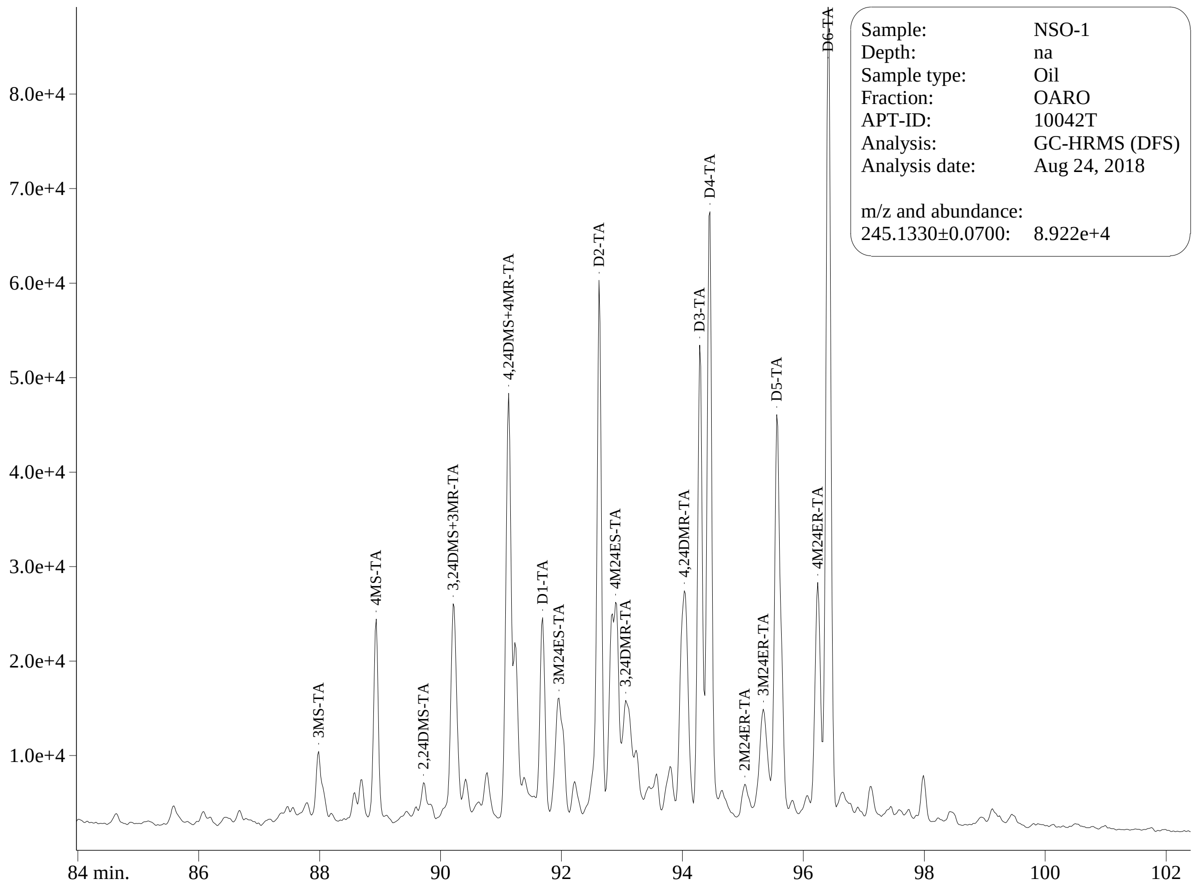
Sample: NSO-1
Depth: na
Sample type: Oil
Fraction: OARO
APT-ID: 10042T
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
178.08±0.0509: 2.311e+6
192.09±0.0549: 2.311e+6
206.11±0.0589: 2.311e+6
219.12±0.0626: 2.311e+6
P
9-MP
1-MP
2-MP
3-MP
1,3- + 2,10- + 3,9- + 3,10-DMP
1,6- + 2,5- + 2,9-DMP
1,7-DMP
1,9- + 4,9- + 4,10-DMP
2-EP+9-EP+3,6-DMP
1-EP
2,6- + 2,7- + 3,5-DMP
2,3-DMP
1,8-DMP
1,2-DMP
Retene
2.2e+6
2.0e+6
1.8e+6
1.6e+6
1.4e+6
1.2e+6
1.0e+6
8.0e+5
6.0e+5
4.0e+5
2.0e+5
38 min.
42
46
50
54
58
62

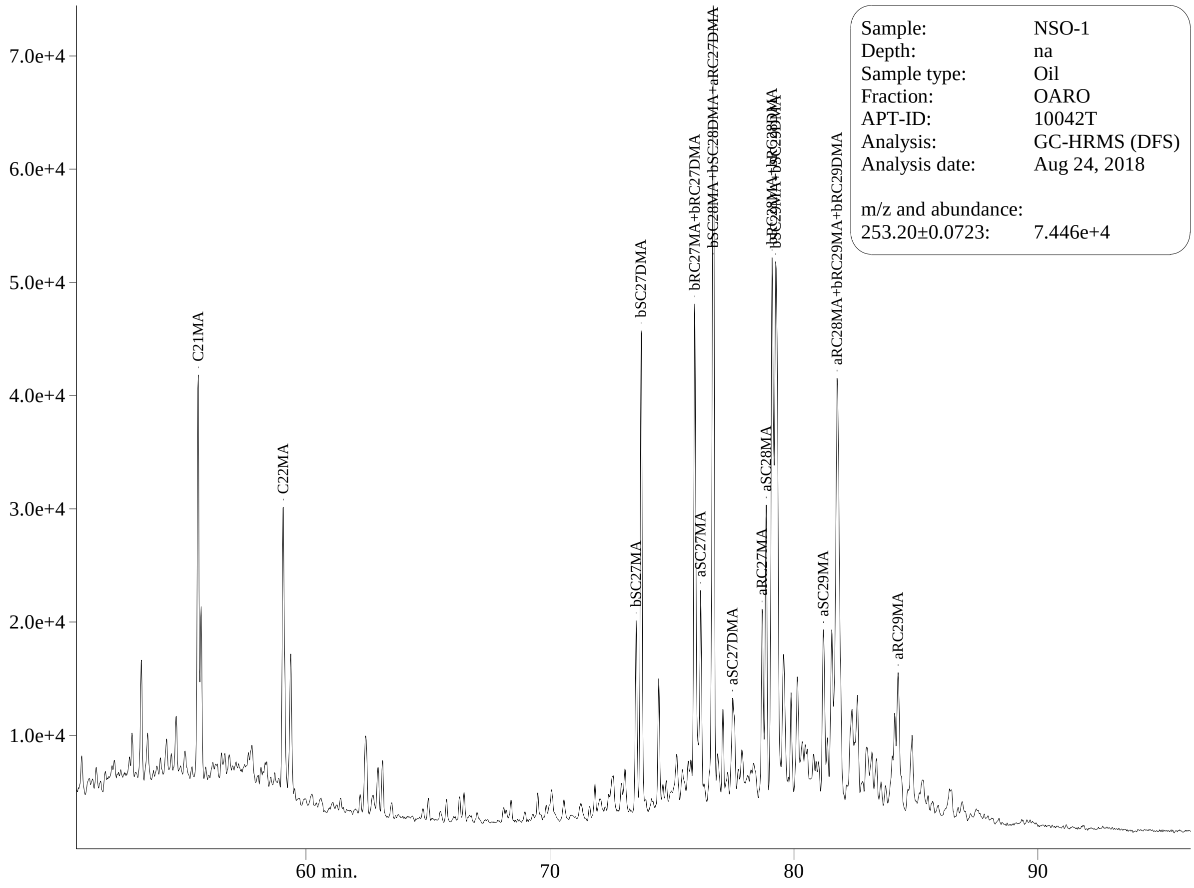


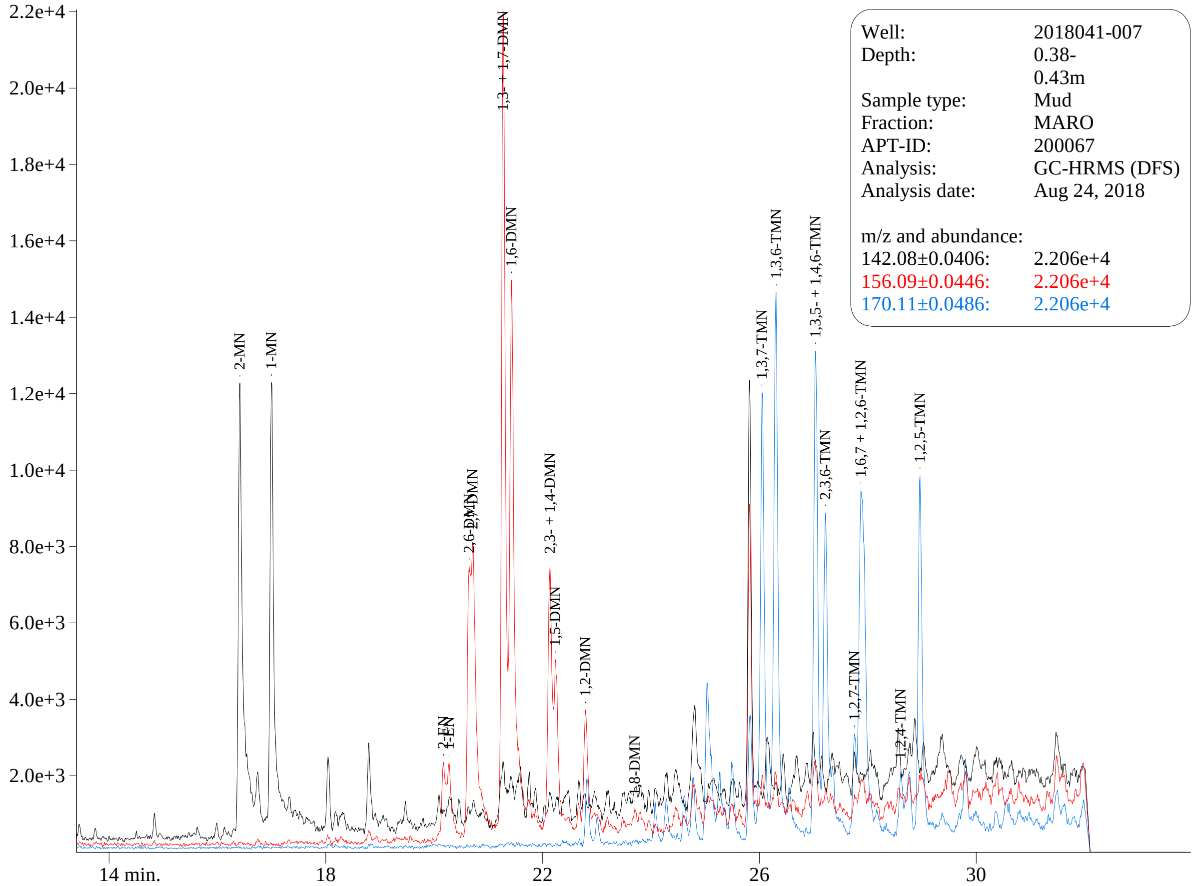
Sample: NSO-1
Depth: na
Sample type: Oil
Fraction: OARO
APT-ID: 10042T
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
184.03±0.0526: 5.076e+5
198.05±0.0566: 5.076e+5
212.07±0.0606: 5.076e+5
DBT
4-MDBT
(3+2)-MDBT
1-MDBT
5.0e+5
4.5e+5
4.0e+5
3.5e+5
3.0e+5
2.5e+5
2.0e+5
1.5e+5
1.0e+5
5.0e+4
34 min.
36
38
40
42
44
46
48
50
52



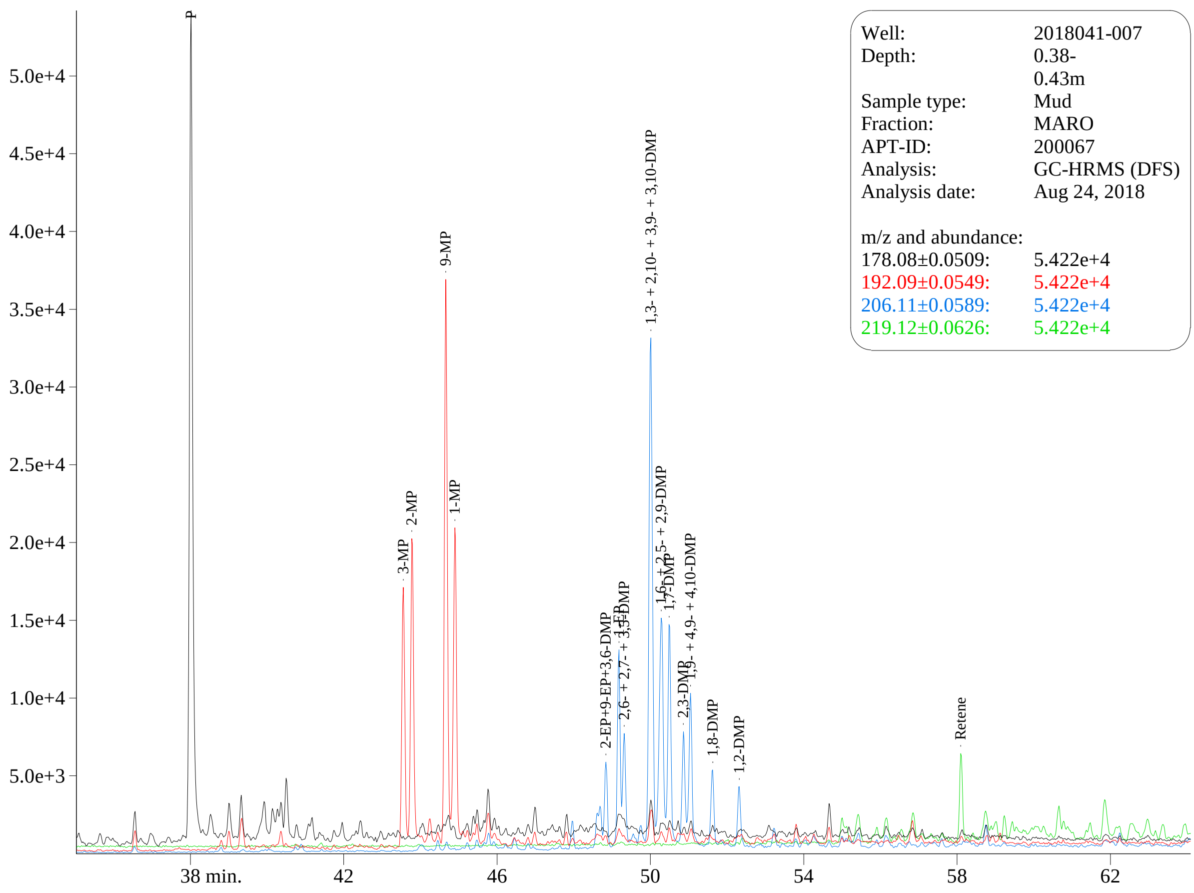
Sample: NSO-1
Depth: na
Sample type: Oil
Fraction: OARO
APT-ID: 10042T
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
231.12±0.0660: 1.959e+5
C20TA
C21TA
SC26TA
RC26TA+SC27TA
M1
M2
SC28TA
RC27TA
M3
M4
RC28TA
1.8e+5
1.6e+5
1.4e+5
1.2e+5
1.0e+5
8.0e+4
6.0e+4
4.0e+4
2.0e+4
70 min.
80
90
100


Sample: NSO-1
Depth: na
Sample type: Oil
Fraction: OARO
APT-ID: 10042T
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
245.1330±0.0700: 8.922e+4
3MS-TA
4MS-TA
2,24DMS-TA
3,24DMS+3MR-TA
4,24DMS+4MR-TA
D1-TA
3M24ES-TA
D2-TA
4M24ES-TA
3,24DMR-TA
4,24DMR-TA
D3-TA
D4-TA
2M24ER-TA
3M24ER-TA
D5-TA
4M24ER-TA
D6-TA
84 min.
86
88
90
92
94
96
98
100
102

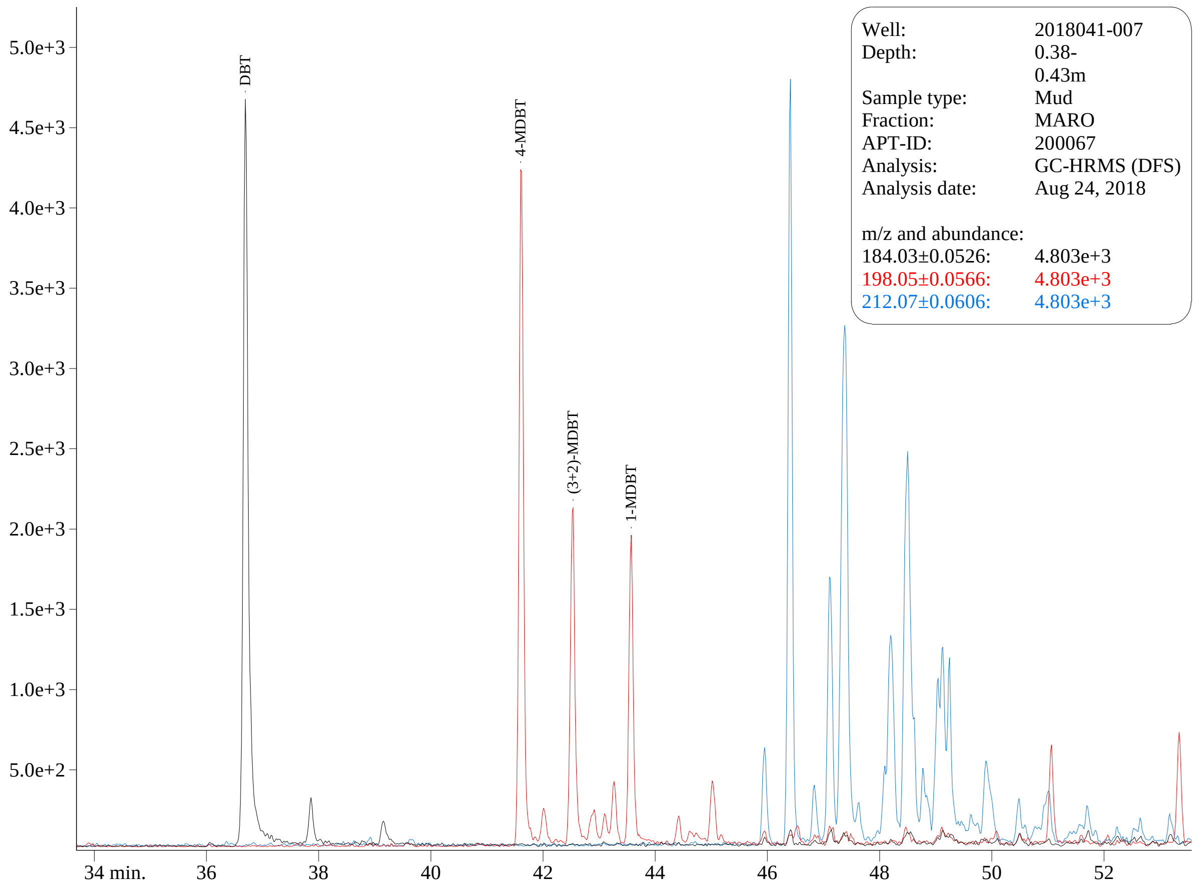

Sample: NSO-1
Depth: na
Sample type: Oil
Fraction: OARO
APT-ID: 10042T
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
253.20±0.0723: 7.446e+4
C21MA
C22MA
bSC27MA
bSC27DMA
bRC27MA+bRC27DMA
aSC27MA
bSC28MA+bSC28DMA+aRC27DMA
aSC27DMA
aRC27MA
aSC28MA
aSC29MA
aRC28MA+bRC29MA+bRC29DMA
aRC29MA
60 min.
70
80
90

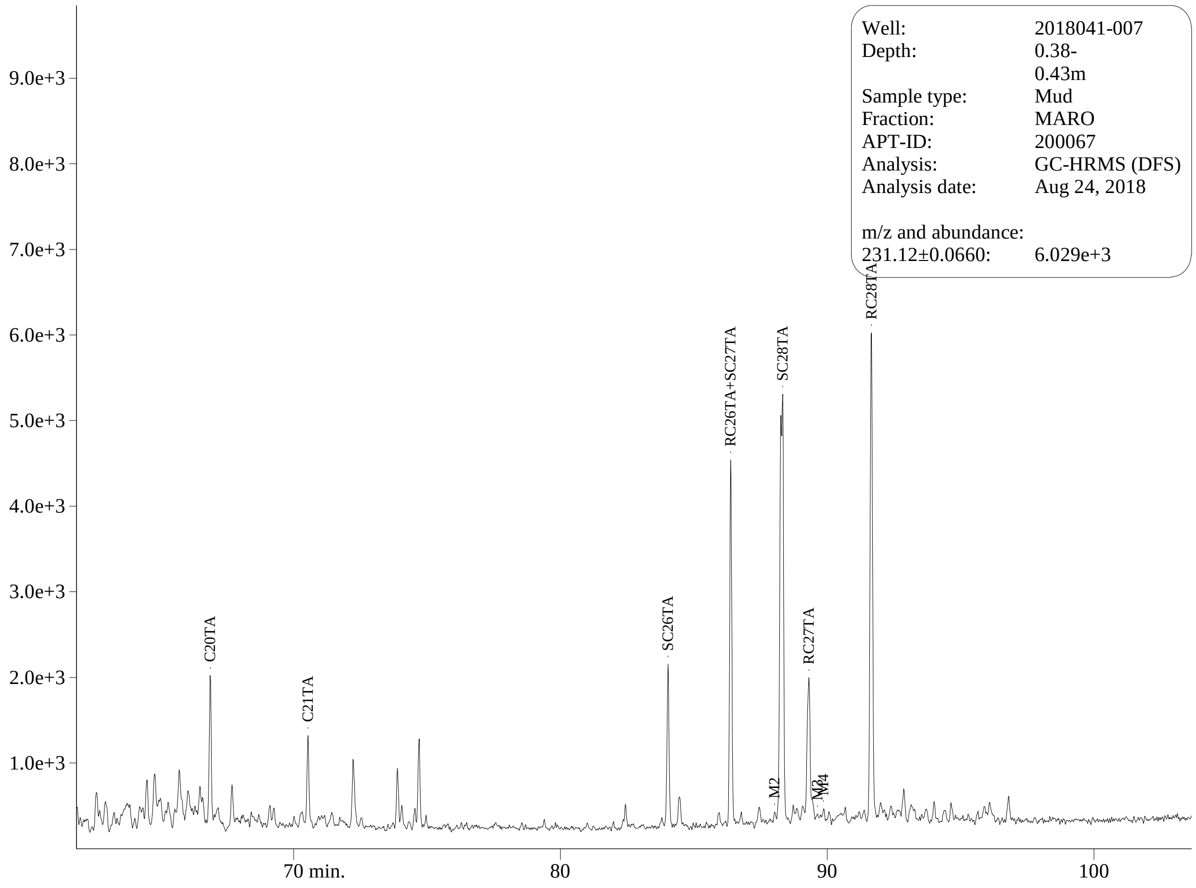


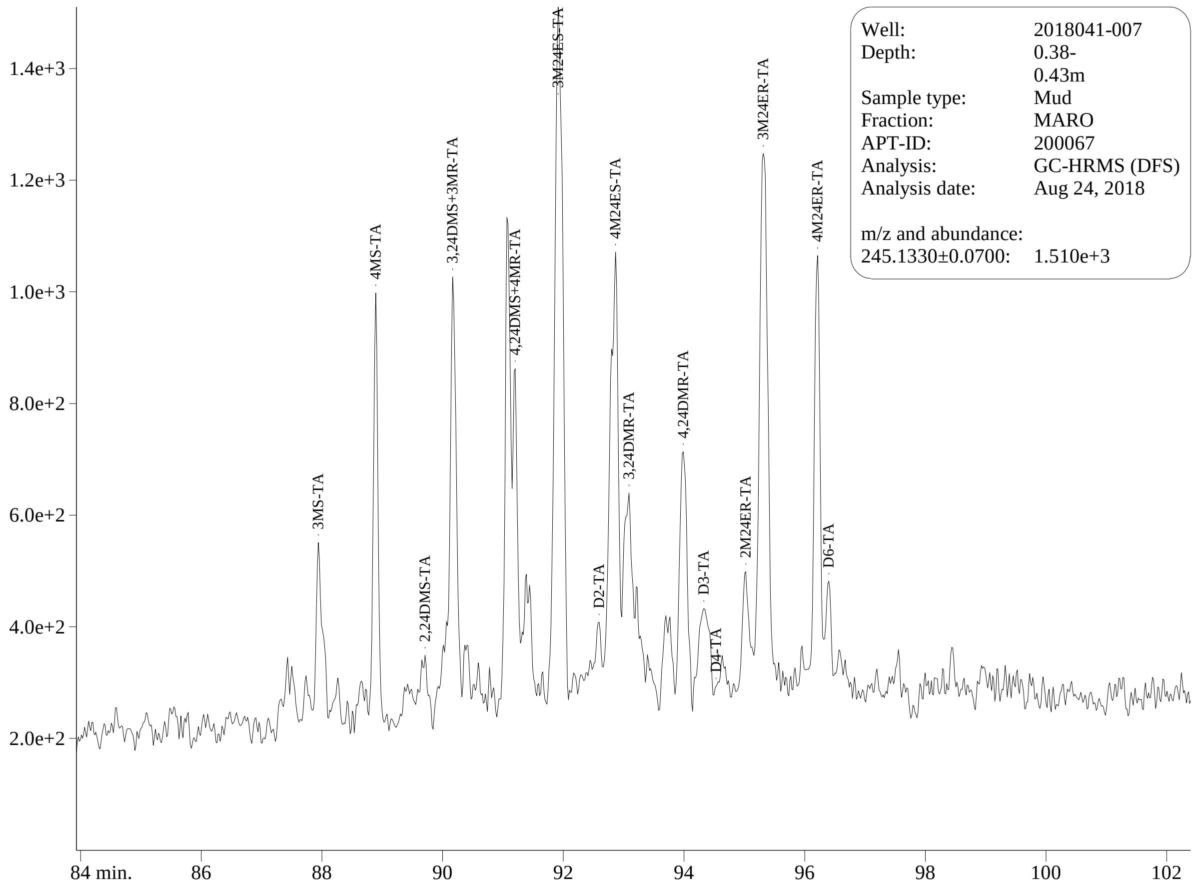
2.2e+4
2.0e+4
1.8e+4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
14 min.
18
22
26
30
2-MN
1-MN
2-EN
1-EN
2,6-DMN
2,7-DMN
1,3- + 1,7-DMN
1,6-DMN
2,3- + 1,4-DMN
1,5-DMN
1,2-DMN
1,8-DMN
1,3,7-TMN
1,3,6-TMN
1,3,5- + 1,4,6-TMN
2,3,6-TMN
1,2,7-TMN
1,6,7 + 1,2,6-TMN
1,2,4-TMN
1,2,5-TMN
Well: 2018041-007
Depth: 0.38-0.43m
Sample type: Mud
Fraction: MARO
APT-ID: 200067
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
142.08±0.0406: 2.206e+4
156.09±0.0446: 2.206e+4
170.11±0.0486: 2.206e+4

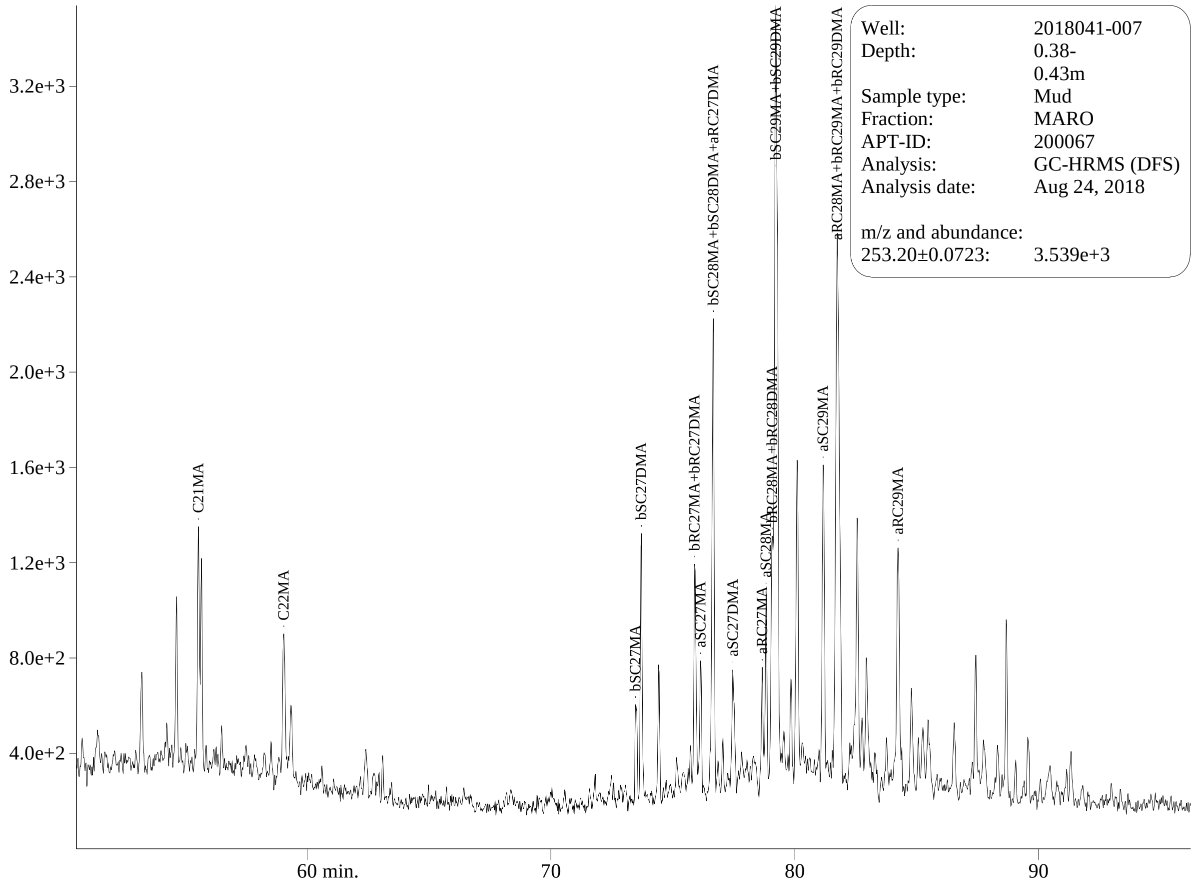


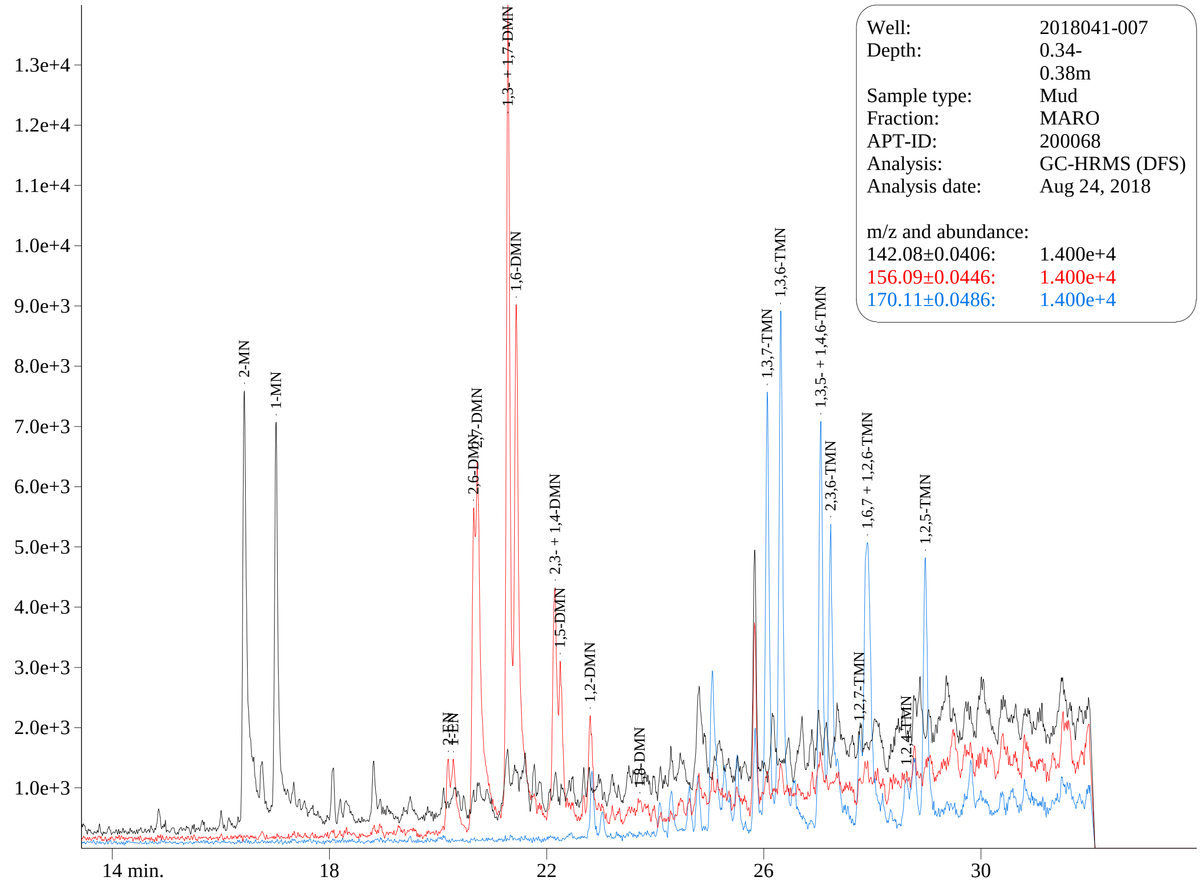
5.0e+4
4.5e+4
4.0e+4
3.5e+4
3.0e+4
2.5e+4
2.0e+4
1.5e+4
1.0e+4
5.0e+3
38 min.
42
46
50
54
58
62
P
3-MP
2-MP
9-MP
1-MP
2-EP+9-EP+3,6-DMP
3-EP
2,6- + 2,7- + 3,5-DMP
1,3- + 2,10- + 3,9- + 3,10-DMP
1,6- + 2,5- + 2,9-DMP
1,7-DMP
2,3-DMP
1,9- + 4,9- + 4,10-DMP
1,8-DMP
1,2-DMP
Retene
Well: 2018041-007
Depth: 0.38-0.43m
Sample type: Mud
Fraction: MARO
APT-ID: 200067
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
178.08±0.0509: 5.422e+4
192.09±0.0549: 5.422e+4
206.11±0.0589: 5.422e+4
219.12±0.0626: 5.422e+4

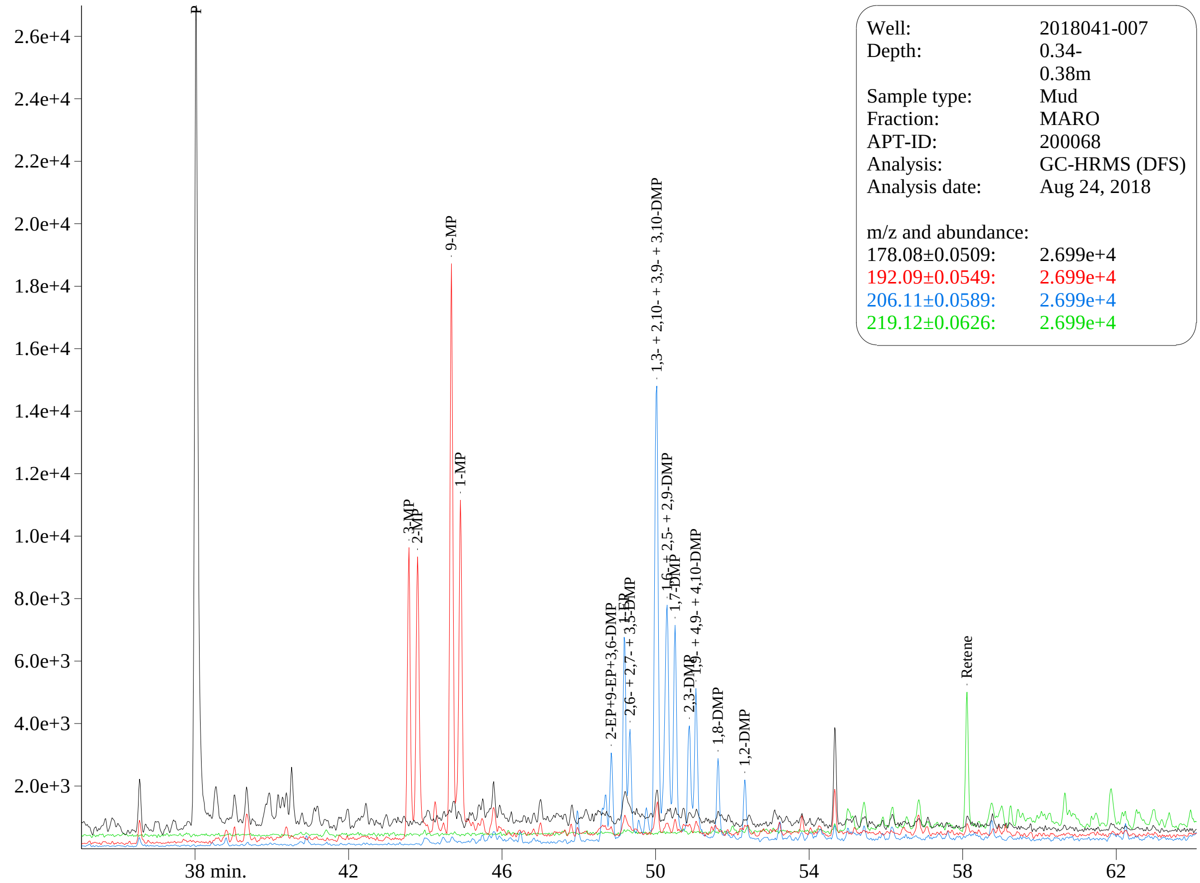

Well: 2018041-007
Depth: 0.38-0.43m
Sample type: Mud
Fraction: MARO
APT-ID: 200067
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
184.03±0.0526: 4.803e+3
198.05±0.0566: 4.803e+3
212.07±0.0606: 4.803e+3
DBT
4-MDBT
(3+2)-MDBT
1-MDBT
34 min.
36
38
40
42
44
46
48
50
52
5.0e+3
4.5e+3
4.0e+3
3.5e+3
3.0e+3
2.5e+3
2.0e+3
1.5e+3
1.0e+3
5.0e+2

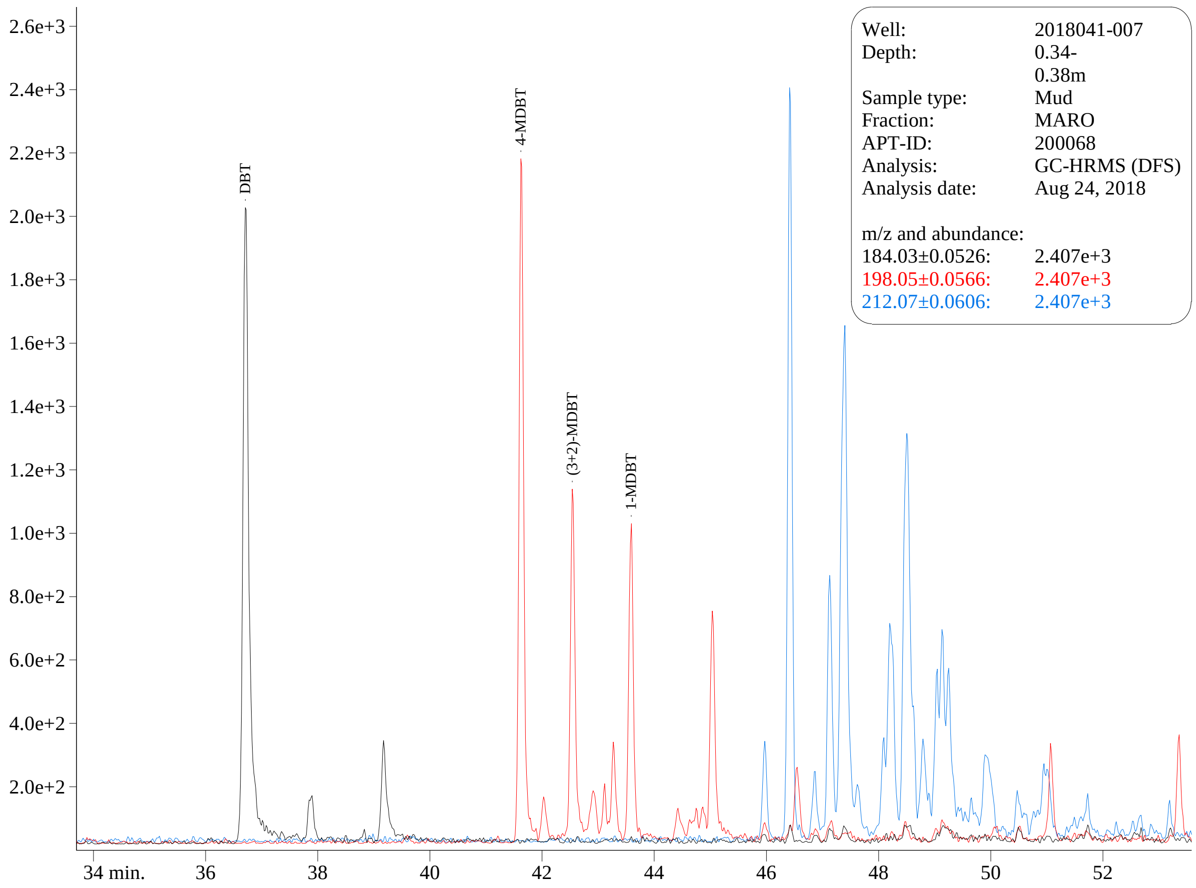

Well: 2018041-007
Depth: 0.38-0.43m
Sample type: Mud
Fraction: MARO
APT-ID: 200067
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
231.12±0.0660: 6.029e+3
C20TA
C21TA
SC26TA
RC26TA+SC27TA
SC28TA
RC27TA
RC28TA
M2
M3
M4
70 min.
80
90
100
9.0e+3
8.0e+3
7.0e+3
6.0e+3
5.0e+3
4.0e+3
3.0e+3
2.0e+3
1.0e+3


Well: 2018041-007
Depth: 0.38-0.43m
Sample type: Mud
Fraction: MARO
APT-ID: 200067
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
245.1330±0.0700: 1.510e+3
3MS-TA
4MS-TA
2,24DMS-TA
3,24DMS+3MR-TA
4,24DMS+4MR-TA
3M24ES-TA
D2-TA
4M24ES-TA
3,24DMR-TA
4,24DMR-TA
D3-TA
D4-TA
2M24ER-TA
3M24ER-TA
4M24ER-TA
D6-TA
1.4e+3
1.2e+3
1.0e+3
8.0e+2
6.0e+2
4.0e+2
2.0e+2
84 min.
86
88
90
92
94
96
98
100
102

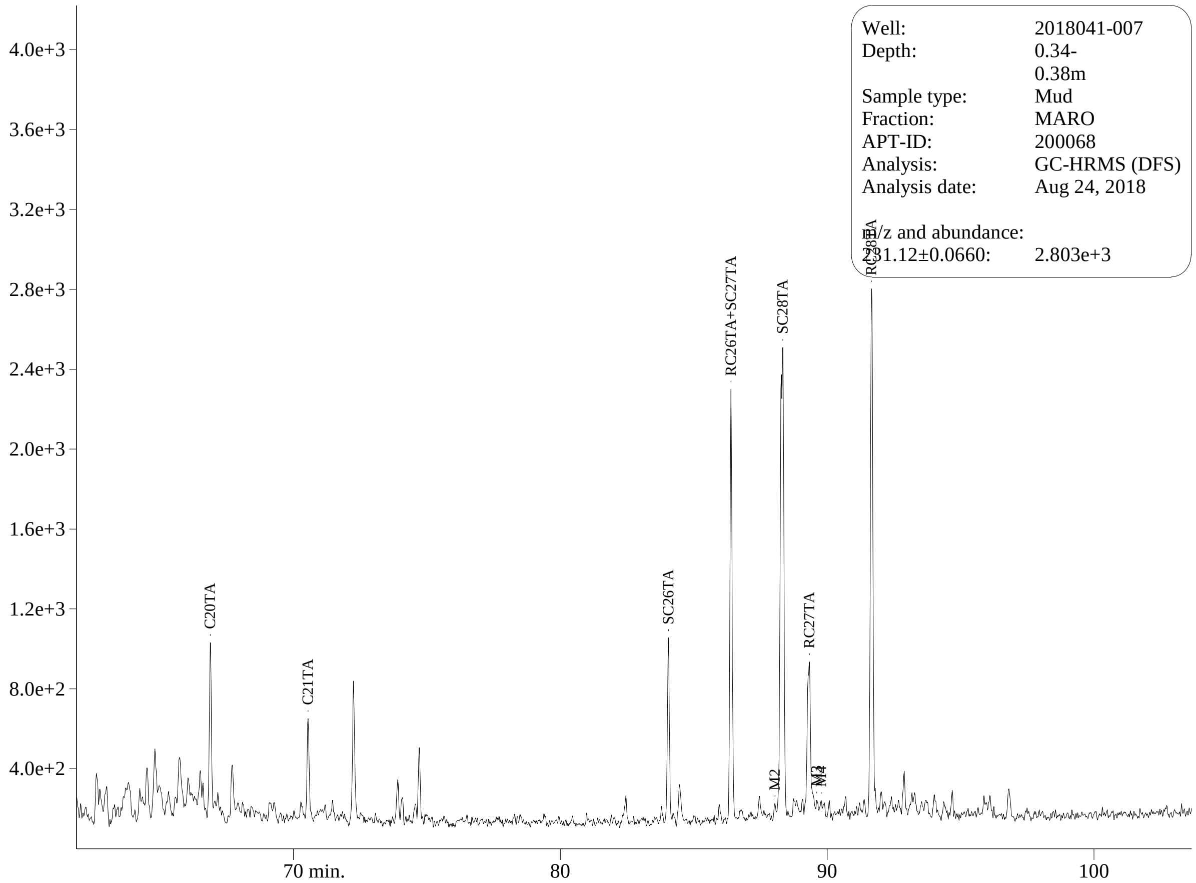

Well: 2018041-007
Depth: 0.38-0.43m
Sample type: Mud
Fraction: MARO
APT-ID: 200067
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
253.20±0.0723: 3.539e+3
C21MA
C22MA
bSC27MA
bSC27DMA
aSC27MA
bRC27MA+bRC27DMA
bSC28MA+bSC28DMA+aRC27DMA
aSC27DMA
aRC27MA
aSC28MA
bRC28MA+bRC28DMA
bSC29MA+bSC29DMA
aSC29MA
aRC28MA+bRC29MA+bRC29DMA
aRC29MA
3.2e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
60 min.
70
80
90


Well: 2018041-007
Depth: 0.34-0.38m
Sample type: Mud
Fraction: MARO
APT-ID: 200068
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
142.08±0.0406: 1.400e+4
156.09±0.0446: 1.400e+4
170.11±0.0486: 1.400e+4
2-MN
1-MN
2-EN
1-EN
2,6-DMN
2,7-DMN
1,3- + 1,7-DMN
1,6-DMN
2,3- + 1,4-DMN
1,5-DMN
1,2-DMN
1,8-DMN
1,3,7-TMN
1,3,6-TMN
1,3,5- + 1,4,6-TMN
2,3,6-TMN
1,2,7-TMN
1,6,7 + 1,2,6-TMN
1,2,4-TMN
1,2,5-TMN
14 min.
18
22
26
30

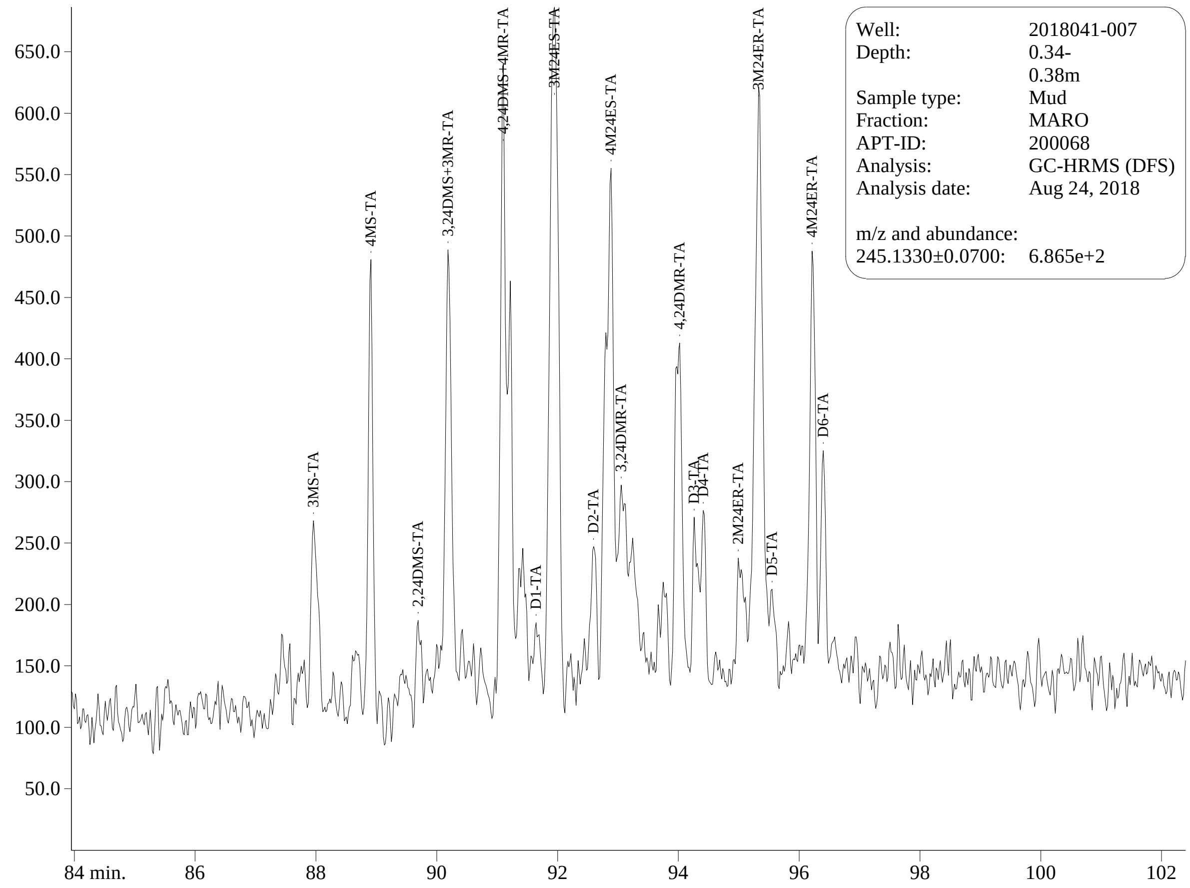

Well: 2018041-007
Depth: 0.34-0.38m
Sample type: Mud
Fraction: MARO
APT-ID: 200068
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
178.08±0.0509: 2.699e+4
192.09±0.0549: 2.699e+4
206.11±0.0589: 2.699e+4
219.12±0.0626: 2.699e+4
P
3-MP
2-MP
9-MP
1-MP
2-EP+9-EP+3,6-DMP
2,6- + 2,7- + 3,5-DMP
1-EP
1,3- + 2,10- + 3,9- + 3,10-DMP
1,6- + 2,5- + 2,9-DMP
1,7-DMP
2,3-DMP
1,9- + 4,9- + 4,10-DMP
1,8-DMP
1,2-DMP
Retene
38 min.
42
46
50
54
58
62



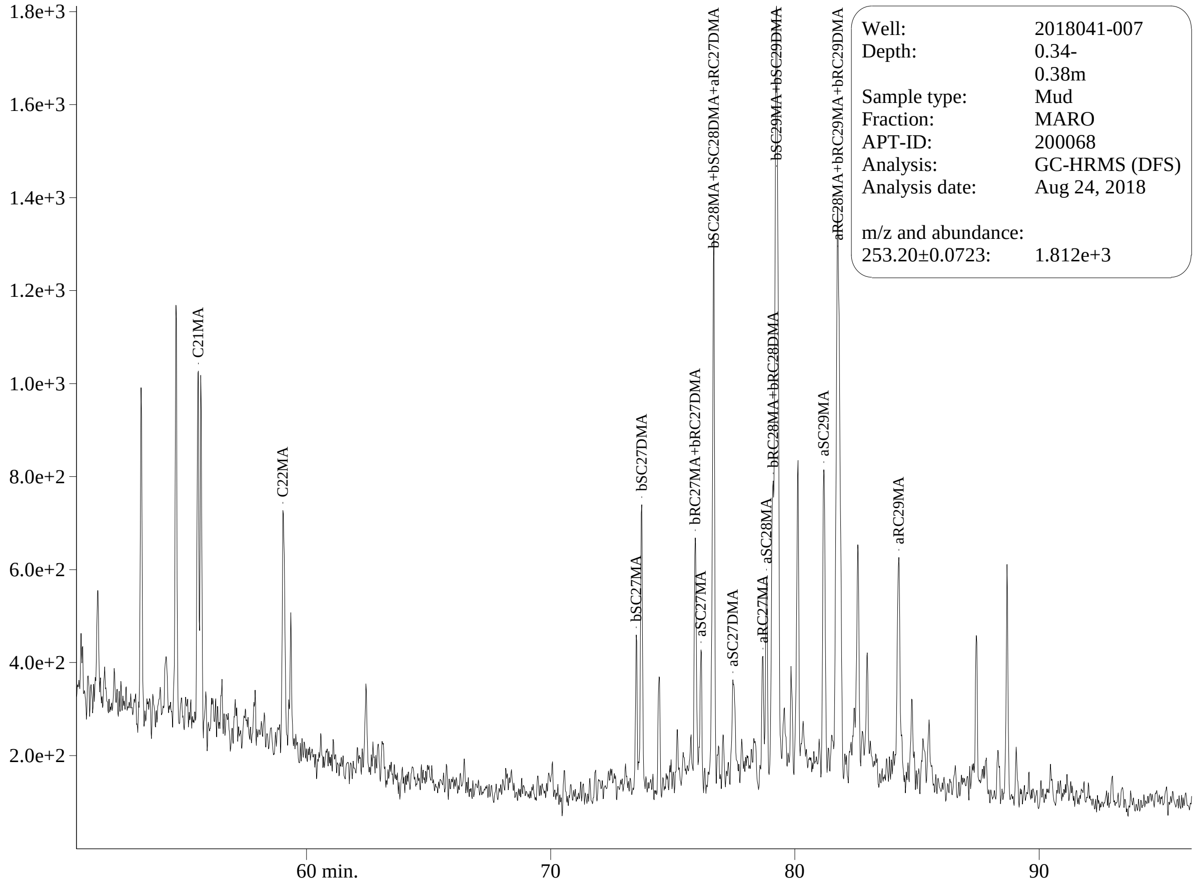
Well: 2018041-007
Depth: 0.34-0.38m
Sample type: Mud
Fraction: MARO
APT-ID: 200068
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
184.03±0.0526: 2.407e+3
198.05±0.0566: 2.407e+3
212.07±0.0606: 2.407e+3
DBT
4-MDBT
(3+2)-MDBT
1-MDBT
2.6e+3
2.4e+3
2.2e+3
2.0e+3
1.8e+3
1.6e+3
1.4e+3
1.2e+3
1.0e+3
8.0e+2
6.0e+2
4.0e+2
2.0e+2
34 min.
36
38
40
42
44
46
48
50
52



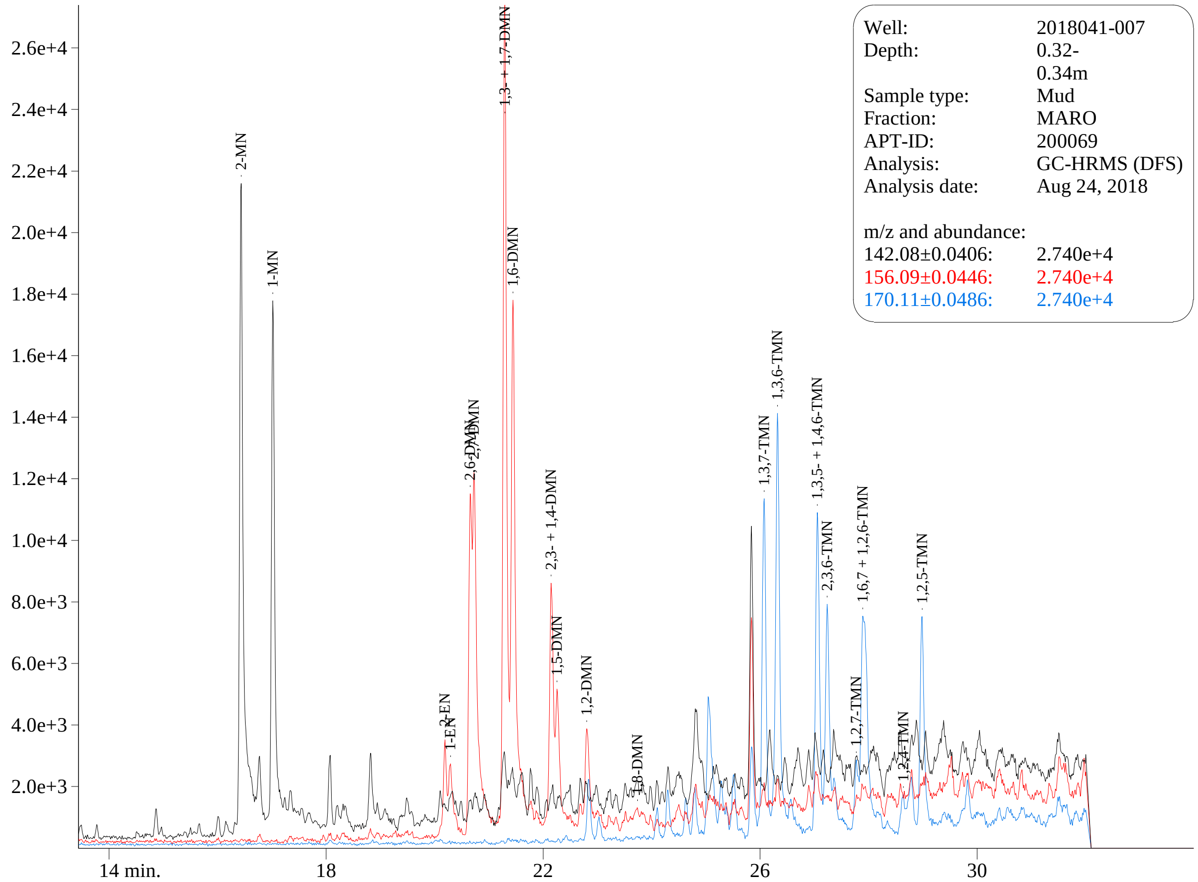
Well: 2018041-007
Depth: 0.34-0.38m
Sample type: Mud
Fraction: MARO
APT-ID: 200068
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
231.12±0.0660: 2.803e+3
C20TA
C21TA
SC26TA
RC26TA+SC27TA
SC28TA
RC27TA
RC28TA
M2
M3
M4
4.0e+3
3.6e+3
3.2e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
70 min.
80
90
100



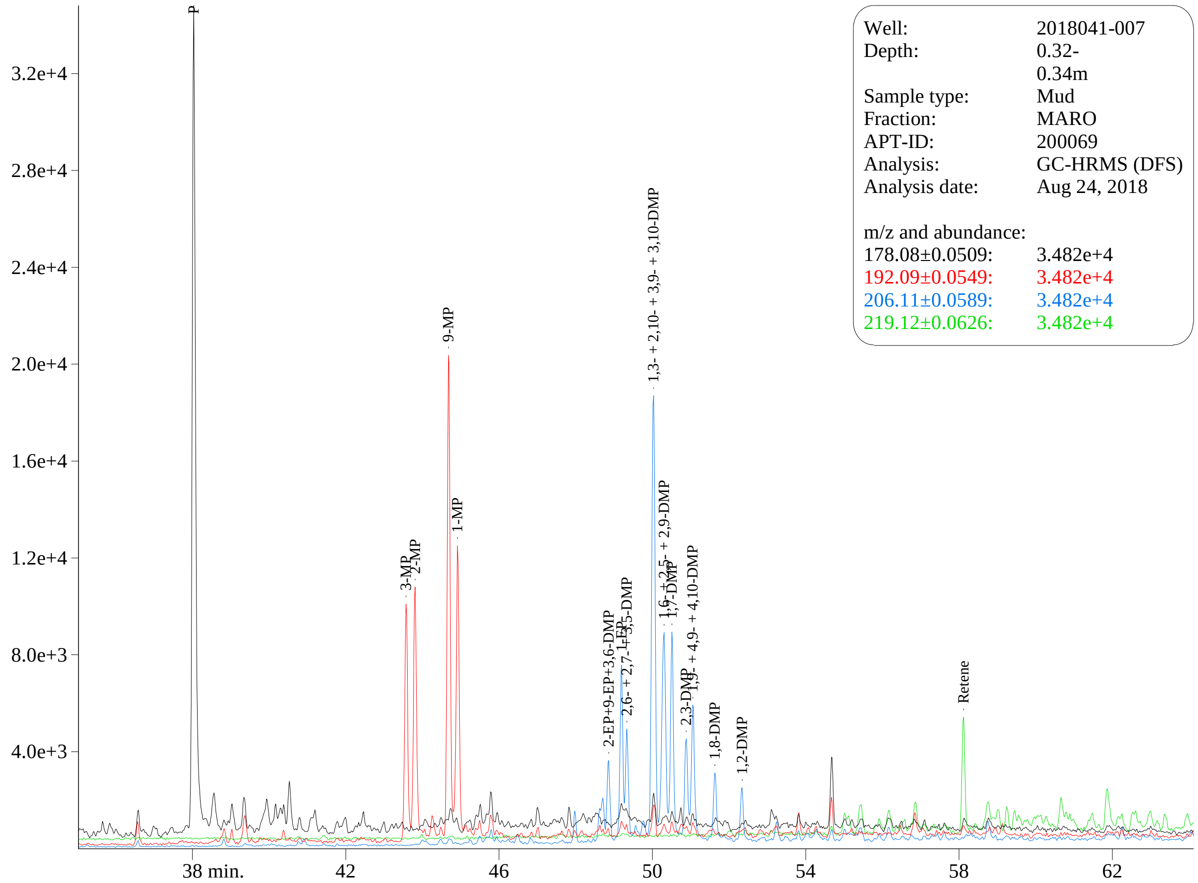
Well: 2018041-007
Depth: 0.34-0.38m
Sample type: Mud
Fraction: MARO
APT-ID: 200068
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
245.1330±0.0700: 6.865e+2
3MS-TA
4MS-TA
2,24DMS-TA
3,24DMS+3MR-TA
4,24DMS+4MR-TA
D1-TA
3M24ES-TA
D2-TA
4M24ES-TA
3,24DMR-TA
4,24DMR-TA
D3-TA
D4-TA
2M24ER-TA
3M24ER-TA
D5-TA
4M24ER-TA
D6-TA
84 min.
86
88
90
92
94
96
98
100
102



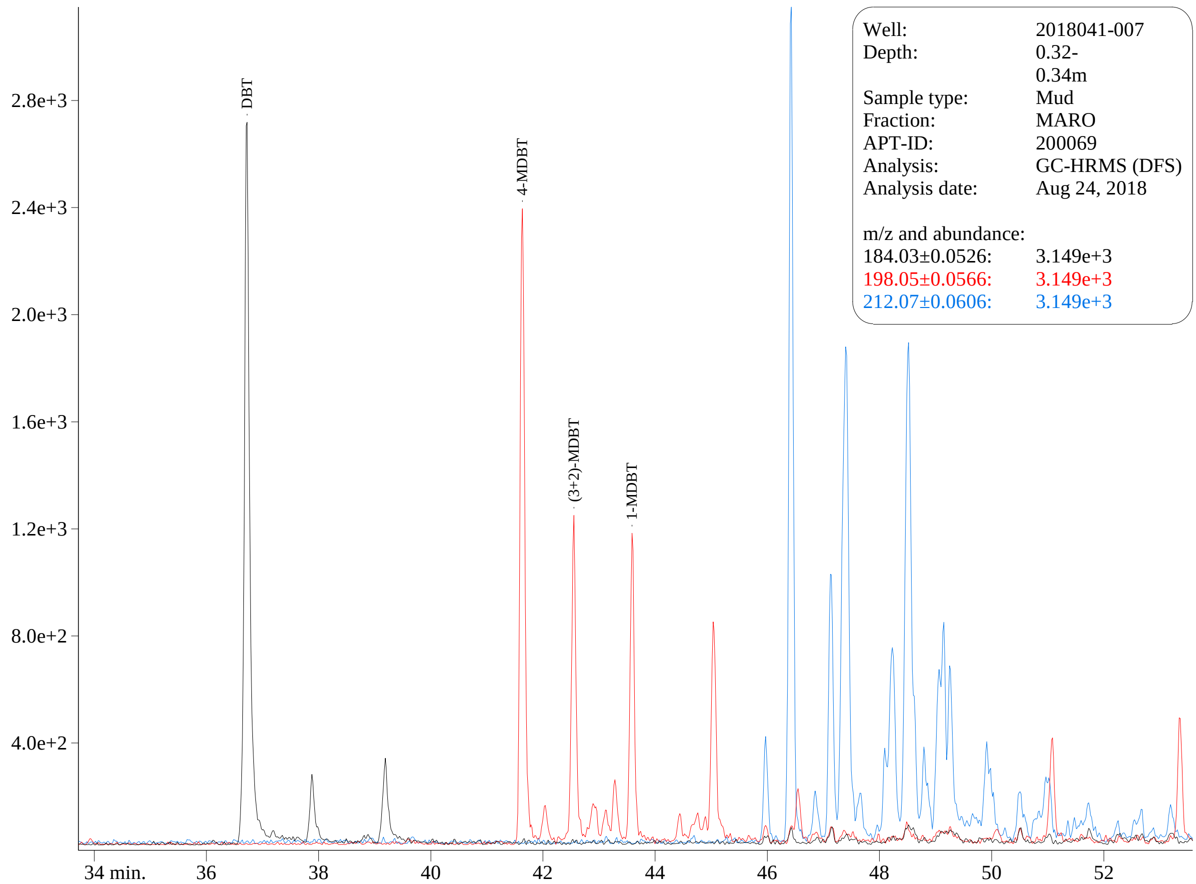
Well: 2018041-007
Depth: 0.34-0.38m
Sample type: Mud
Fraction: MARO
APT-ID: 200068
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
253.20±0.0723: 1.812e+3
C21MA
C22MA
bSC27MA
bSC27DMA
aSC27MA
bRC27MA+bRC27DMA
bSC28MA+bSC28DMA+aRC27DMA
aSC27DMA
aRC27MA
aSC28MA
bRC28MA+bRC28DMA
bSC29MA+bSC29DMA
aSC29MA
aRC28MA+bRC29MA+bRC29DMA
aRC29MA
60 min.
70
80
90

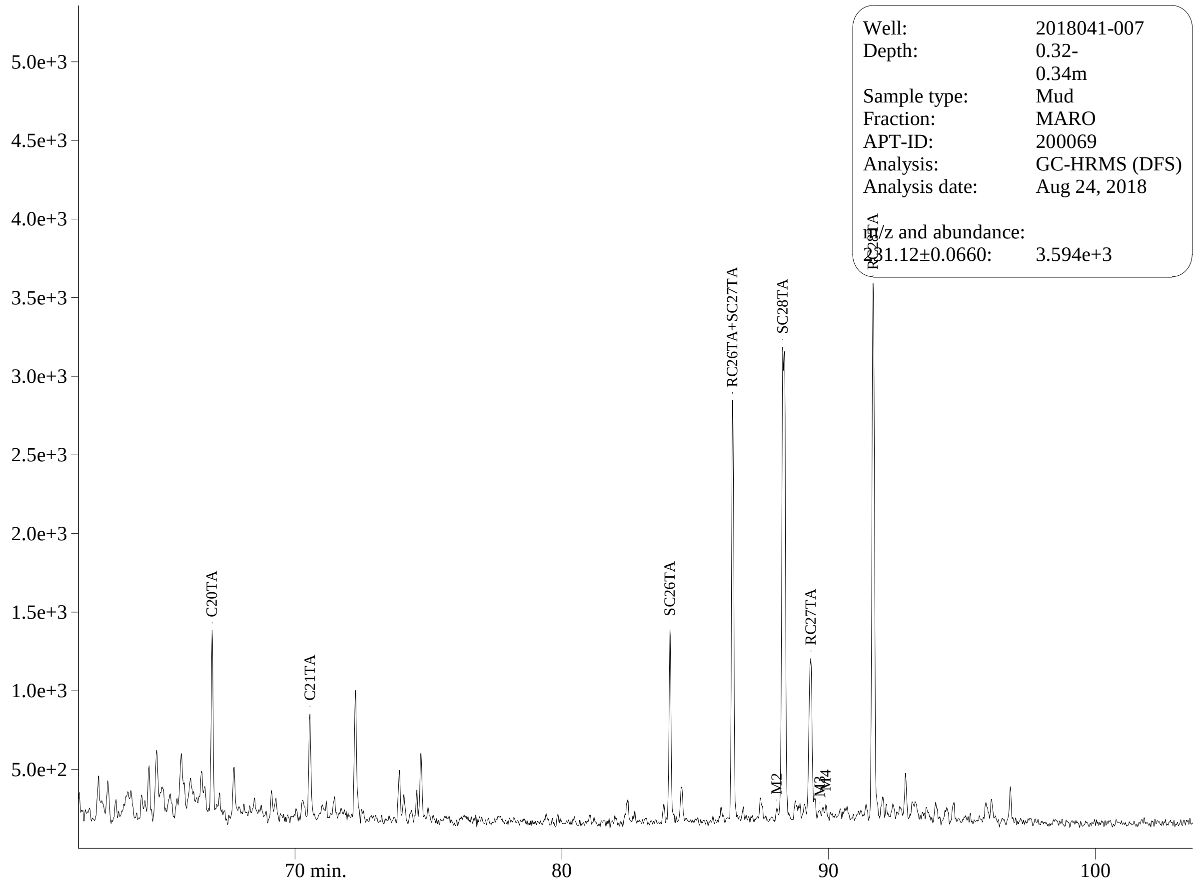


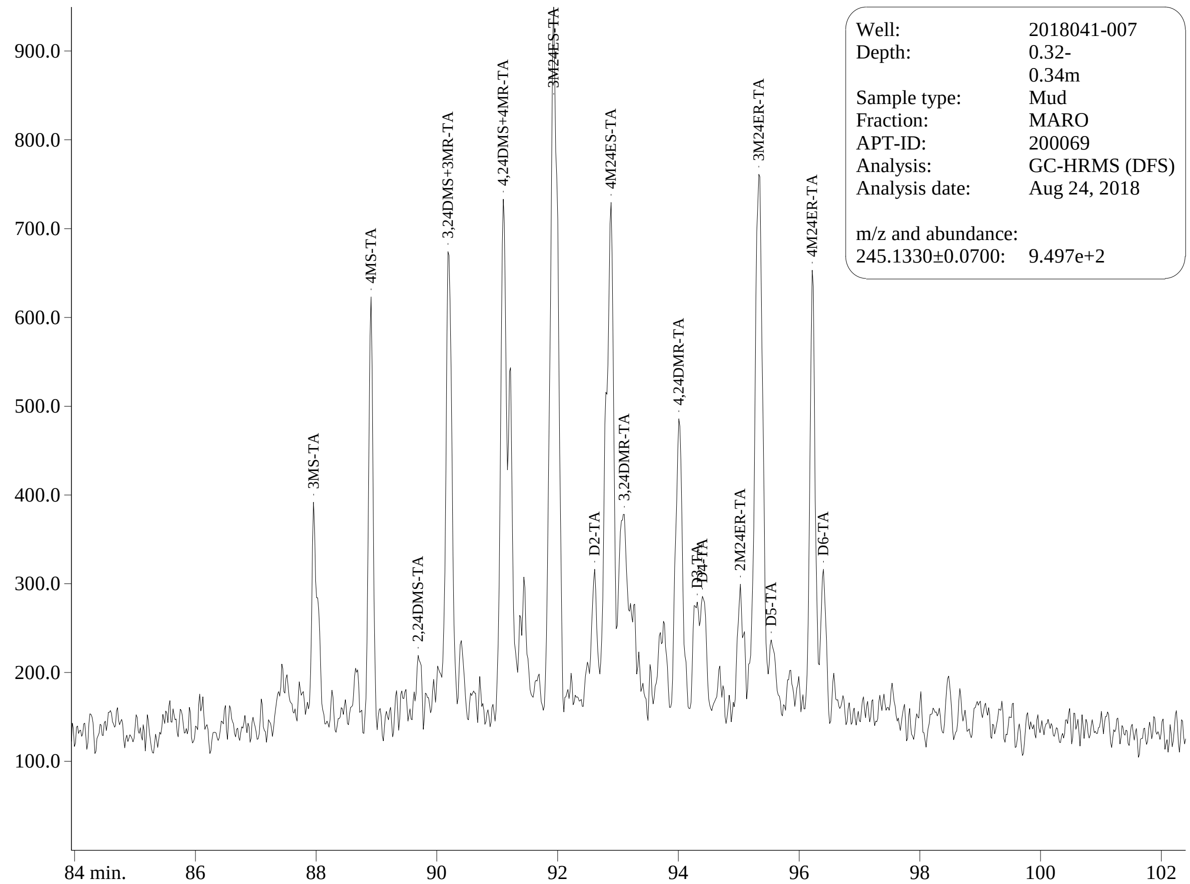
Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MARO
APT-ID: 200069
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
142.08±0.0406: 2.740e+4
156.09±0.0446: 2.740e+4
170.11±0.0486: 2.740e+4
2-MN
1-MN
1,3- + 1,7-DMN
1,6-DMN
2,6-DMN
2,7-DMN
1-EN
2-EN
2,3- + 1,4-DMN
1,5-DMN
1,2-DMN
1,8-DMN
1,3,7-TMN
1,3,6-TMN
1,3,5- + 1,4,6-TMN
2,3,6-TMN
1,6,7 + 1,2,6-TMN
1,2,7-TMN
1,2,4-TMN
1,2,5-TMN
14 min.
18
22
26
30



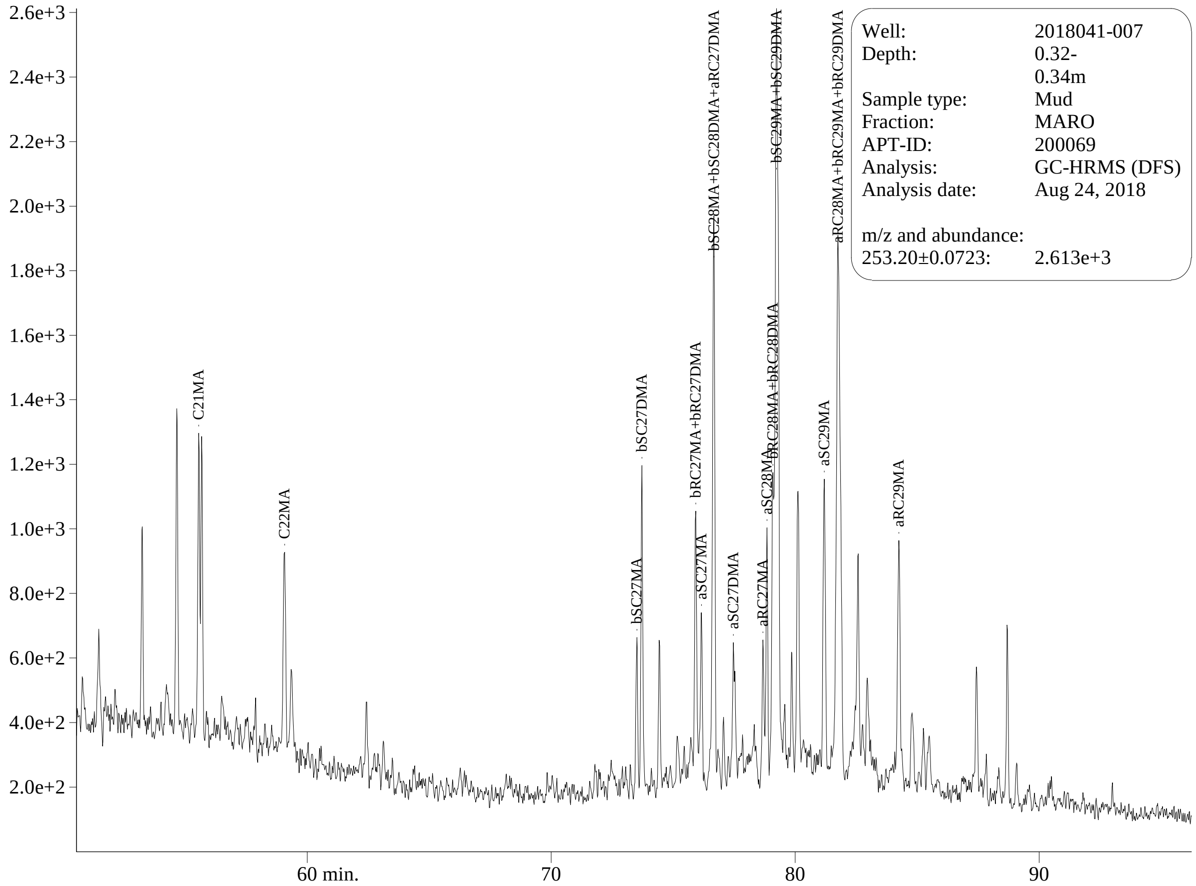
Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MARO
APT-ID: 200069
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
178.08±0.0509: 3.482e+4
192.09±0.0549: 3.482e+4
206.11±0.0589: 3.482e+4
219.12±0.0626: 3.482e+4
P
9-MP
1-MP
3-MP
2-MP
1,3- + 2,10- + 3,9- + 3,10-DMP
1,6- + 2,5- + 2,9-DMP
1,7-DMP
1,9- + 4,9- + 4,10-DMP
2-EP+9-EP+3,6-DMP
2,6- + 2,7- + 3,5-DMP
1-EP
2,3-DMP
1,8-DMP
1,2-DMP
Retene
38 min.
42
46
50
54
58
62


Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MARO
APT-ID: 200069
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
184.03±0.0526: 3.149e+3
198.05±0.0566: 3.149e+3
212.07±0.0606: 3.149e+3
DBT
4-MDBT
(3+2)-MDBT
1-MDBT
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
34 min.
36
38
40
42
44
46
48
50
52

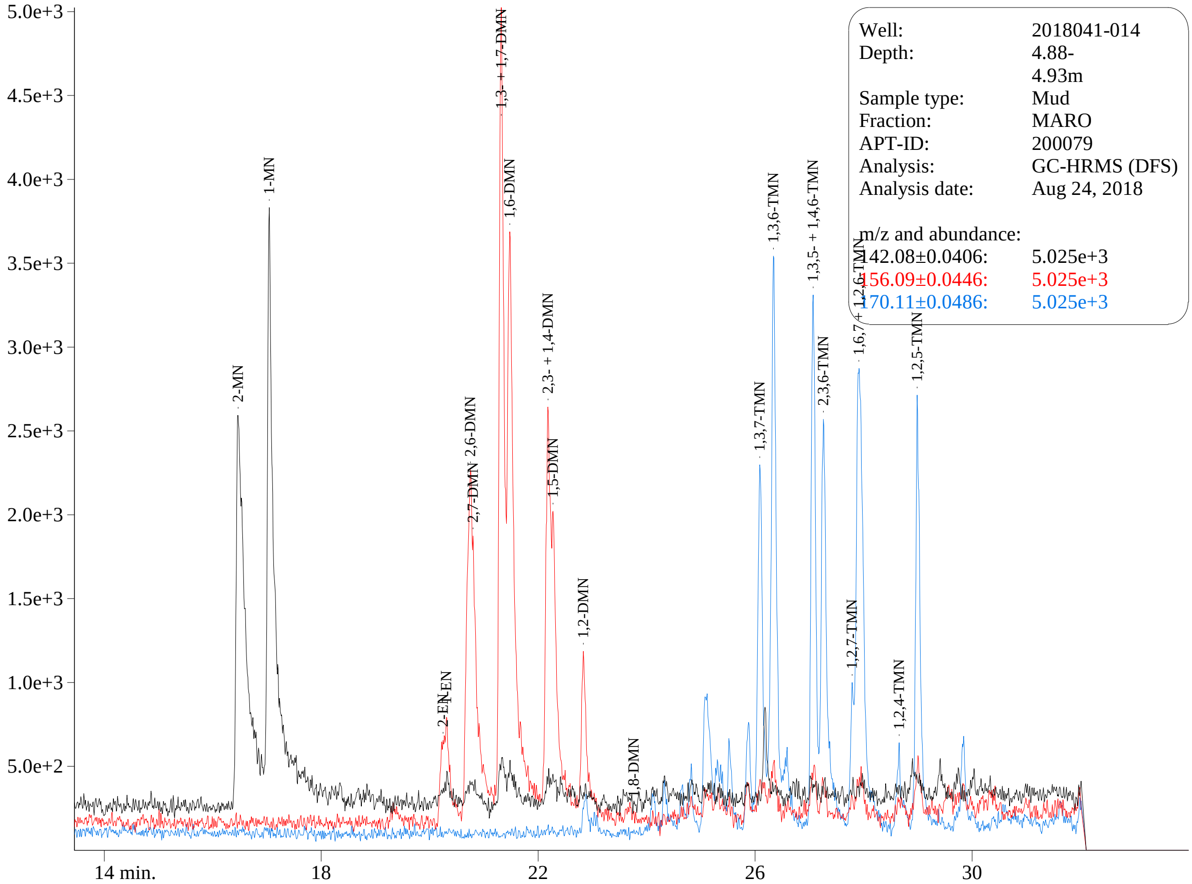

Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MARO
APT-ID: 200069
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
231.12±0.0660: 3.594e+3
C20TA
C21TA
SC26TA
RC26TA+SC27TA
SC28TA
RC27TA
M2
M4
5.0e+3
4.5e+3
4.0e+3
3.5e+3
3.0e+3
2.5e+3
2.0e+3
1.5e+3
1.0e+3
5.0e+2
70 min.
80
90
100



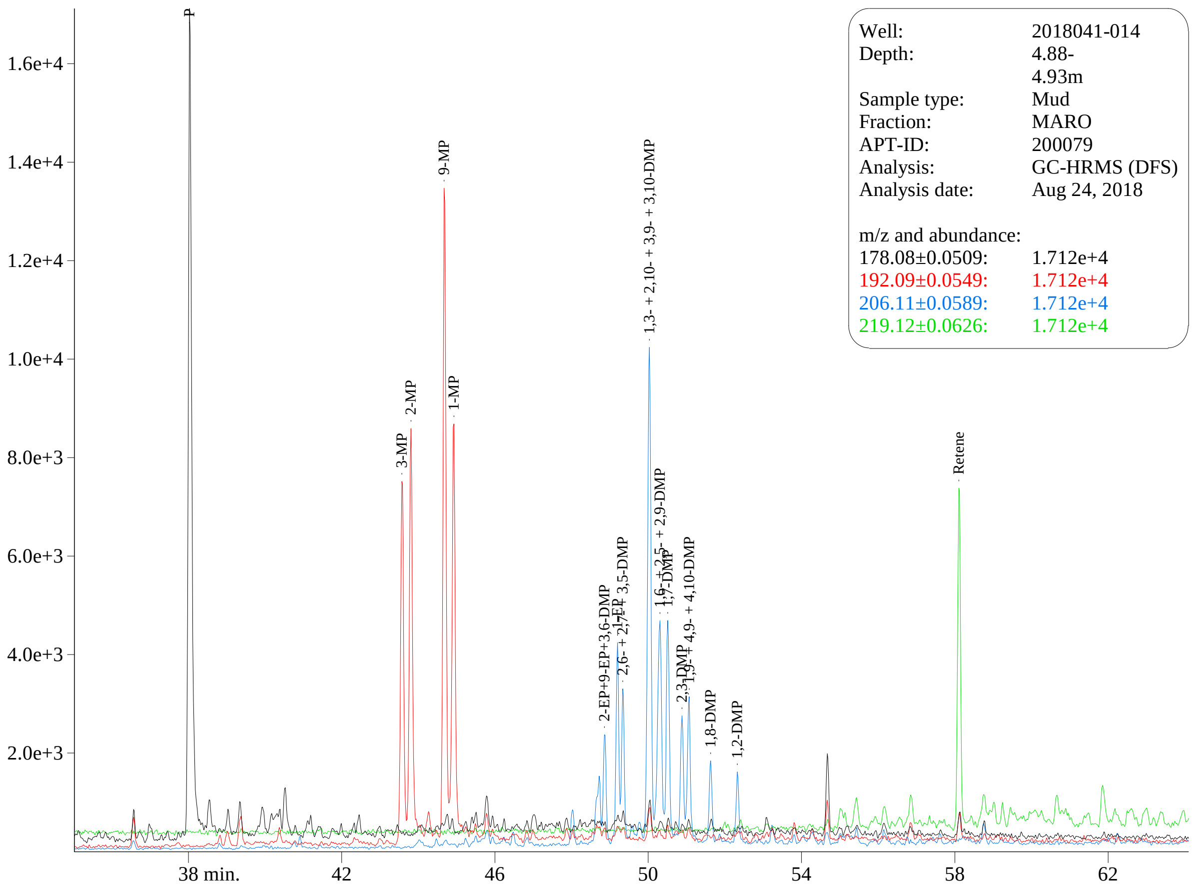
Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MARO
APT-ID: 200069
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
245.1330±0.0700: 9.497e+2
3MS-TA
4MS-TA
2,24DMS-TA
3,24DMS+3MR-TA
4,24DMS+4MR-TA
3M24ES-TA
D2-TA
4M24ES-TA
3,24DMR-TA
4,24DMR-TA
D3-TA
D4-TA
2M24ER-TA
3M24ER-TA
D5-TA
4M24ER-TA
D6-TA
84 min.
86
88
90
92
94
96
98
100
102



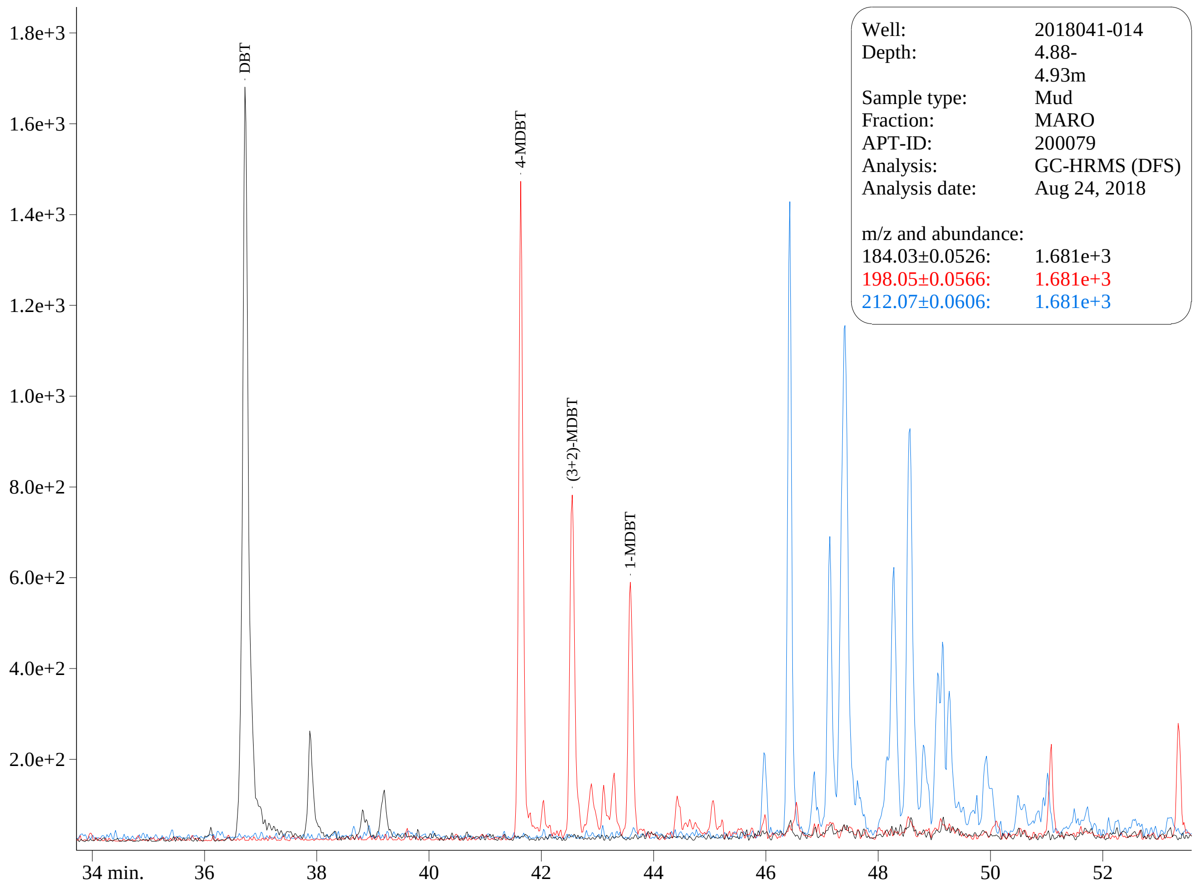
Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MARO
APT-ID: 200069
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
253.20±0.0723: 2.613e+3
C21MA
C22MA
bSC27MA
bSC27DMA
bRC27MA+bRC27DMA
aSC27MA
bSC28MA+bSC28DMA+aRC27DMA
aSC27DMA
aRC27MA
aSC28MA
bRC28MA+bRC28DMA
bSC29MA+bSC29DMA
aSC29MA
aRC28MA+bRC29MA+bRC29DMA
aRC29MA
60 min.
70
80
90



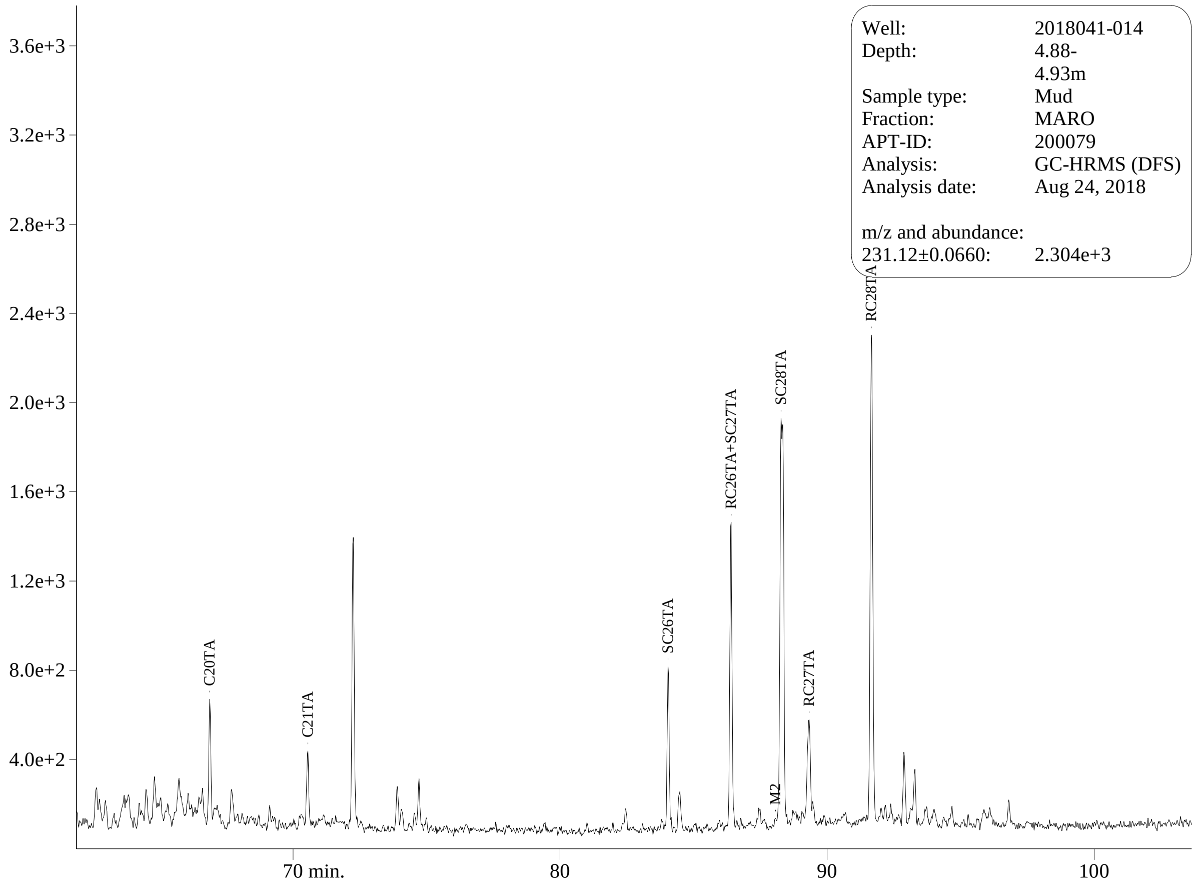
Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MARO
APT-ID: 200079
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
142.08±0.0406: 5.025e+3
156.09±0.0446: 5.025e+3
170.11±0.0486: 5.025e+3
2-MN
1-MN
2-EN
1-EN
2,7-DMN
2,6-DMN
1,3- + 1,7-DMN
1,6-DMN
2,3- + 1,4-DMN
1,5-DMN
1,2-DMN
1,8-DMN
1,3,7-TMN
1,3,6-TMN
1,3,5- + 1,4,6-TMN
2,3,6-TMN
1,2,7-TMN
1,6,7 + 1,2,6-TMN
1,2,4-TMN
1,2,5-TMN
14 min.
18
22
26
30



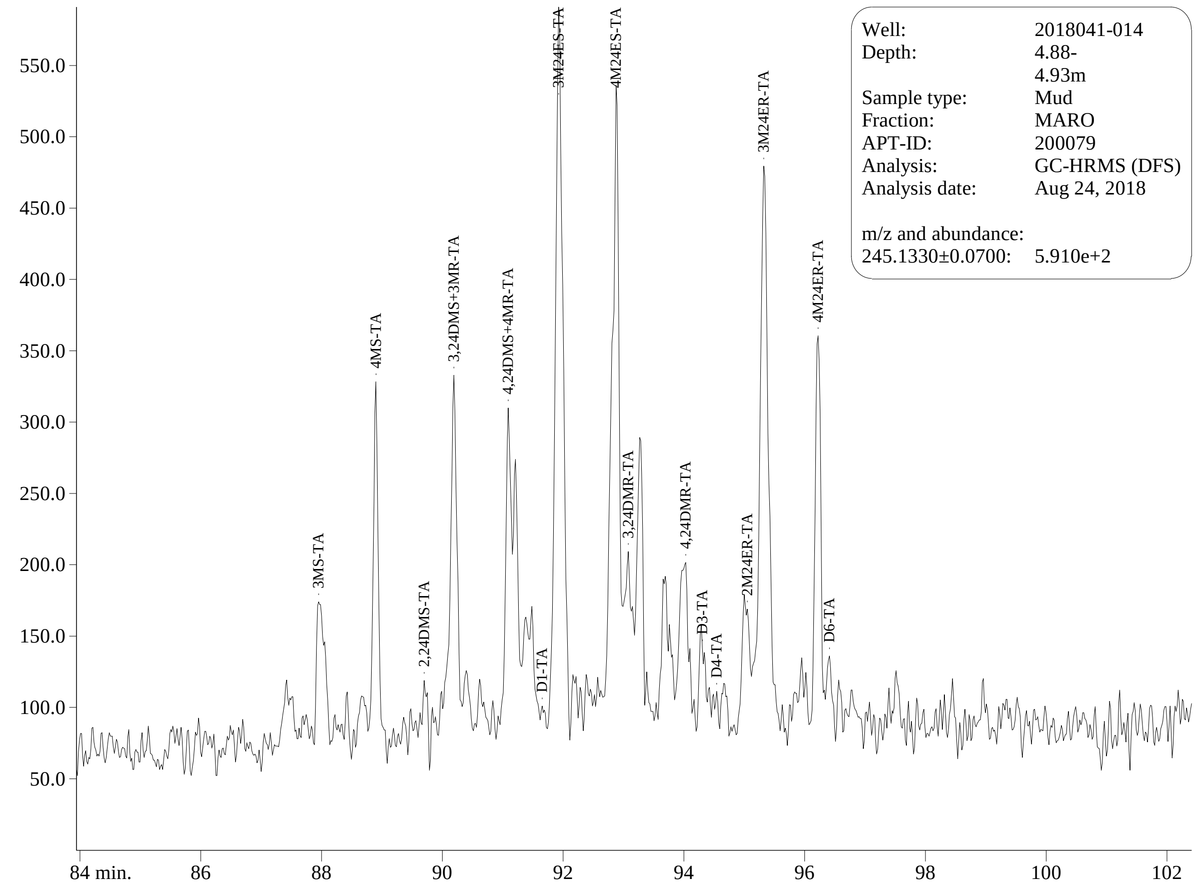
Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MARO
APT-ID: 200079
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
178.08±0.0509: 1.712e+4
192.09±0.0549: 1.712e+4
206.11±0.0589: 1.712e+4
219.12±0.0626: 1.712e+4
3-MP
2-MP
9-MP
1-MP
2-EP+9-EP+3,6-DMP
3,5-DMP
1,3- + 2,10- + 3,9- + 3,10-DMP
1,6- + 2,5- + 2,9-DMP
1,7-DMP
1,9- + 4,9- + 4,10-DMP
2,3-DMP
1,8-DMP
1,2-DMP
Retene
38 min.
42
46
50
54
58
62

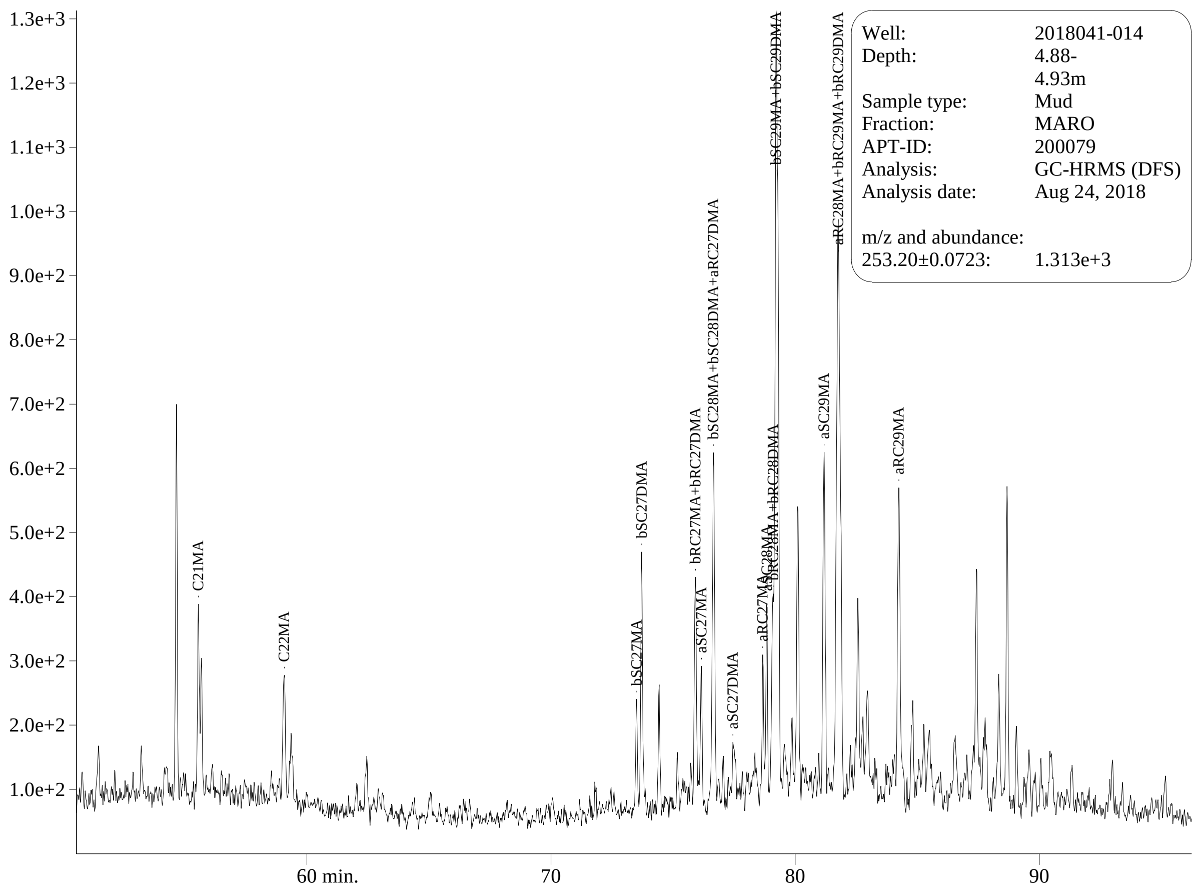


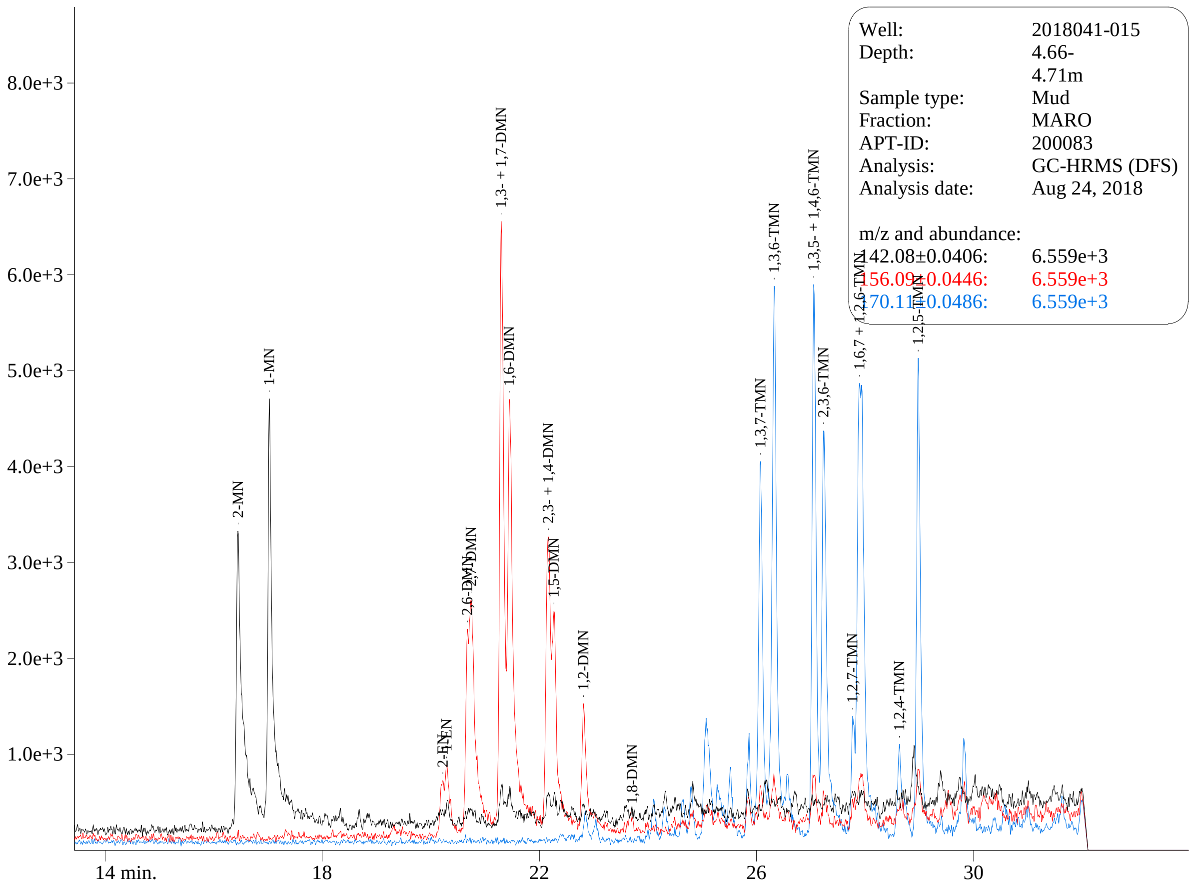
Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MARO
APT-ID: 200079
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
184.03±0.0526: 1.681e+3
198.05±0.0566: 1.681e+3
212.07±0.0606: 1.681e+3
DBT
4-MDBT
(3+2)-MDBT
1-MDBT
1.8e+3
1.6e+3
1.4e+3
1.2e+3
1.0e+3
8.0e+2
6.0e+2
4.0e+2
2.0e+2
34 min.
36
38
40
42
44
46
48
50
52

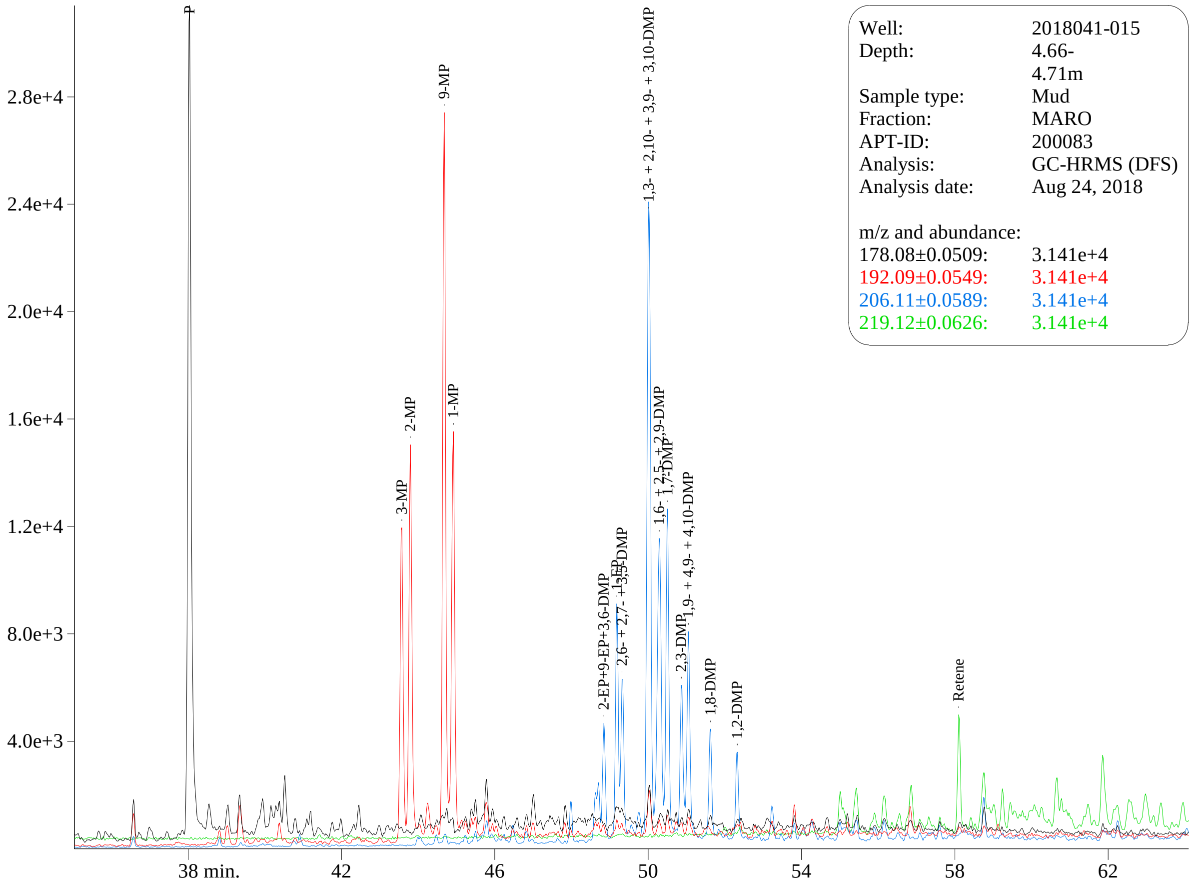


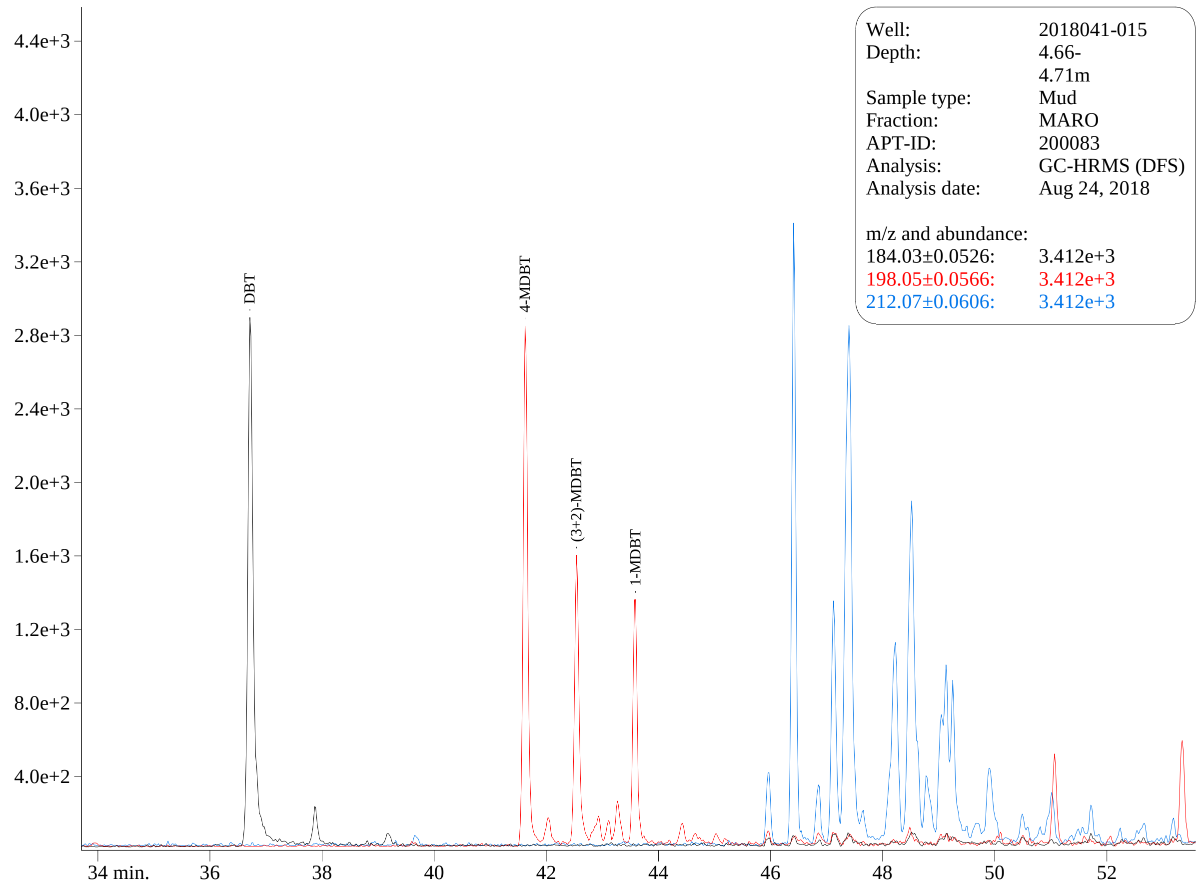
Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MARO
APT-ID: 200079
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
231.12±0.0660: 2.304e+3
C20TA
C21TA
SC26TA
RC26TA+SC27TA
SC28TA
M2
RC27TA
RC28TA
3.6e+3
3.2e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
70 min.
80
90
100


Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MARO
APT-ID: 200079
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
245.1330±0.0700: 5.910e+2
3MS-TA
4MS-TA
2,24DMS-TA
3,24DMS+3MR-TA
4,24DMS+4MR-TA
D1-TA
3M24ES-TA
4M24ES-TA
3,24DMR-TA
4,24DMR-TA
D3-TA
D4-TA
2M24ER-TA
3M24ER-TA
4M24ER-TA
D6-TA
84 min.
86
88
90
92
94
96
98
100
102

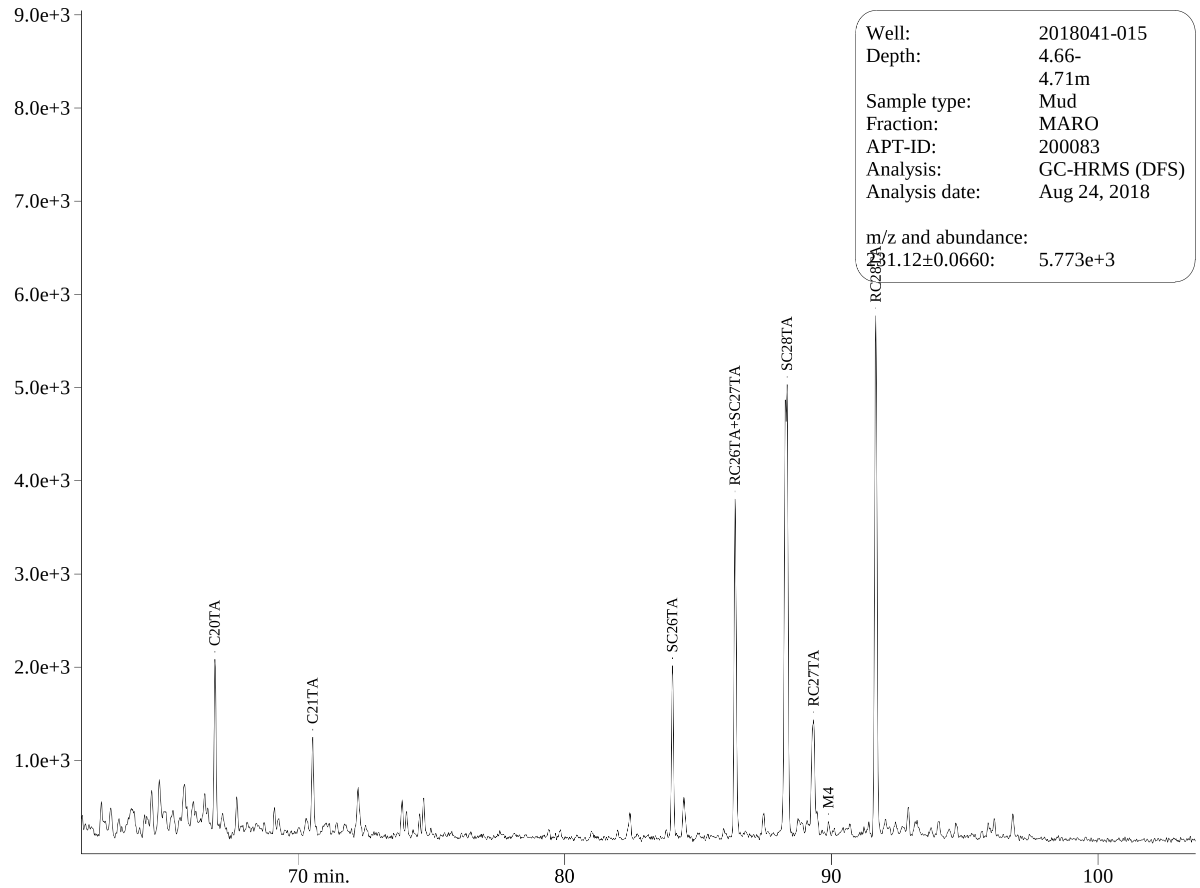

Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MARO
APT-ID: 200079
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
253.20±0.0723: 1.313e+3
C21MA
C22MA
bSC27MA
bSC27DMA
bRC27MA+bRC27DMA
aSC27MA
bSC28MA+bSC28DMA+aRC27DMA
aSC27DMA
bSC29MA+bSC29DMA
aSC29MA
aRC28MA+bRC29MA+bRC29DMA
aRC29MA
60 min.
70
80
90


Well: 2018041-015
Depth: 4.66-4.71m
Sample type: Mud
Fraction: MARO
APT-ID: 200083
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
142.08±0.0406: 6.559e+3
156.09±0.0446: 6.559e+3
170.11±0.0486: 6.559e+3
2-MN
1-MN
2-EN
1-EN
2,6-DMN
2,7-DMN
1,3- + 1,7-DMN
1,6-DMN
2,3- + 1,4-DMN
1,5-DMN
1,2-DMN
1,8-DMN
1,3,7-TMN
1,3,6-TMN
1,3,5- + 1,4,6-TMN
2,3,6-TMN
1,2,7-TMN
1,6,7 + 1,2,6-TMN
1,2,4-TMN
1,2,5-TMN
14 min.
18
22
26
30

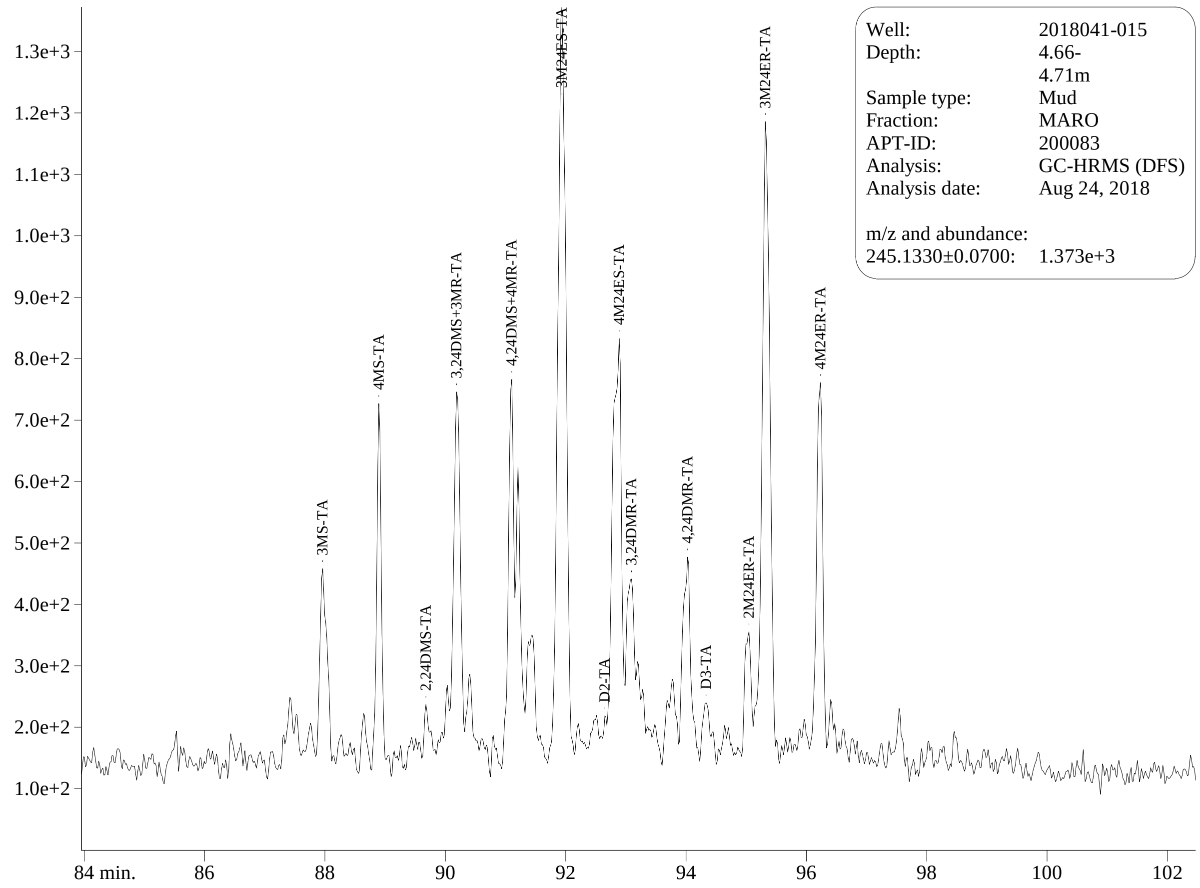

Well: 2018041-015
Depth: 4.66-4.71m
Sample type: Mud
Fraction: MARO
APT-ID: 200083
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
178.08±0.0509: 3.141e+4
192.09±0.0549: 3.141e+4
206.11±0.0589: 3.141e+4
219.12±0.0626: 3.141e+4
P
3-MP
2-MP
9-MP
1-MP
2-EP+9-EP+3,6-DMP
2,6- + 2,7- + 3,5-DMP
1-EP
1,3- + 2,10- + 3,9- + 3,10-DMP
1,6- + 2,5- + 2,9-DMP
1,7-DMP
2,3-DMP
1,9- + 4,9- + 4,10-DMP
1,8-DMP
1,2-DMP
Retene
38 min.
42
46
50
54
58
62

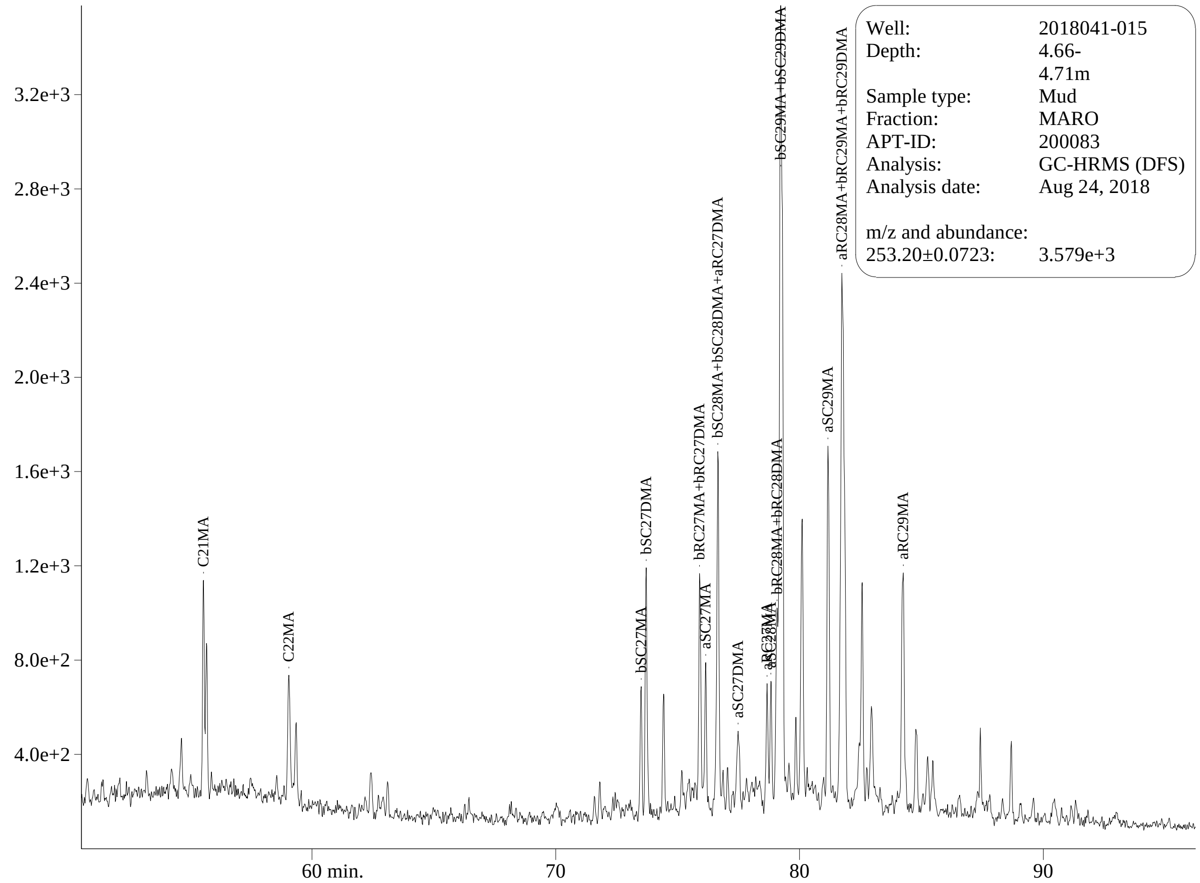


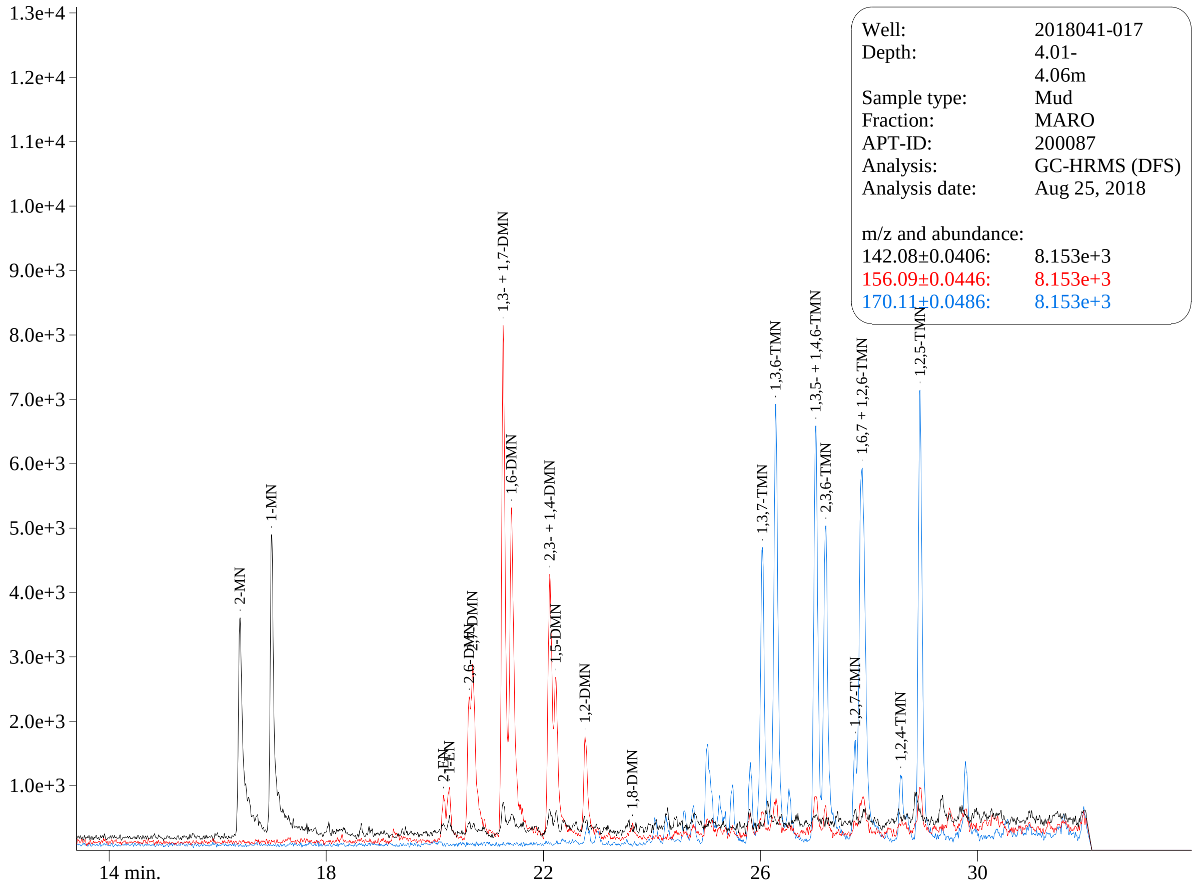
Well: 2018041-015
Depth: 4.66-4.71m
Sample type: Mud
Fraction: MARO
APT-ID: 200083
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
184.03±0.0526: 3.412e+3
198.05±0.0566: 3.412e+3
212.07±0.0606: 3.412e+3
DBT
4-MDBT
(3+2)-MDBT
1-MDBT
4.4e+3
4.0e+3
3.6e+3
3.2e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
34 min.
36
38
40
42
44
46
48
50
52

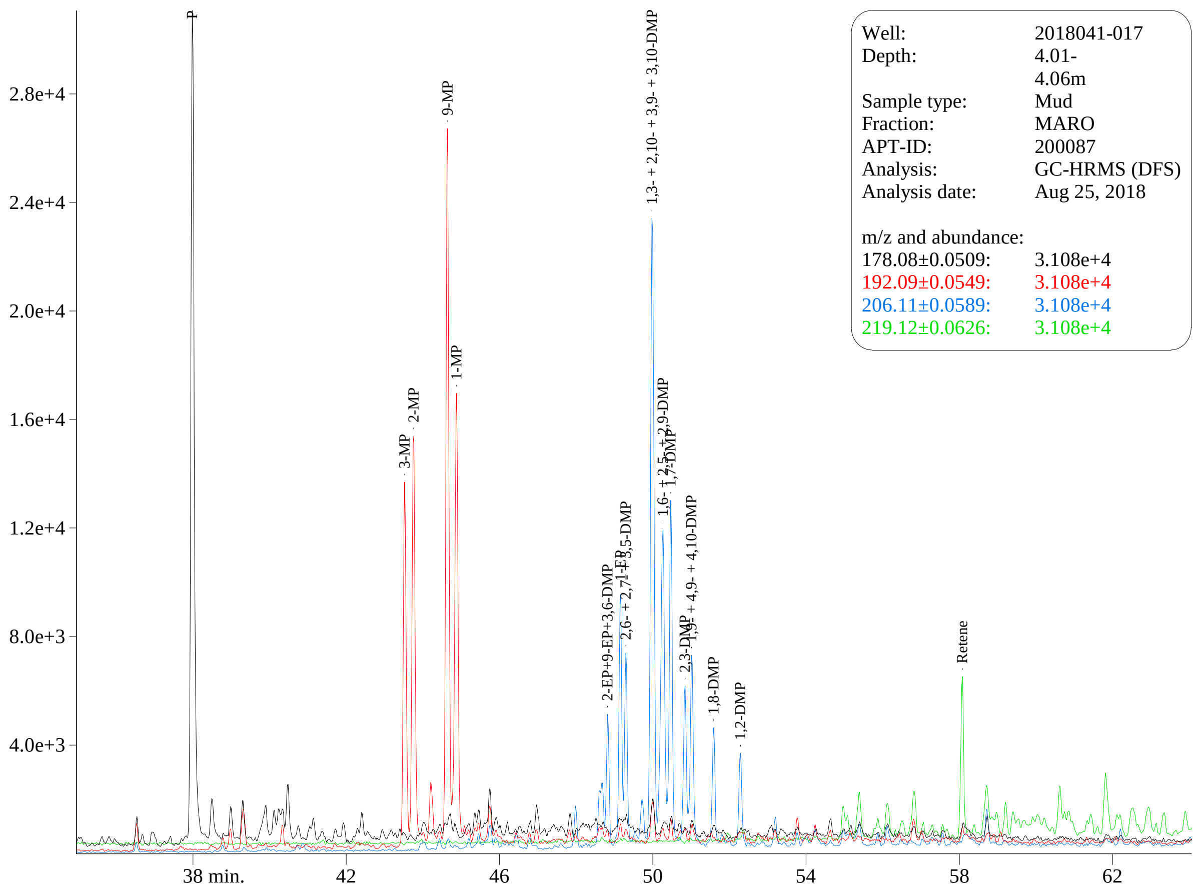


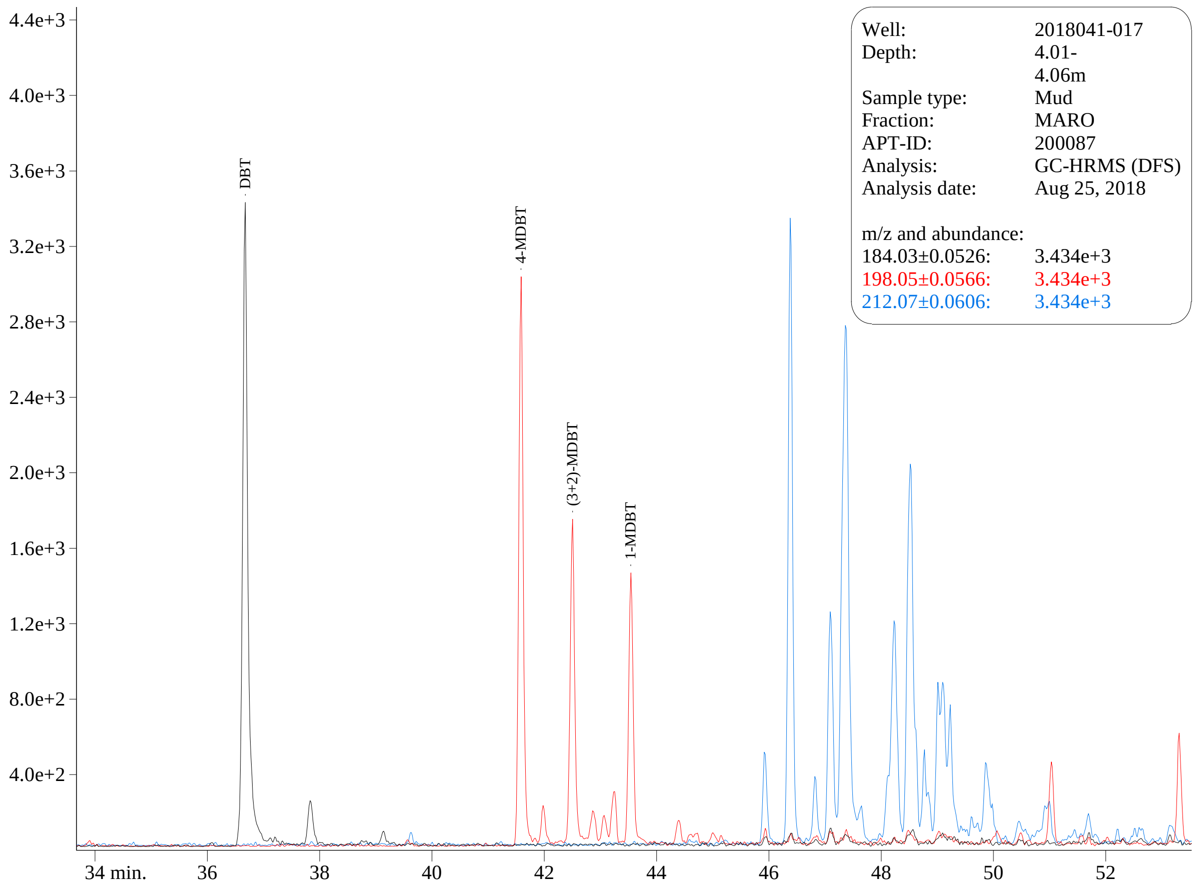
Well: 2018041-015
Depth: 4.66-4.71m
Sample type: Mud
Fraction: MARO
APT-ID: 200083
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
231.12±0.0660: 5.773e+3
C20TA
C21TA
SC26TA
RC26TA+SC27TA
SC28TA
RC27TA
M4
RC28TA
9.0e+3
8.0e+3
7.0e+3
6.0e+3
5.0e+3
4.0e+3
3.0e+3
2.0e+3
1.0e+3
70 min.
80
90
100

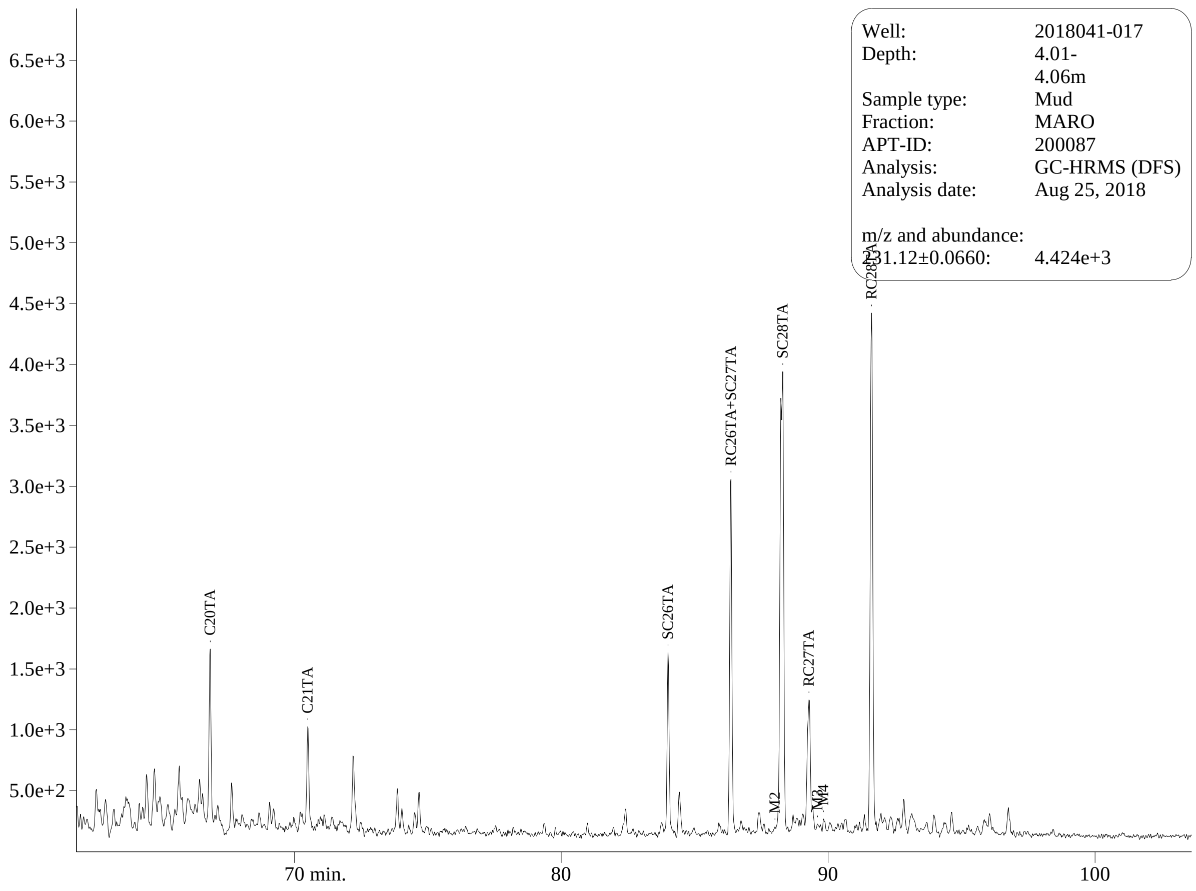

Well: 2018041-015
Depth: 4.66-4.71m
Sample type: Mud
Fraction: MARO
APT-ID: 200083
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
245.1330±0.0700: 1.373e+3
3MS-TA
4MS-TA
2,24DMS-TA
3,24DMS+3MR-TA
4,24DMS+4MR-TA
3M24ES-TA
D2-TA
4M24ES-TA
3,24DMR-TA
4,24DMR-TA
D3-TA
2M24ER-TA
3M24ER-TA
4M24ER-TA
84 min.
86
88
90
92
94
96
98
100
102
1.0e+2
2.0e+2
3.0e+2
4.0e+2
5.0e+2
6.0e+2
7.0e+2
8.0e+2
9.0e+2
1.0e+3
1.1e+3
1.2e+3
1.3e+3

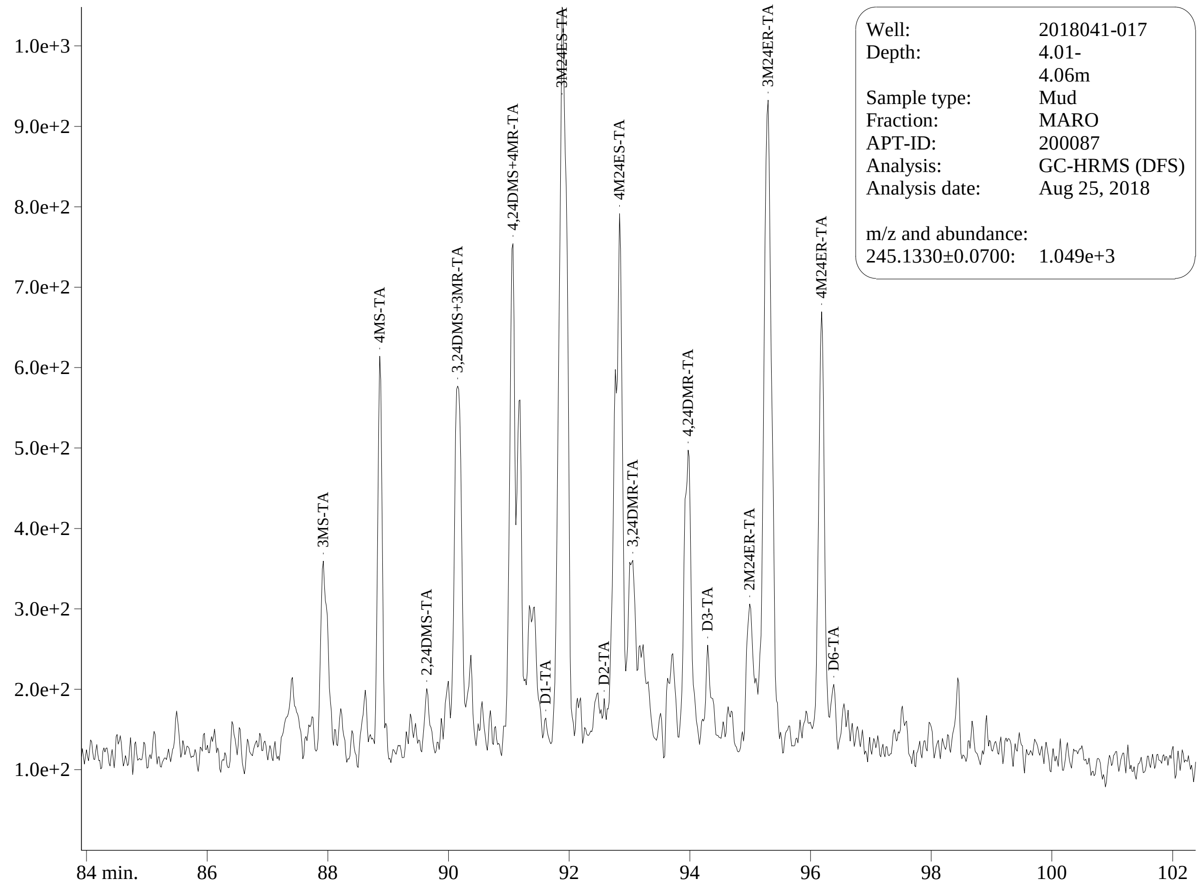

Well: 2018041-015
Depth: 4.66-4.71m
Sample type: Mud
Fraction: MARO
APT-ID: 200083
Analysis: GC-HRMS (DFS)
Analysis date: Aug 24, 2018
m/z and abundance:
253.20±0.0723: 3.579e+3
C21MA
C22MA
bSC27MA
bSC27DMA
bRC27MA+bRC27DMA
aSC27MA
bSC28MA+bSC28DMA+aRC27DMA
aSC27DMA
aRC27MA
aSC28MA
bRC28MA+bRC28DMA
bSC29MA+bSC29DMA
aSC29MA
aRC28MA+bRC29MA+bRC29DMA
aRC29MA
60 min.
70
80
90
4.0e+2
8.0e+2
1.2e+3
1.6e+3
2.0e+3
2.4e+3
2.8e+3
3.2e+3

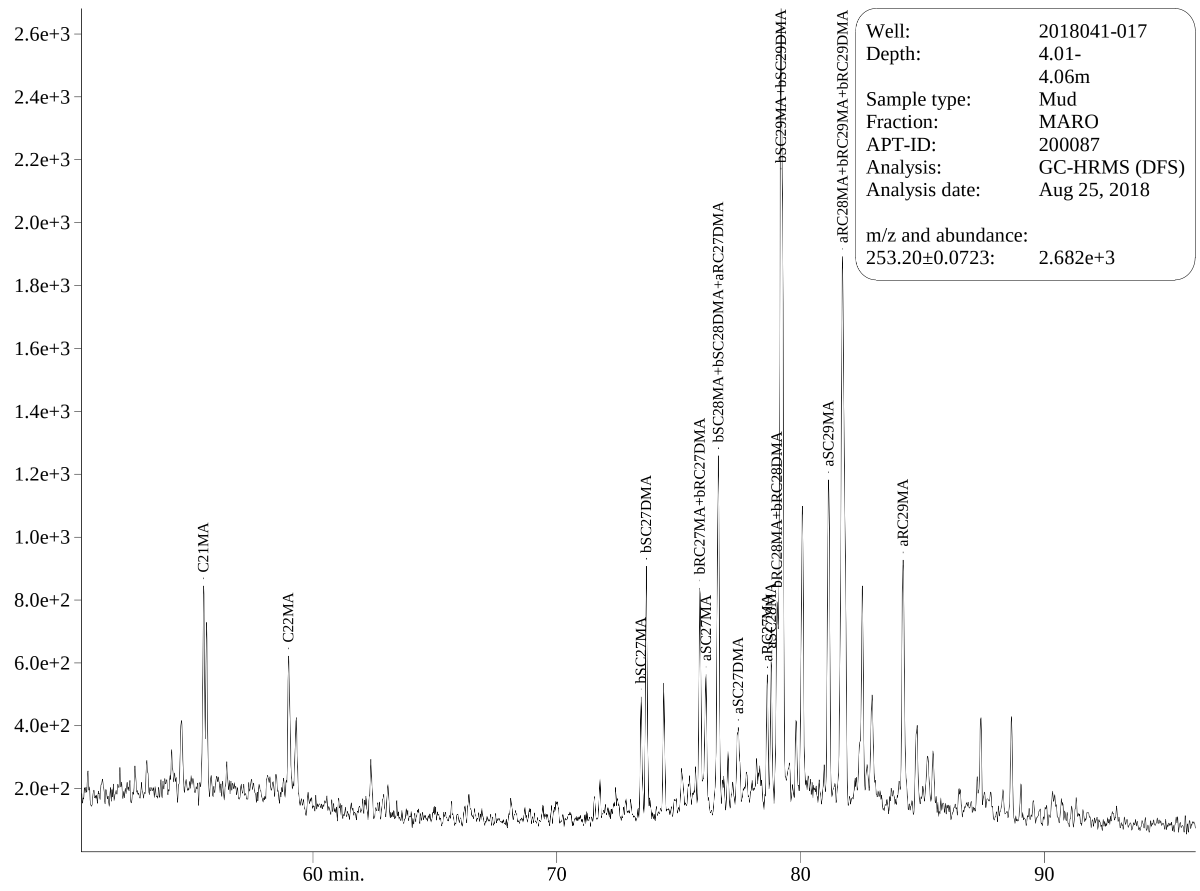

Well: 2018041-017
Depth: 4.01-4.06m
Sample type: Mud
Fraction: MARO
APT-ID: 200087
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
142.08±0.0406: 8.153e+3
156.09±0.0446: 8.153e+3
170.11±0.0486: 8.153e+3
2-MN
1-MN
2-EN
1-EN
2,6-DMN
2,7-DMN
1,3- + 1,7-DMN
1,6-DMN
2,3- + 1,4-DMN
1,5-DMN
1,2-DMN
1,8-DMN
1,3,7-TMN
1,3,6-TMN
1,3,5- + 1,4,6-TMN
2,3,6-TMN
1,2,7-TMN
1,6,7 + 1,2,6-TMN
1,2,4-TMN
1,2,5-TMN
14 min.
18
22
26
30

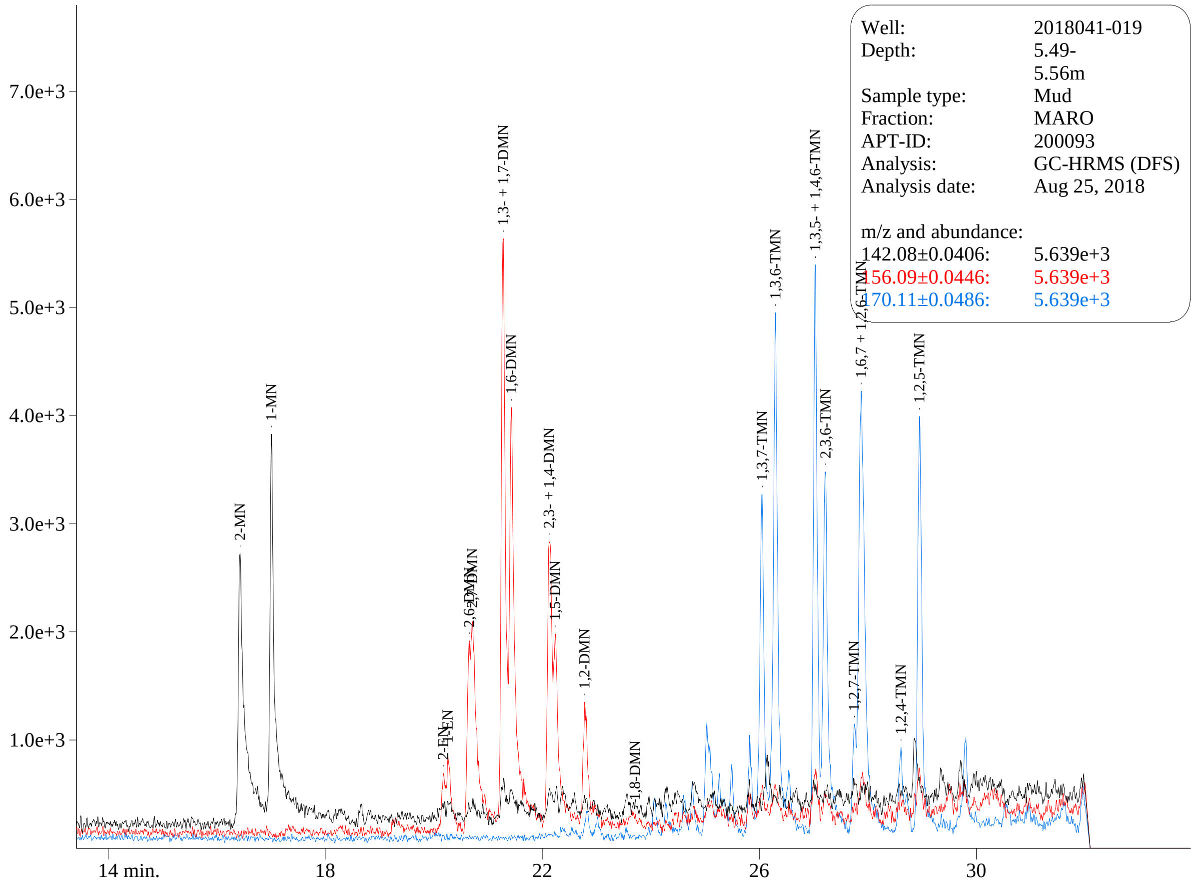

Well: 2018041-017
Depth: 4.01-4.06m
Sample type: Mud
Fraction: MARO
APT-ID: 200087
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
178.08±0.0509: 3.108e+4
192.09±0.0549: 3.108e+4
206.11±0.0589: 3.108e+4
219.12±0.0626: 3.108e+4
P
3-MP
2-MP
9-MP
1-MP
2-EP+9-EP+3,6-DMP
2,6- + 2,7-DMP
3,5-DMP
1-EP
1,3- + 2,10- + 3,9- + 3,10-DMP
1,6- + 2,5- + 2,9-DMP
1,7-DMP
2,3-DMP
1,9- + 4,9- + 4,10-DMP
1,8-DMP
1,2-DMP
Retene
38 min.
42
46
50
54
58
62

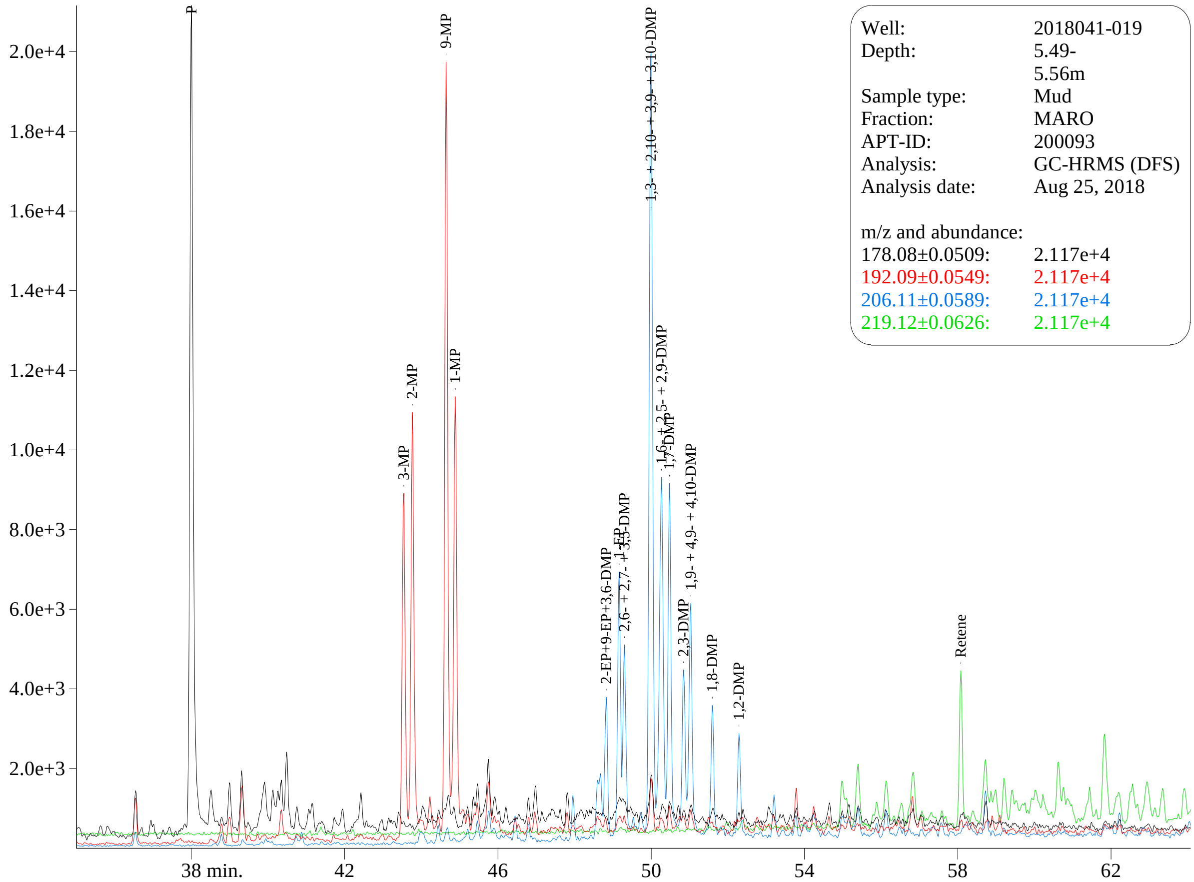

Well: 2018041-017
Depth: 4.01-4.06m
Sample type: Mud
Fraction: MARO
APT-ID: 200087
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
184.03±0.0526: 3.434e+3
198.05±0.0566: 3.434e+3
212.07±0.0606: 3.434e+3
DBT
4-MDBT
(3+2)-MDBT
1-MDBT
4.4e+3
4.0e+3
3.6e+3
3.2e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
34 min.
36
38
40
42
44
46
48
50
52

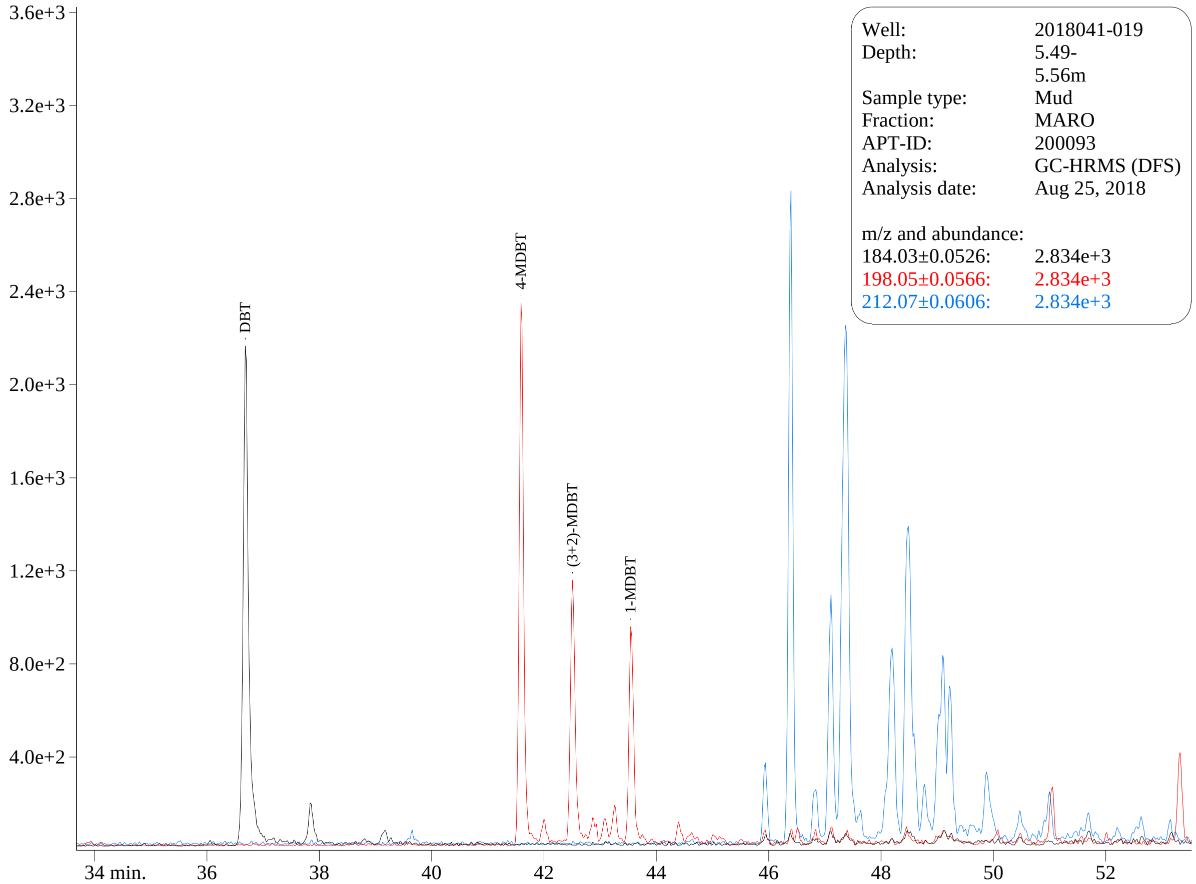

Well: 2018041-017
Depth: 4.01-4.06m
Sample type: Mud
Fraction: MARO
APT-ID: 200087
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
231.12±0.0660: 4.424e+3
C20TA
C21TA
SC26TA
RC26TA+SC27TA
SC28TA
RC27TA
RC28TA
M2
M3
M4
6.5e+3
6.0e+3
5.5e+3
5.0e+3
4.5e+3
4.0e+3
3.5e+3
3.0e+3
2.5e+3
2.0e+3
1.5e+3
1.0e+3
5.0e+2
70 min.
80
90
100

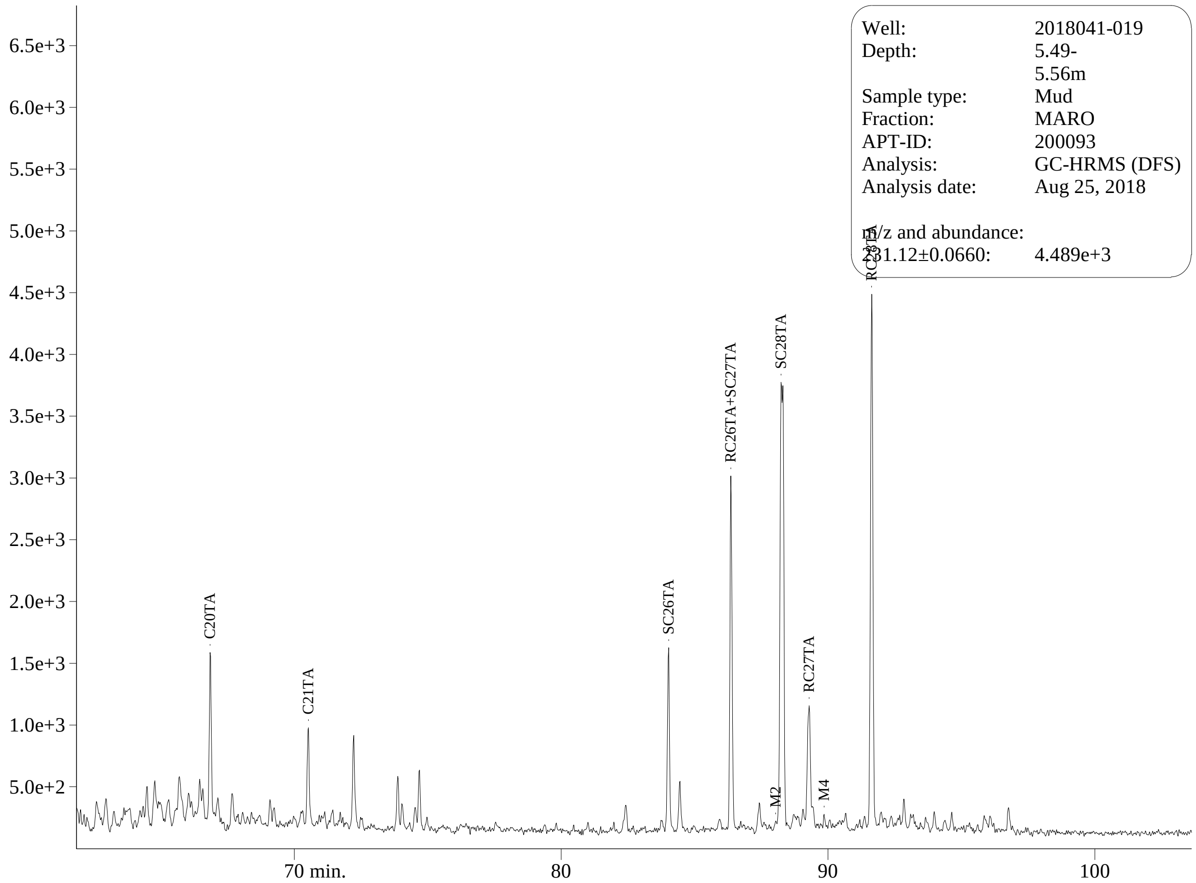

Well: 2018041-017
Depth: 4.01-4.06m
Sample type: Mud
Fraction: MARO
APT-ID: 200087
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
245.1330±0.0700: 1.049e+3
3MS-TA
4MS-TA
2,24DMS-TA
3,24DMS+3MR-TA
4,24DMS+4MR-TA
D1-TA
3M24ES-TA
D2-TA
4M24ES-TA
3,24DMR-TA
4,24DMR-TA
D3-TA
2M24ER-TA
3M24ER-TA
4M24ER-TA
D6-TA
84 min.
86
88
90
92
94
96
98
100
102

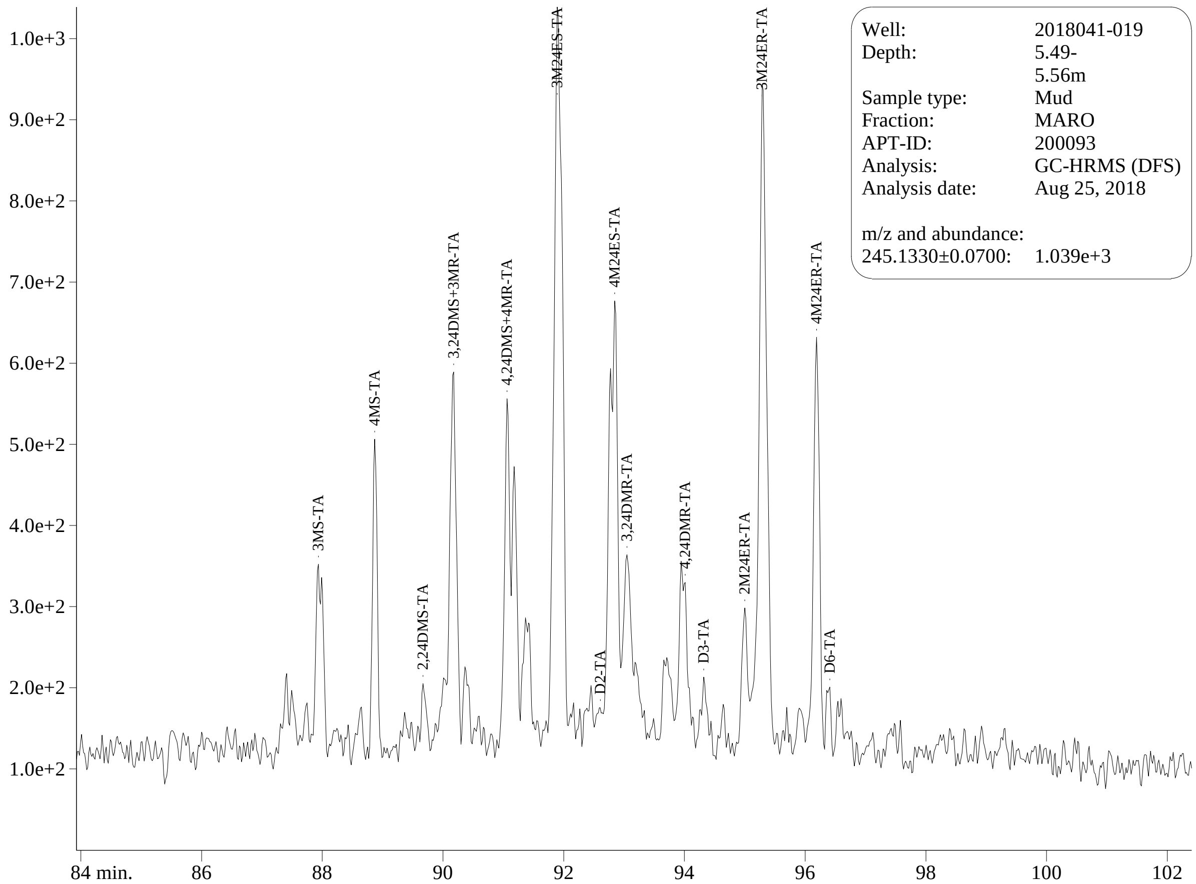

Well: 2018041-017
Depth: 4.01-4.06m
Sample type: Mud
Fraction: MARO
APT-ID: 200087
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
253.20±0.0723: 2.682e+3
C21MA
C22MA
bSC27MA
bSC27DMA
bRC27MA+bRC27DMA
aSC27MA
bSC28MA+bSC28DMA+aRC27DMA
aSC27DMA
bSC29MA+bSC29DMA
bRC28MA+bRC28DMA
aSC29MA
aRC28MA+bRC29MA+bRC29DMA
aRC29MA
60 min.
70
80
90


Well: 2018041-019
Depth: 5.49-5.56m
Sample type: Mud
Fraction: MARO
APT-ID: 200093
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
142.08±0.0406: 5.639e+3
156.09±0.0446: 5.639e+3
170.11±0.0486: 5.639e+3
2-MN
1-MN
1,3- + 1,7-DMN
1,6-DMN
2,3- + 1,4-DMN
1,5-DMN
1,2-DMN
1,8-DMN
1,3,7-TMN
1,3,6-TMN
1,3,5- + 1,4,6-TMN
2,3,6-TMN
1,2,7-TMN
1,2,4-TMN
1,2,5-TMN
14 min.
18
22
26
30

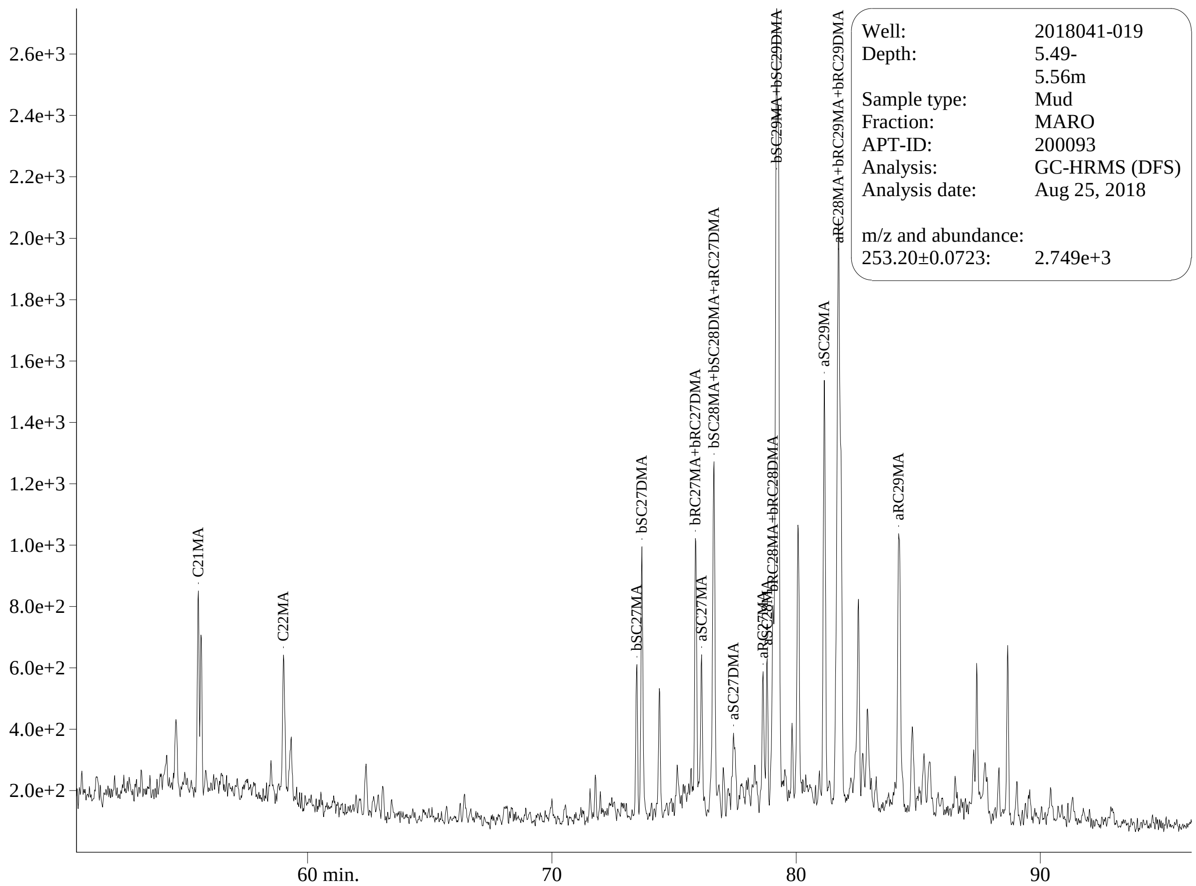

Well: 2018041-019
Depth: 5.49-5.56m
Sample type: Mud
Fraction: MARO
APT-ID: 200093
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
178.08±0.0509: 2.117e+4
192.09±0.0549: 2.117e+4
206.11±0.0589: 2.117e+4
219.12±0.0626: 2.117e+4
P
9-MP
3-MP
2-MP
1-MP
1,3- + 2,10- + 3,9- + 3,10-DMP
1,6- + 2,5- + 2,9-DMP
1,7-DMP
1,9- + 4,9- + 4,10-DMP
2,3-DMP
1,8-DMP
1,2-DMP
2-EP+9-EP+3,6-DMP
2,6- + 2,7- + 3,5-DMP
1-EP
Retene
38 min.
42
46
50
54
58
62


Well: 2018041-019
Depth: 5.49-5.56m
Sample type: Mud
Fraction: MARO
APT-ID: 200093
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
184.03±0.0526: 2.834e+3
198.05±0.0566: 2.834e+3
212.07±0.0606: 2.834e+3
DBT
4-MDBT
(3+2)-MDBT
1-MDBT
3.6e+3
3.2e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
34 min.
36
38
40
42
44
46
48
50
52

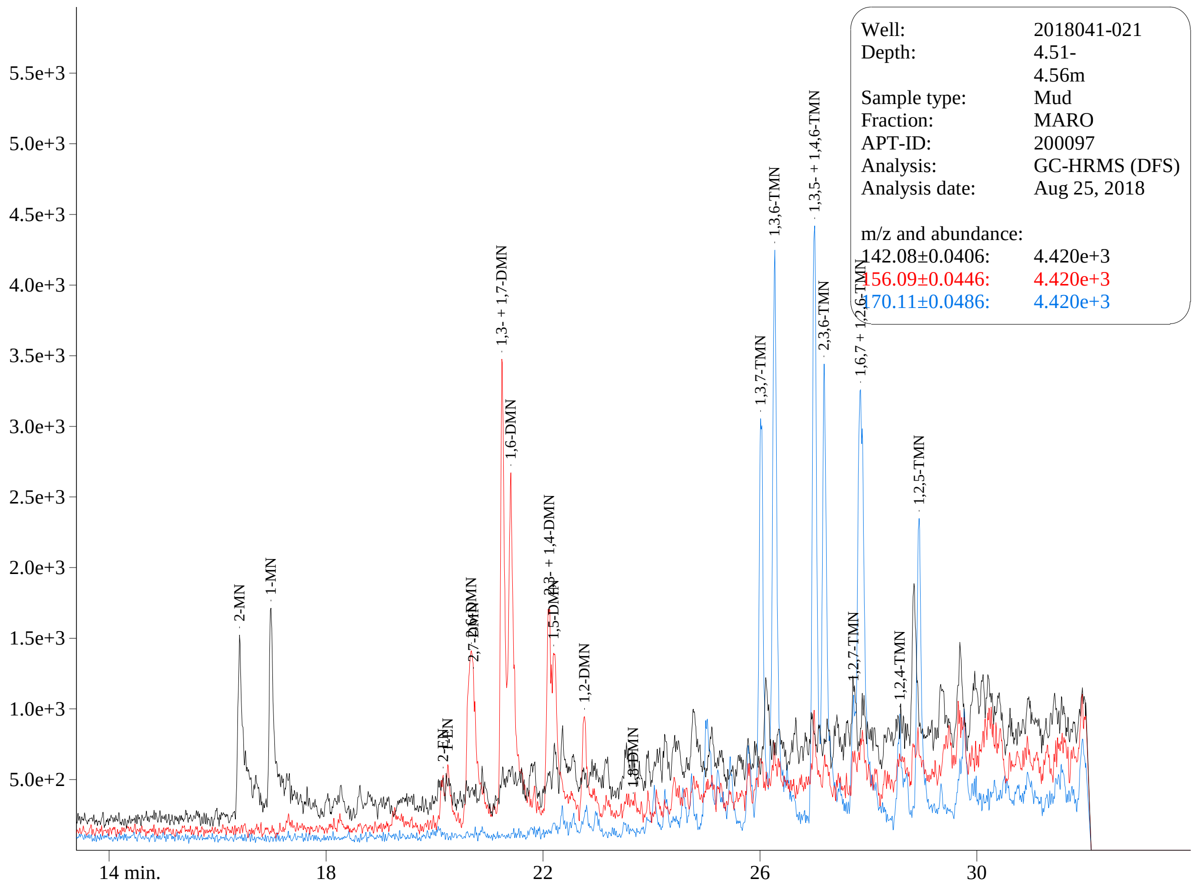

Well: 2018041-019
Depth: 5.49-5.56m
Sample type: Mud
Fraction: MARO
APT-ID: 200093
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
231.12±0.0660: 4.489e+3
C20TA
C21TA
SC26TA
RC26TA+SC27TA
SC28TA
RC27TA
M2
M4
RC28TA
6.5e+3
6.0e+3
5.5e+3
5.0e+3
4.5e+3
4.0e+3
3.5e+3
3.0e+3
2.5e+3
2.0e+3
1.5e+3
1.0e+3
5.0e+2
70 min.
80
90
100

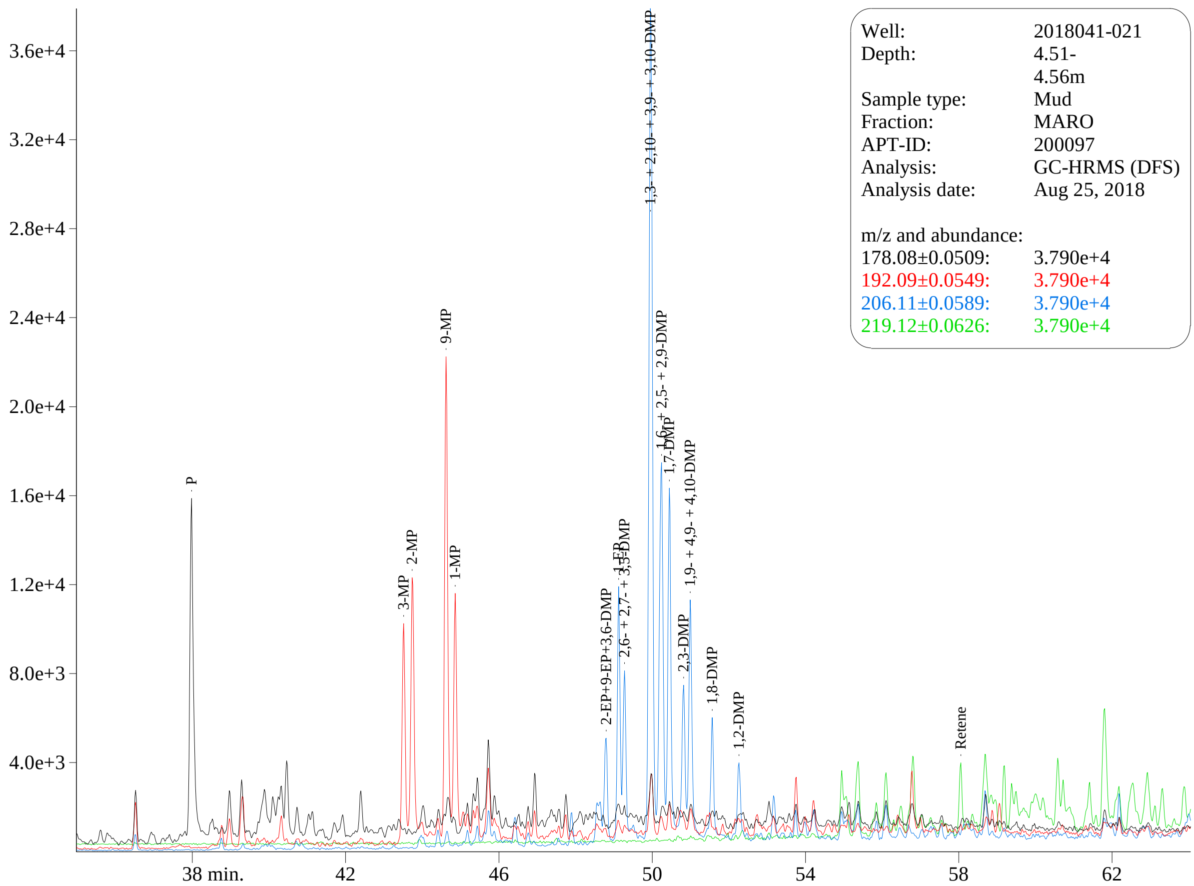


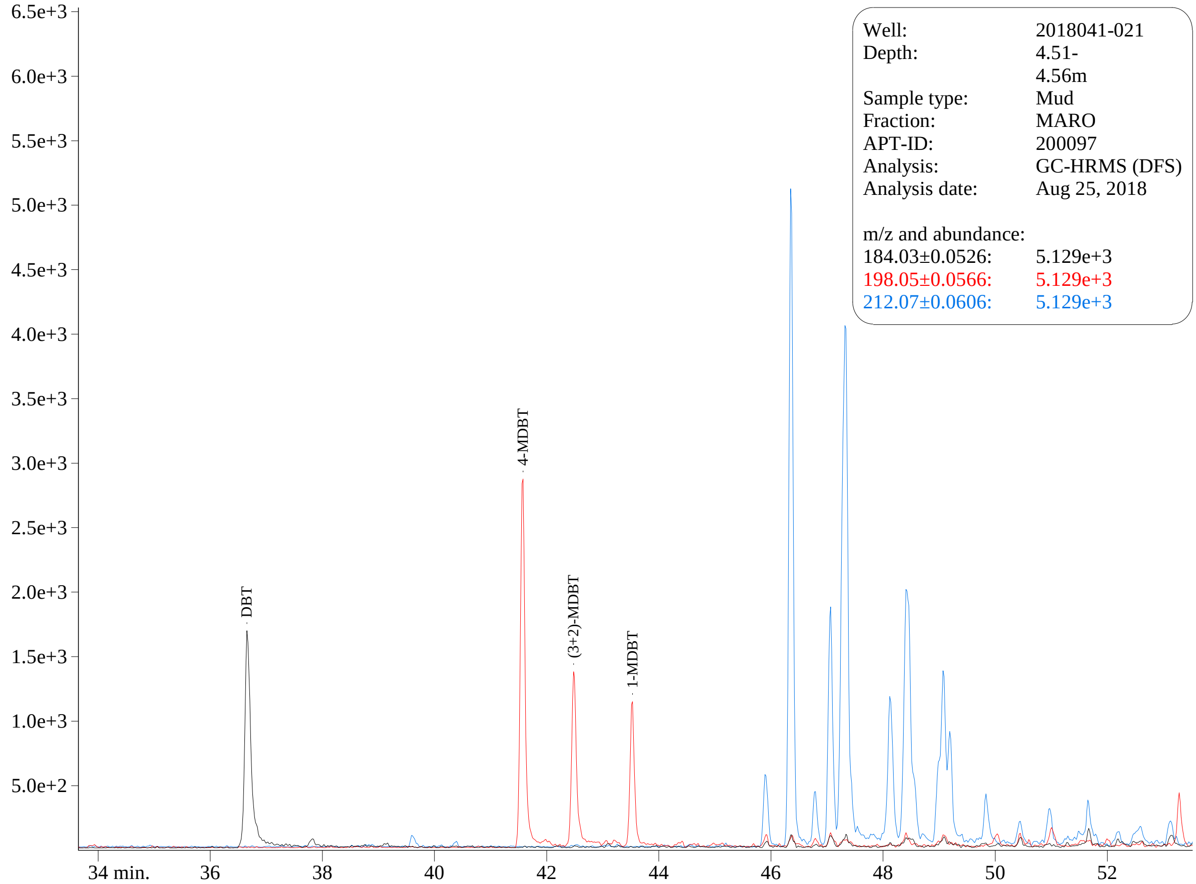
Well: 2018041-019
Depth: 5.49-5.56m
Sample type: Mud
Fraction: MARO
APT-ID: 200093
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
245.1330±0.0700: 1.039e+3
3MS-TA
4MS-TA
2,24DMS-TA
3,24DMS+3MR-TA
4,24DMS+4MR-TA
3M24ES-TA
D2-TA
4M24ES-TA
3,24DMR-TA
4,24DMR-TA
D3-TA
2M24ER-TA
3M24ER-TA
4M24ER-TA
D6-TA
84 min.
86
88
90
92
94
96
98
100
102

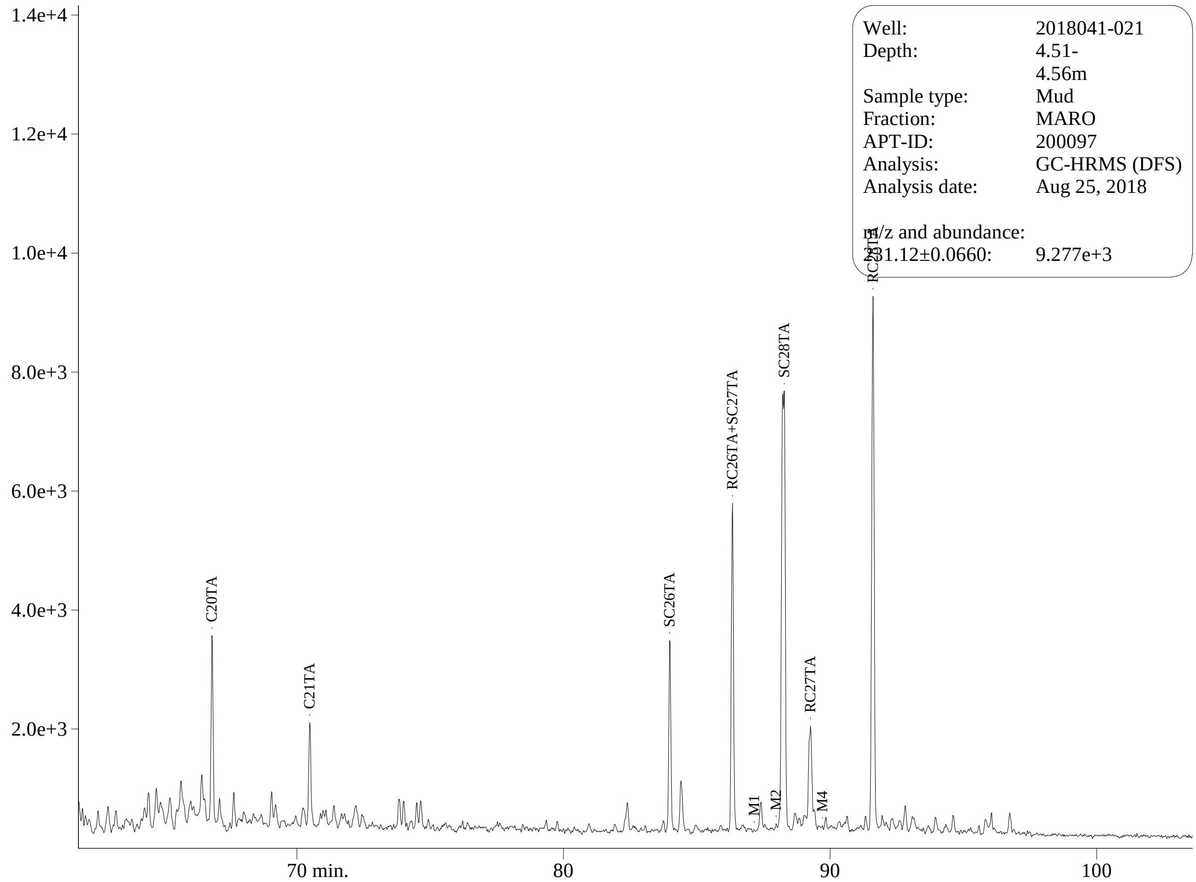


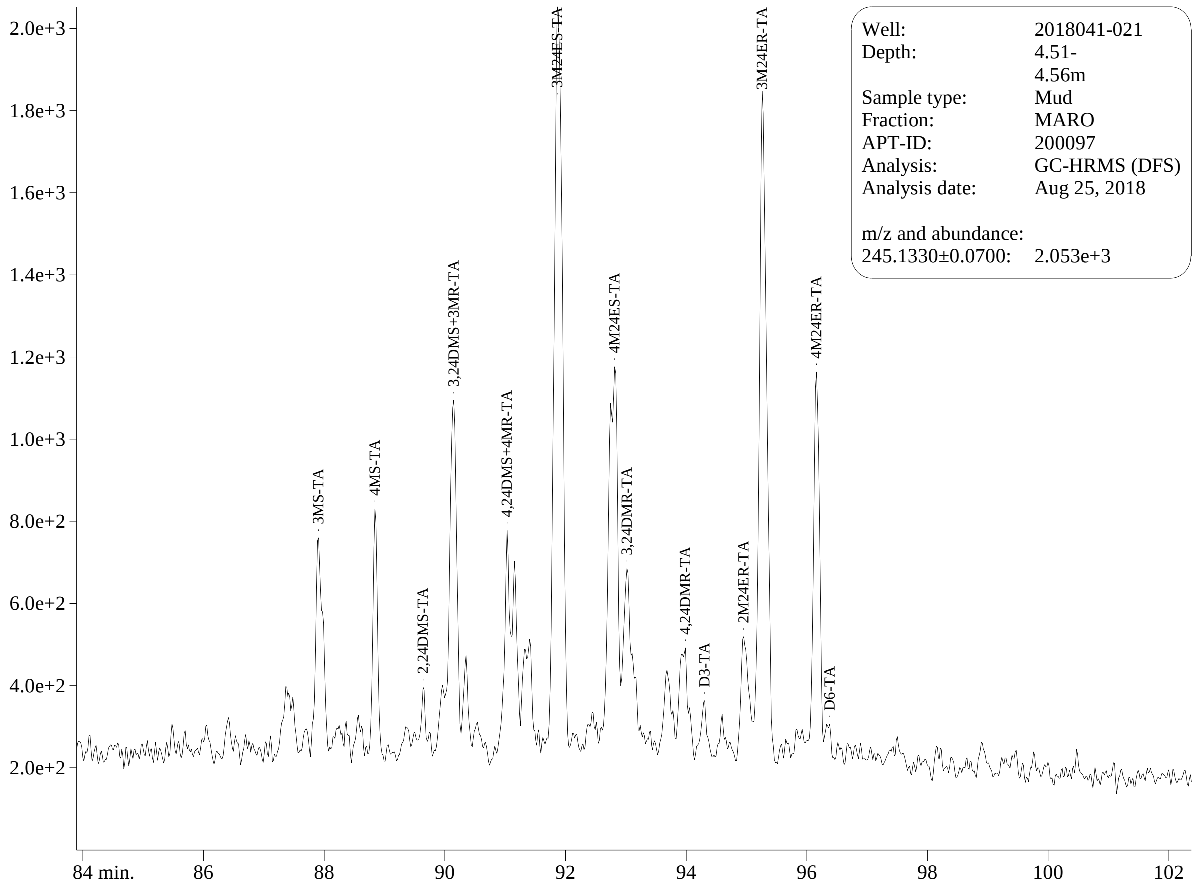
Well: 2018041-019
Depth: 5.49-5.56m
Sample type: Mud
Fraction: MARO
APT-ID: 200093
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
253.20±0.0723: 2.749e+3
C21MA
C22MA
bSC27MA
bSC27DMA
bRC27MA+bRC27DMA
aSC27MA
bSC28MA+bSC28DMA+aRC27DMA
aSC27DMA
bRC28MA+bRC28DMA
bSC29MA+bSC29DMA
aSC29MA
aRC28MA+bRC29MA+bRC29DMA
aRC29MA
60 min.
70
80
90

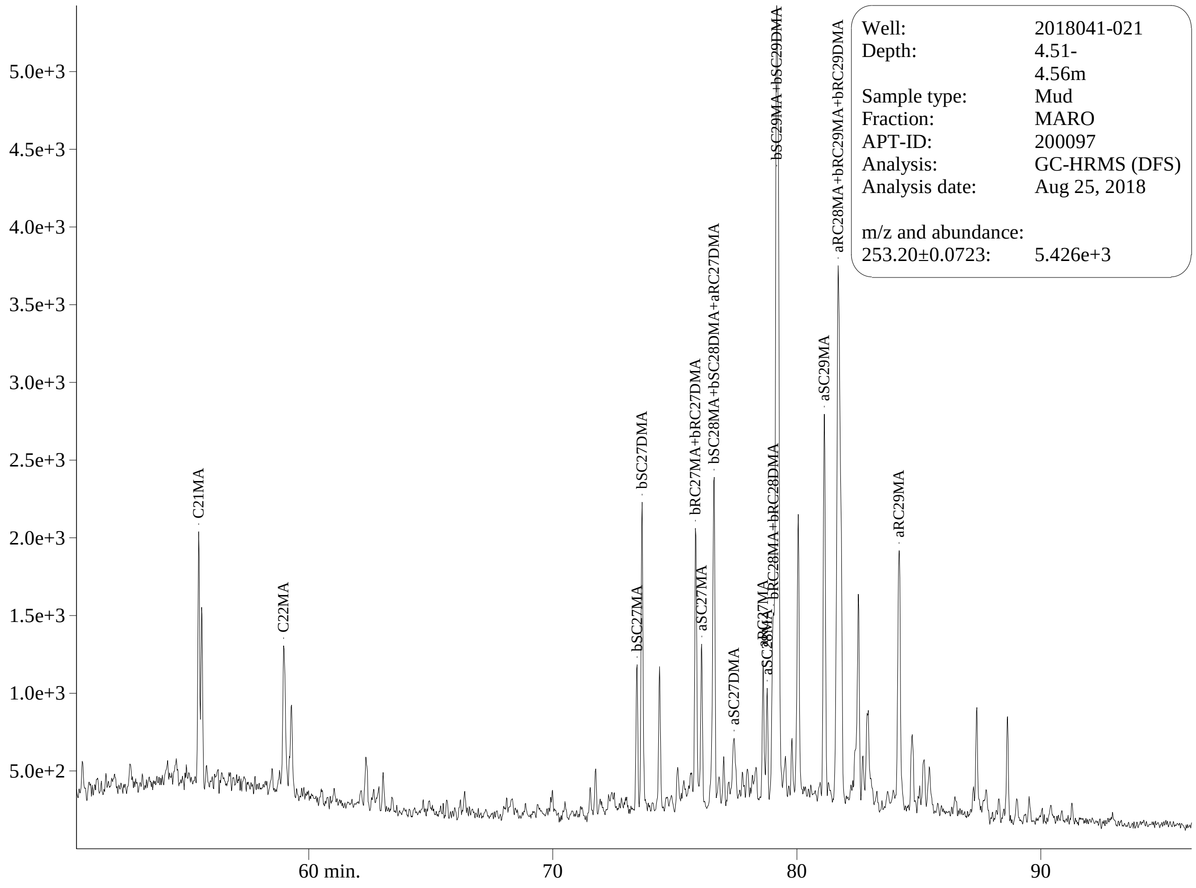

Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MARO
APT-ID: 200097
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
142.08±0.0406: 4.420e+3
156.09±0.0446: 4.420e+3
170.11±0.0486: 4.420e+3
5.5e+3
5.0e+3
4.5e+3
4.0e+3
3.5e+3
3.0e+3
2.5e+3
2.0e+3
1.5e+3
1.0e+3
5.0e+2
14 min.
18
22
26
30
2-MN
1-MN
2-EN
1-EN
2,7-DMN
1,3- + 1,7-DMN
1,6-DMN
2,3- + 1,4-DMN
1,5-DMN
1,2-DMN
1,8-DMN
1,3,7-TMN
1,3,6-TMN
1,3,5- + 1,4,6-TMN
2,3,6-TMN
1,2,7-TMN
1,6,7 + 1,2,6-TMN
1,2,4-TMN
1,2,5-TMN

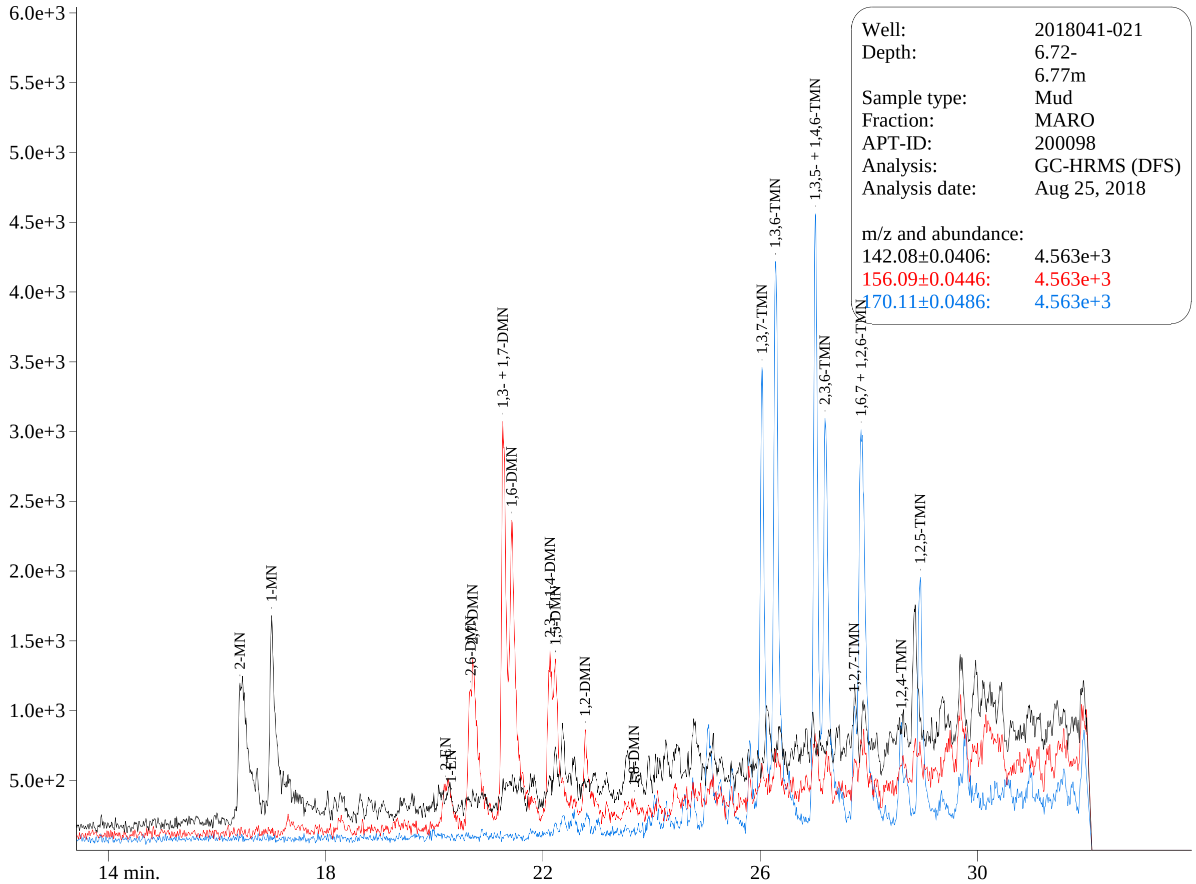

Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MARO
APT-ID: 200097
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
178.08±0.0509: 3.790e+4
192.09±0.0549: 3.790e+4
206.11±0.0589: 3.790e+4
219.12±0.0626: 3.790e+4
3.6e+4
3.2e+4
2.8e+4
2.4e+4
2.0e+4
1.6e+4
1.2e+4
8.0e+3
4.0e+3
38 min.
42
46
50
54
58
62
P
3-MP
2-MP
9-MP
1-MP
2-EP+9-EP+3,6-DMP
2,6- + 2,7- + 3,5-DMP
1,3- + 2,10- + 3,9- + 3,10-DMP
1,6- + 2,5- + 2,9-DMP
1,7-DMP
1,9- + 4,9- + 4,10-DMP
2,3-DMP
1,8-DMP
1,2-DMP
Retene


Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MARO
APT-ID: 200097
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
184.03±0.0526: 5.129e+3
198.05±0.0566: 5.129e+3
212.07±0.0606: 5.129e+3
DBT
4-MDBT
(3+2)-MDBT
1-MDBT
34 min.
36
38
40
42
44
46
48
50
52
6.5e+3
6.0e+3
5.5e+3
5.0e+3
4.5e+3
4.0e+3
3.5e+3
3.0e+3
2.5e+3
2.0e+3
1.5e+3
1.0e+3
5.0e+2

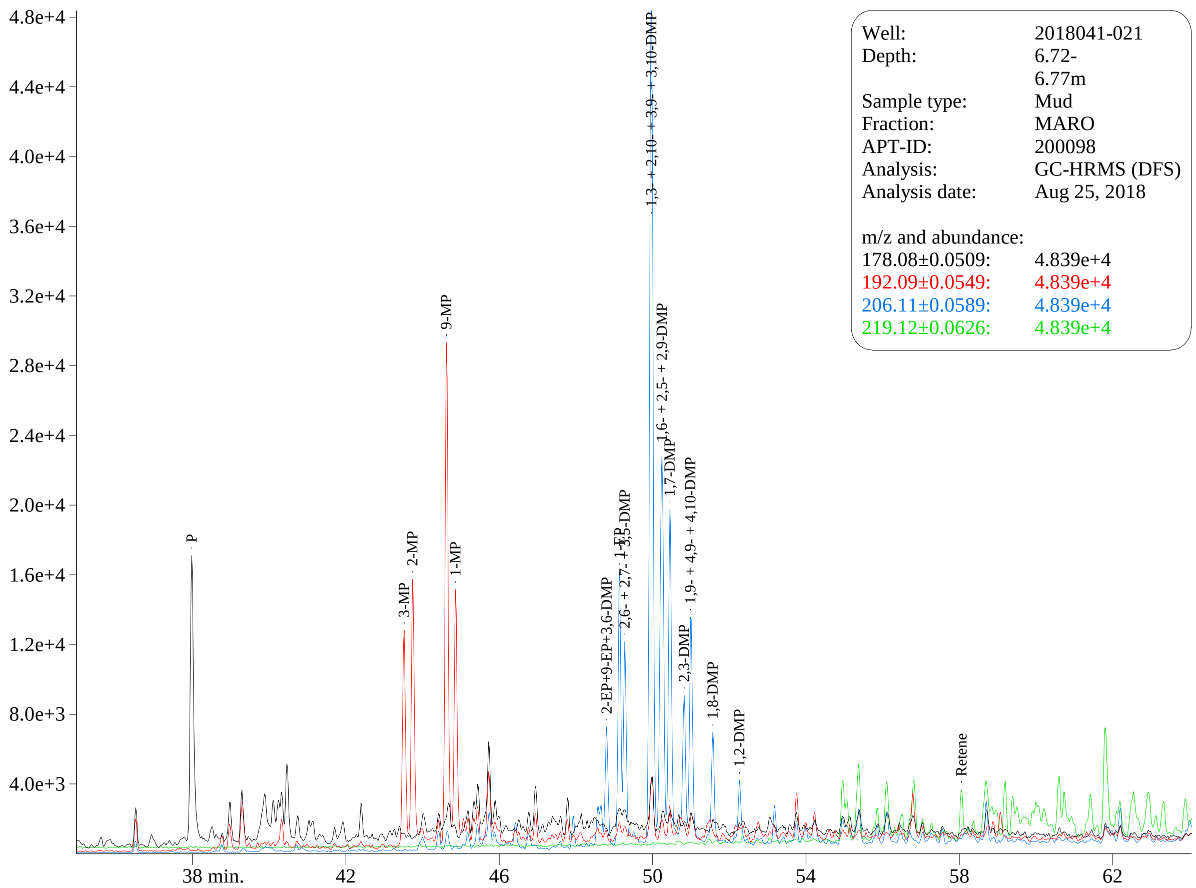

Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MARO
APT-ID: 200097
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
231.12±0.0660: 9.277e+3
C20TA
C21TA
SC26TA
RC26TA+SC27TA
SC28TA
RC27TA
M1
M2
M4
70 min.
80
90
100
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3


Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MARO
APT-ID: 200097
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
245.1330±0.0700: 2.053e+3
3MS-TA
4MS-TA
2,24DMS-TA
3,24DMS+3MR-TA
4,24DMS+4MR-TA
3M24ES-TA
4M24ES-TA
3,24DMR-TA
4,24DMR-TA
D3-TA
2M24ER-TA
3M24ER-TA
4M24ER-TA
D6-TA
84 min.
86
88
90
92
94
96
98
100
102

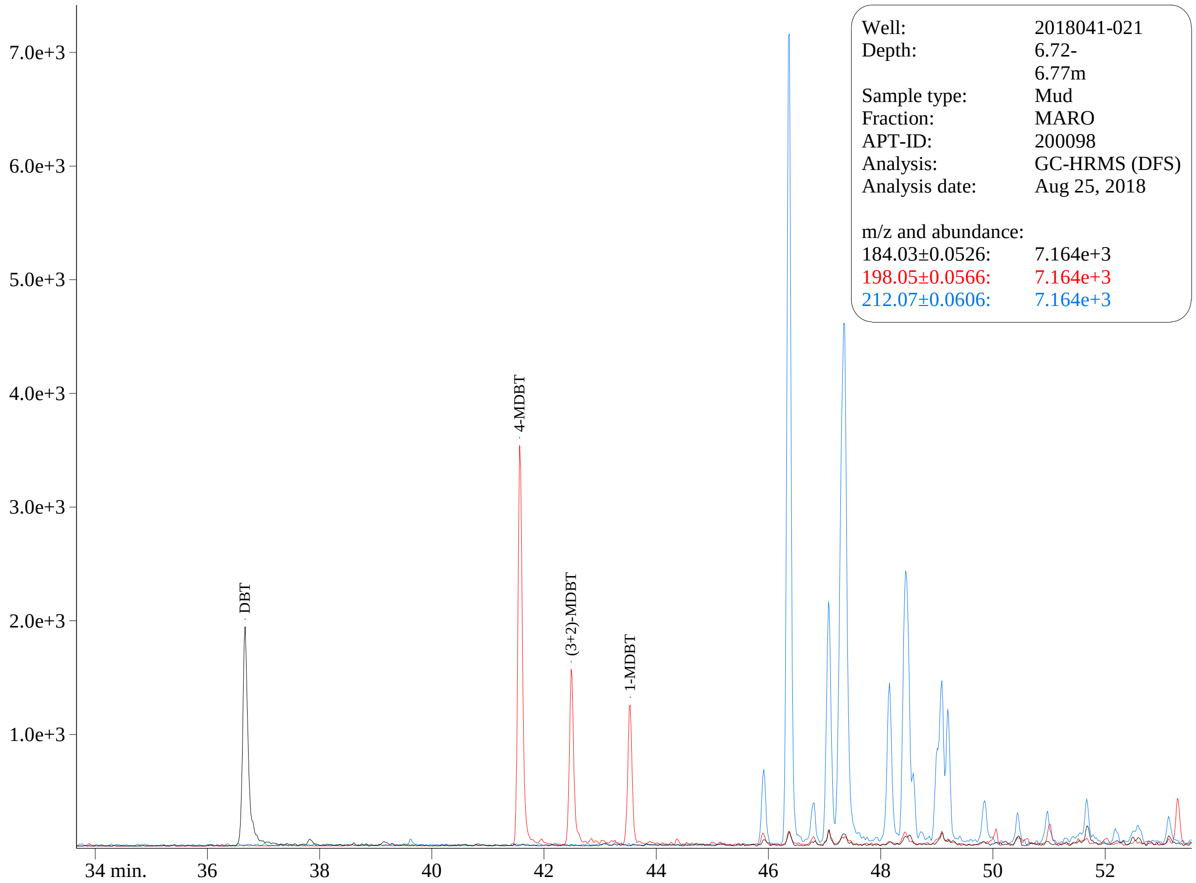

Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MARO
APT-ID: 200097
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
253.20±0.0723: 5.426e+3
C21MA
C22MA
bSC27MA
bSC27DMA
bRC27MA+bRC27DMA
aSC27MA
bSC28MA+bSC28DMA+aRC27DMA
aSC27DMA
bSC29MA+bSC29DMA
bRC28MA+bRC28DMA
aSC29MA
aRC28MA+bRC29MA+bRC29DMA
aRC29MA
60 min.
70
80
90

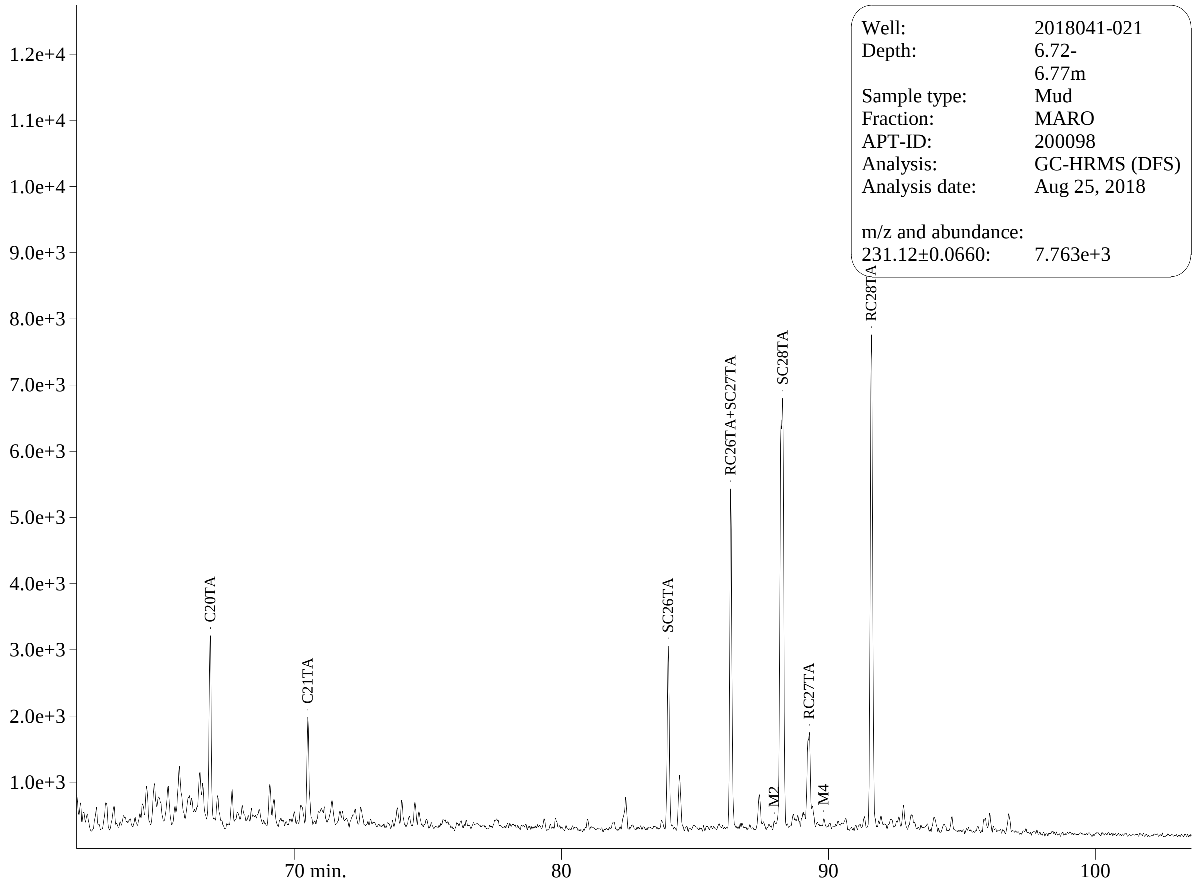


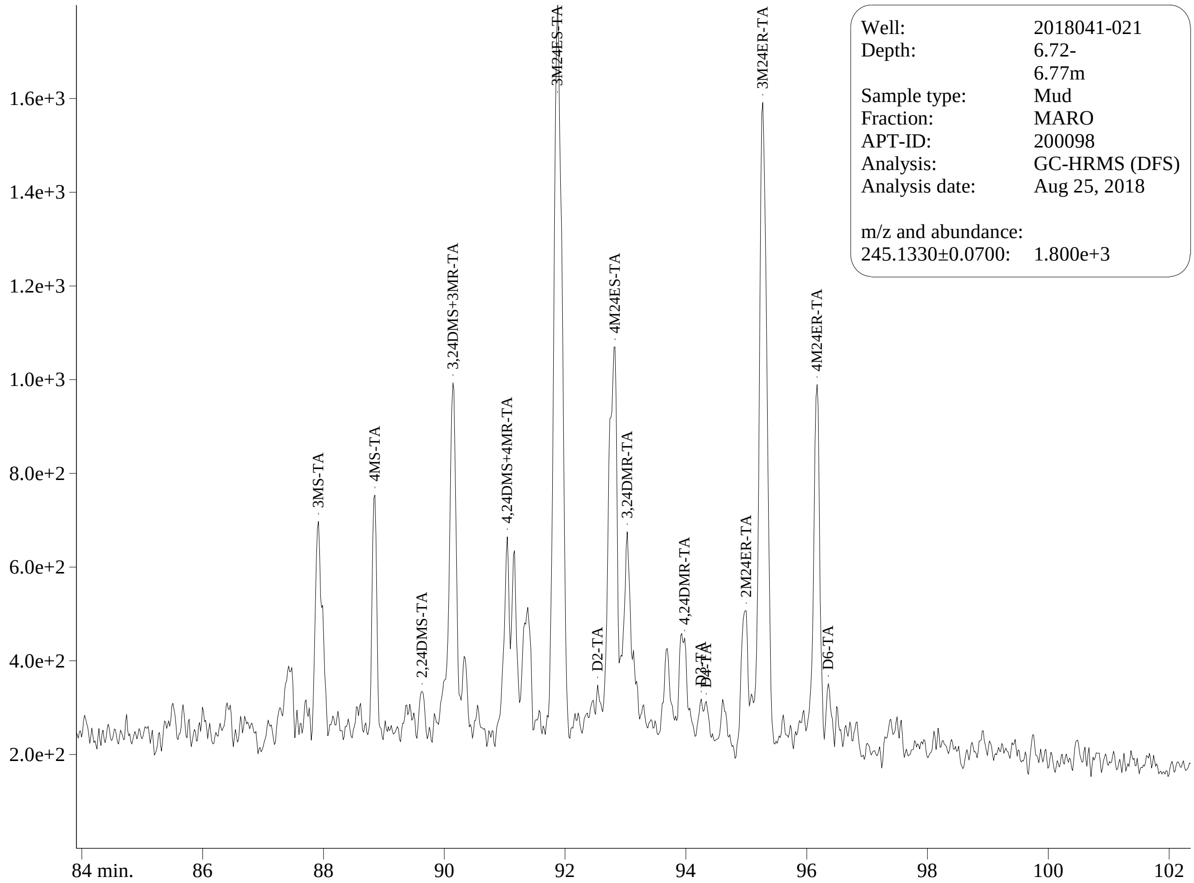
Well: 2018041-021
Depth: 6.72-6.77m
Sample type: Mud
Fraction: MARO
APT-ID: 200098
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
142.08±0.0406: 4.563e+3
156.09±0.0446: 4.563e+3
170.11±0.0486: 4.563e+3
2-MN
1-MN
2-EN
1-EN
2,6-DMN
2,7-DMN
1,3- + 1,7-DMN
1,6-DMN
2,3- + 1,4-DMN
1,5-DMN
1,2-DMN
1,8-DMN
1,3,7-TMN
1,3,6-TMN
1,3,5- + 1,4,6-TMN
2,3,6-TMN
1,2,7-TMN
1,6,7 + 1,2,6-TMN
1,2,4-TMN
1,2,5-TMN
14 min.
18
22
26
30



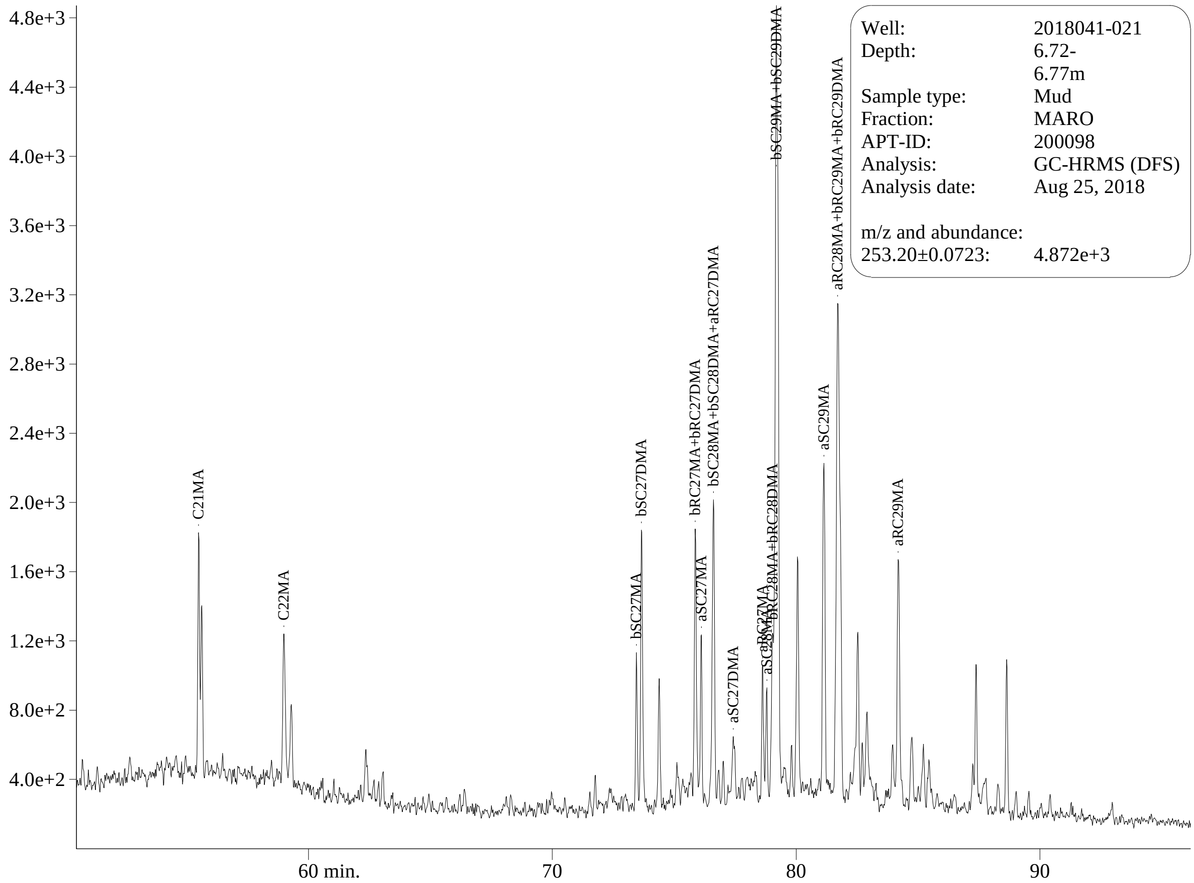
Well: 2018041-021
Depth: 6.72-6.77m
Sample type: Mud
Fraction: MARO
APT-ID: 200098
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
178.08±0.0509: 4.839e+4
192.09±0.0549: 4.839e+4
206.11±0.0589: 4.839e+4
219.12±0.0626: 4.839e+4
P
3-MP
2-MP
9-MP
1-MP
2-EP+9-EP+3,6-DMP
2,6- + 2,7- + 3,5-DMP
1-EP
1,3- + 2,10- + 3,9- + 3,10-DMP
1,6- + 2,5- + 2,9-DMP
1,7-DMP
1,9- + 4,9- + 4,10-DMP
2,3-DMP
1,8-DMP
1,2-DMP
Retene
38 min.
42
46
50
54
58
62


Well: 2018041-021
Depth: 6.72-6.77m
Sample type: Mud
Fraction: MARO
APT-ID: 200098
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
184.03±0.0526: 7.164e+3
198.05±0.0566: 7.164e+3
212.07±0.0606: 7.164e+3
DBT
4-MDBT
(3+2)-MDBT
1-MDBT
34 min.
36
38
40
42
44
46
48
50
52
7.0e+3
6.0e+3
5.0e+3
4.0e+3
3.0e+3
2.0e+3
1.0e+3

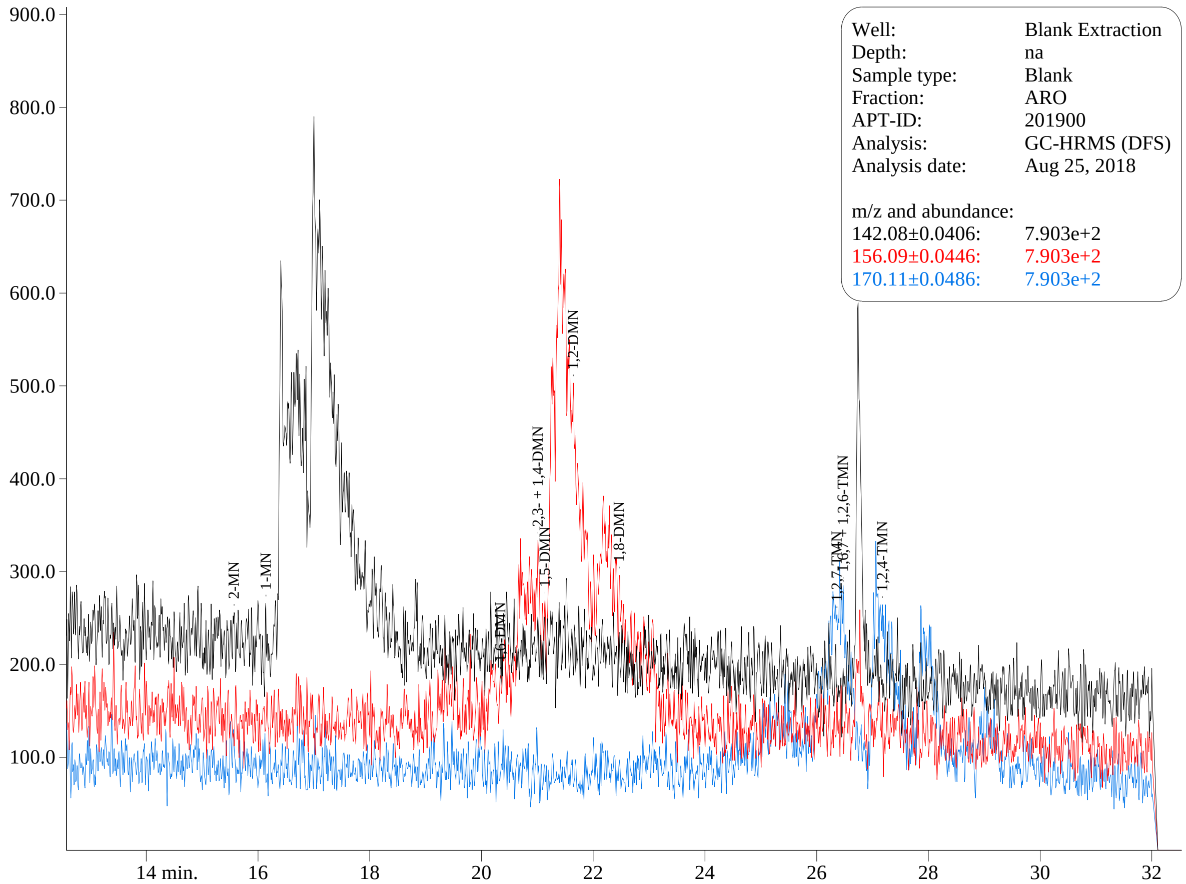

Well: 2018041-021
Depth: 6.72-6.77m
Sample type: Mud
Fraction: MARO
APT-ID: 200098
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
231.12±0.0660: 7.763e+3
C20TA
C21TA
SC26TA
RC26TA+SC27TA
SC28TA
M2
RC27TA
M4
RC28TA
70 min.
80
90
100
1.2e+4
1.1e+4
1.0e+4
9.0e+3
8.0e+3
7.0e+3
6.0e+3
5.0e+3
4.0e+3
3.0e+3
2.0e+3
1.0e+3

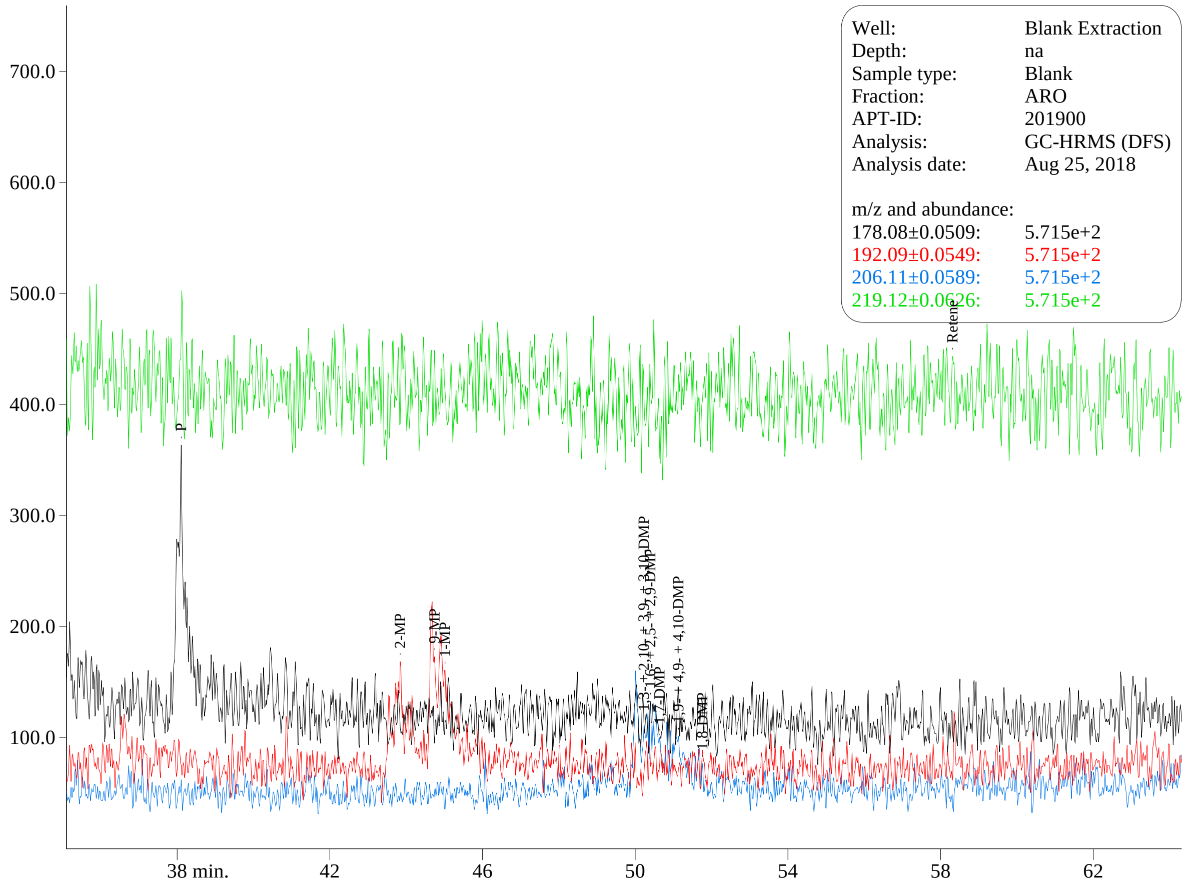


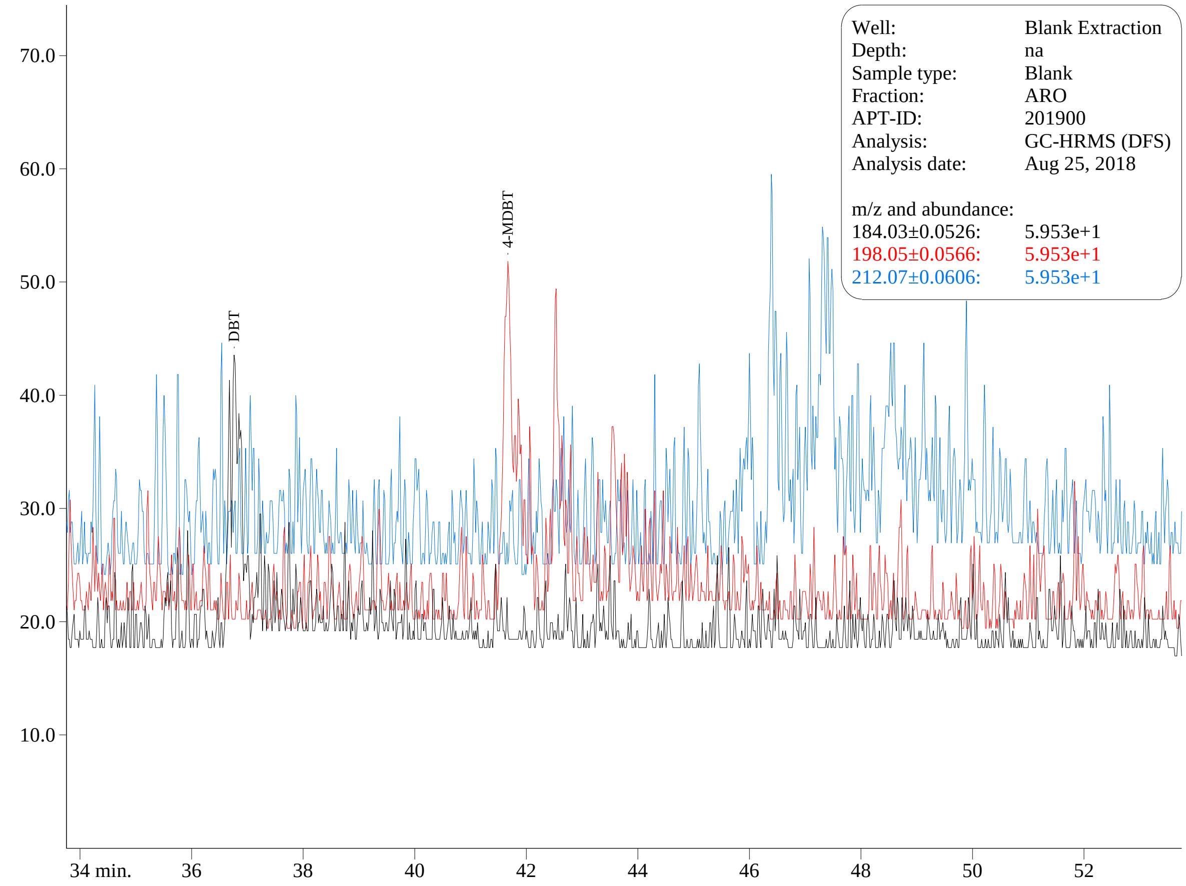
Well: 2018041-021
Depth: 6.72-6.77m
Sample type: Mud
Fraction: MARO
APT-ID: 200098
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
245.1330±0.0700: 1.800e+3
3MS-TA
4MS-TA
2,24DMS-TA
3,24DMS+3MR-TA
4,24DMS+4MR-TA
3M24ES-TA
D2-TA
4M24ES-TA
3,24DMR-TA
4,24DMR-TA
2M24ER-TA
3M24ER-TA
4M24ER-TA
D6-TA
84 min.
86
88
90
92
94
96
98
100
102

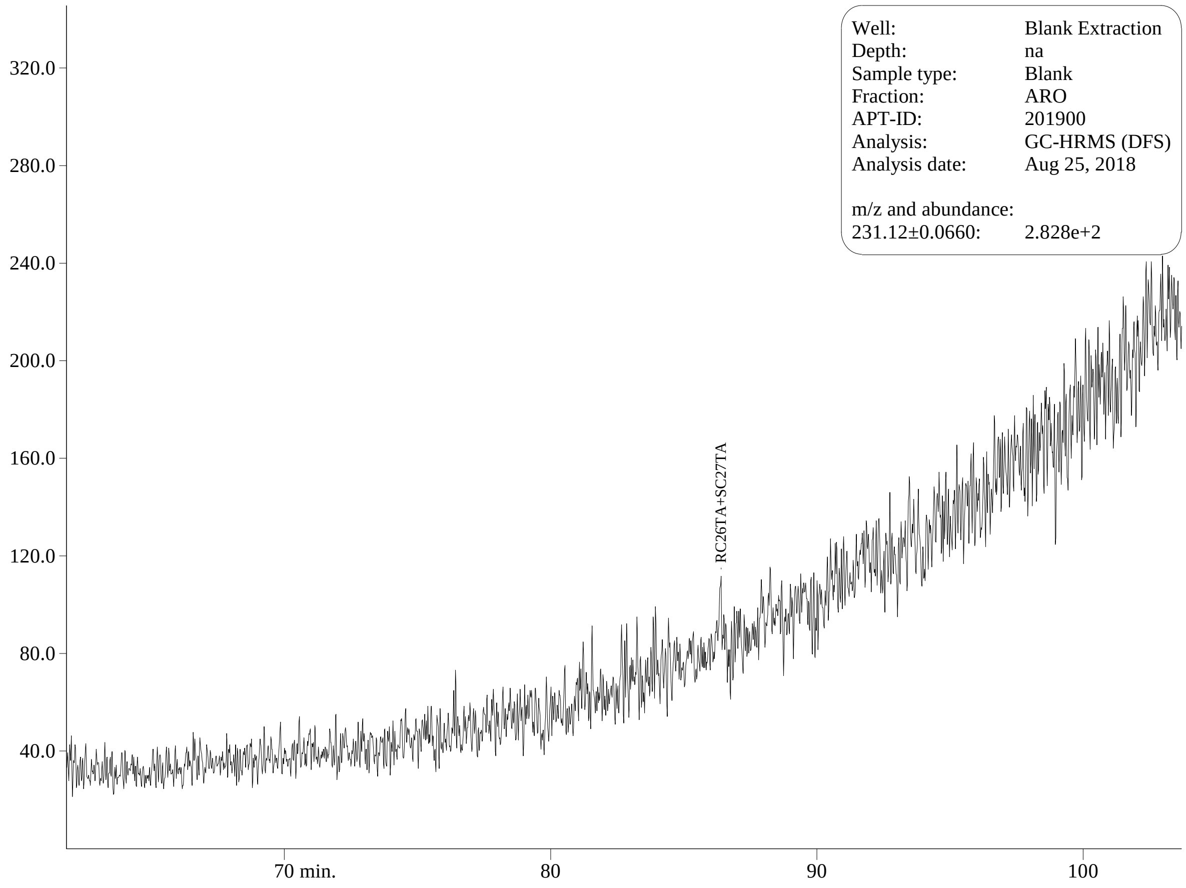


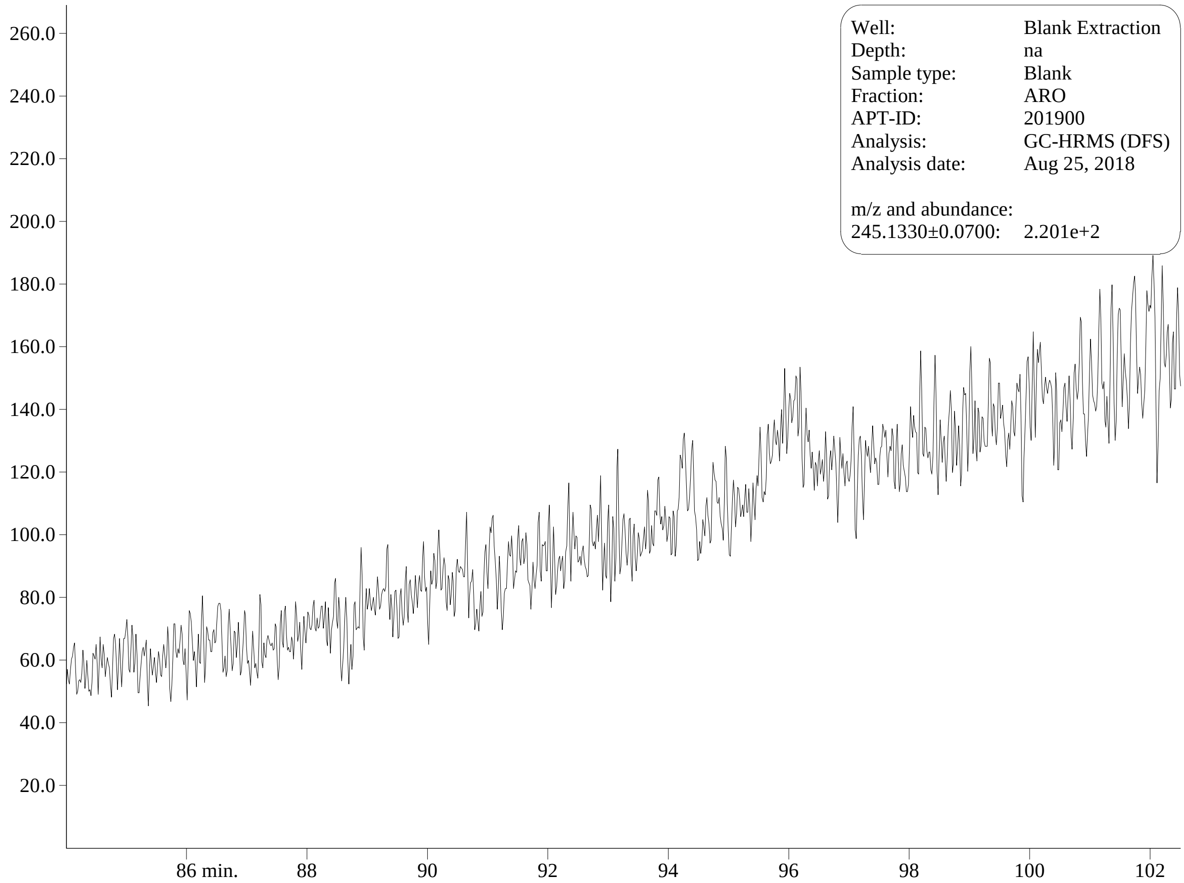
Well: 2018041-021
Depth: 6.72-6.77m
Sample type: Mud
Fraction: MARO
APT-ID: 200098
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
253.20±0.0723: 4.872e+3
C21MA
C22MA
bSC27MA
bSC27DMA
bRC27MA+bRC27DMA
aSC27MA
bSC28MA+bSC28DMA+aRC27DMA
aSC27DMA
bSC29MA+bSC29DMA
aSC29MA
aRC28MA+bRC29MA+bRC29DMA
aRC29MA
60 min.
70
80
90

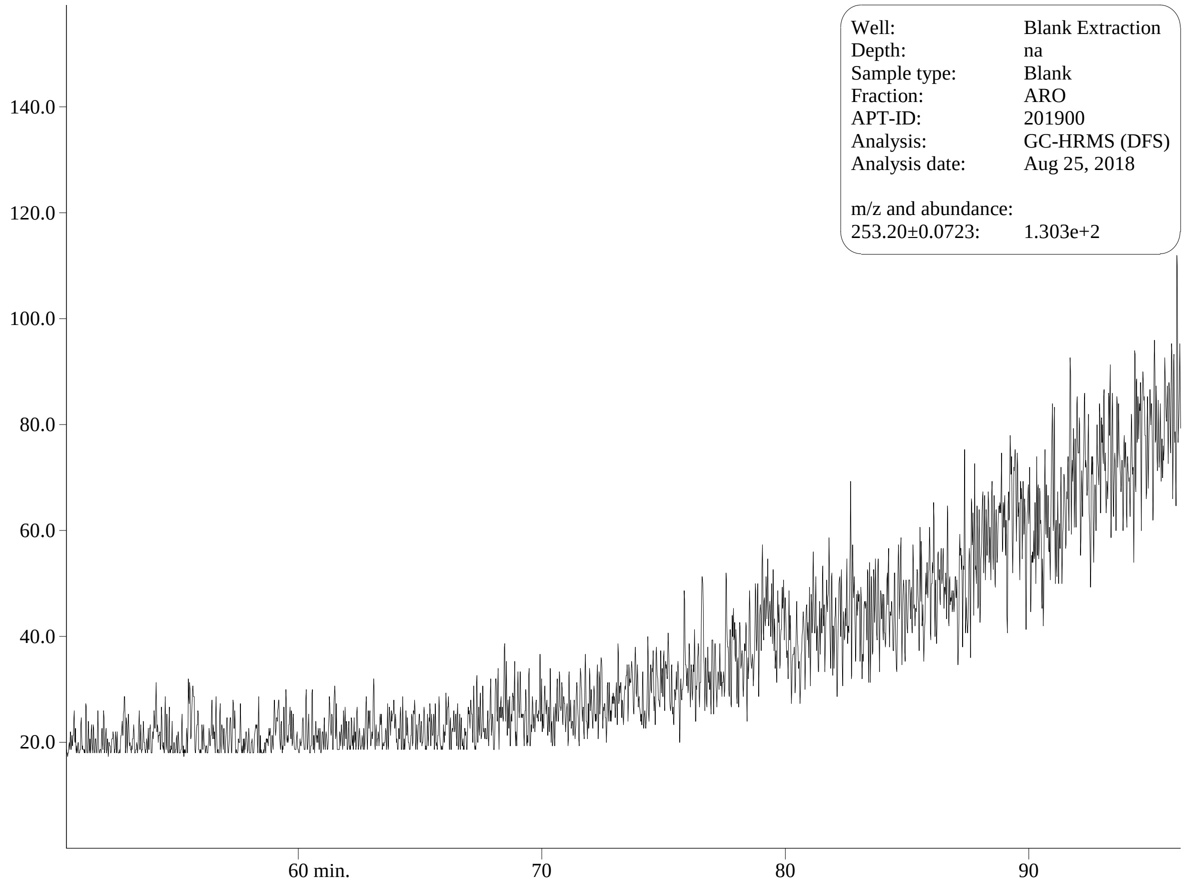

Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: ARO
APT-ID: 201900
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
142.08±0.0406: 7.903e+2
156.09±0.0446: 7.903e+2
170.11±0.0486: 7.903e+2
2-MN
1-MN
1,6-DMN
1,5-DMN
2,3- + 1,4-DMN
1,2-DMN
1,8-DMN
1,2,7-TMN
1,3,7-
1,2,6-TMN
1,2,4-TMN
900.0
800.0
700.0
600.0
500.0
400.0
300.0
200.0
100.0
14 min.
16
18
20
22
24
26
28
30
32

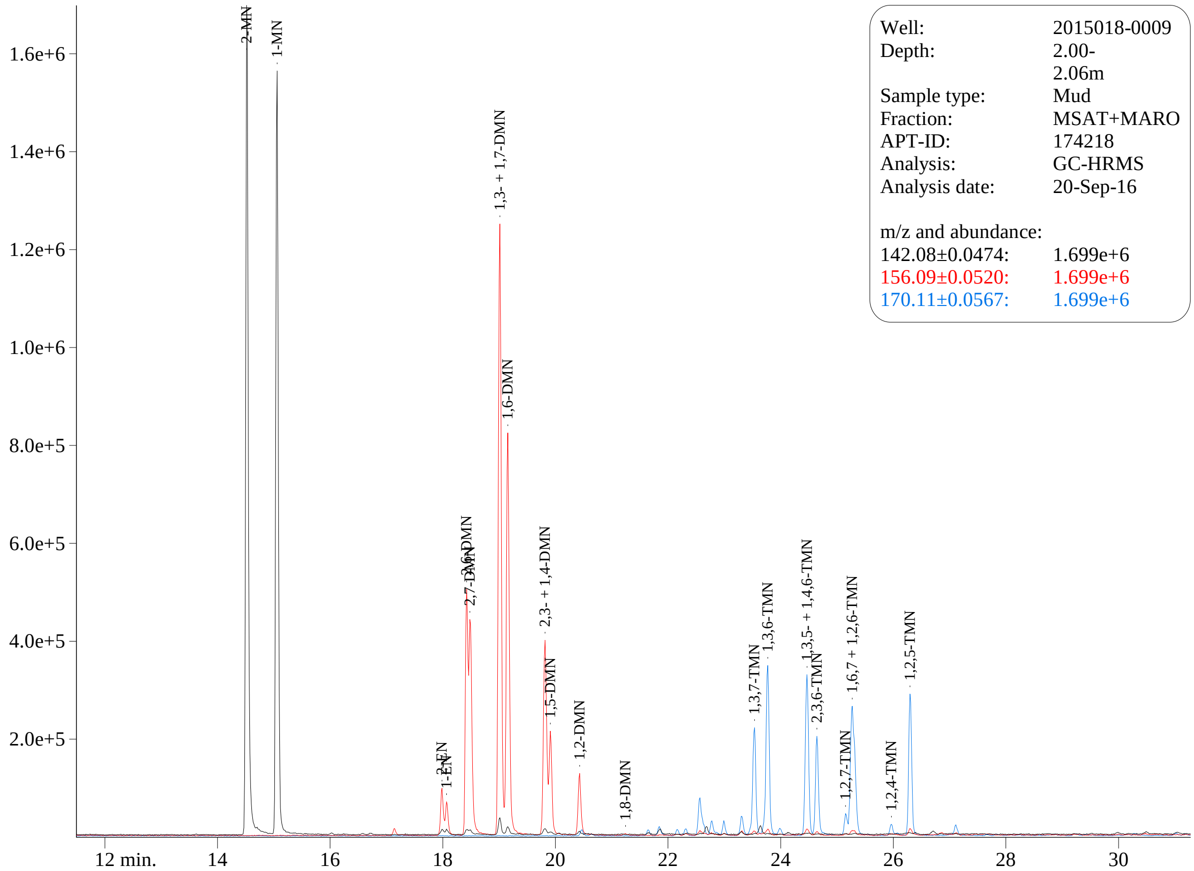

Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: ARO
APT-ID: 201900
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
178.08±0.0509: 5.715e+2
192.09±0.0549: 5.715e+2
206.11±0.0589: 5.715e+2
219.12±0.0626: 5.715e+2
P
2-MP
9-MP
1-MP
1,7-DMP
1,9- + 4,9- + 4,10-DMP
1,8-DMP
Retene
700.0
600.0
500.0
400.0
300.0
200.0
100.0
38 min.
42
46
50
54
58
62

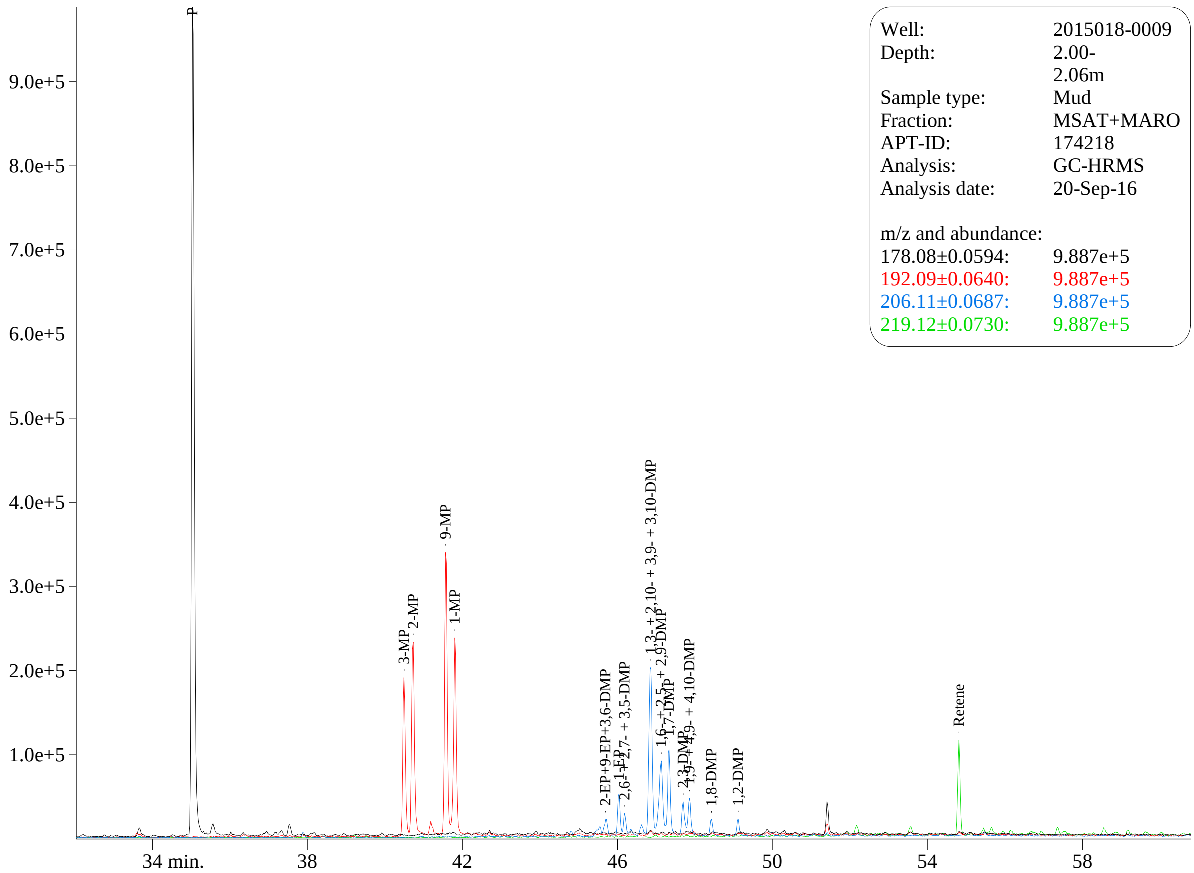

Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: ARO
APT-ID: 201900
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
184.03±0.0526: 5.953e+1
198.05±0.0566: 5.953e+1
212.07±0.0606: 5.953e+1
DBT
4-MDBT
70.0
60.0
50.0
40.0
30.0
20.0
10.0
34 min.
36
38
40
42
44
46
48
50
52

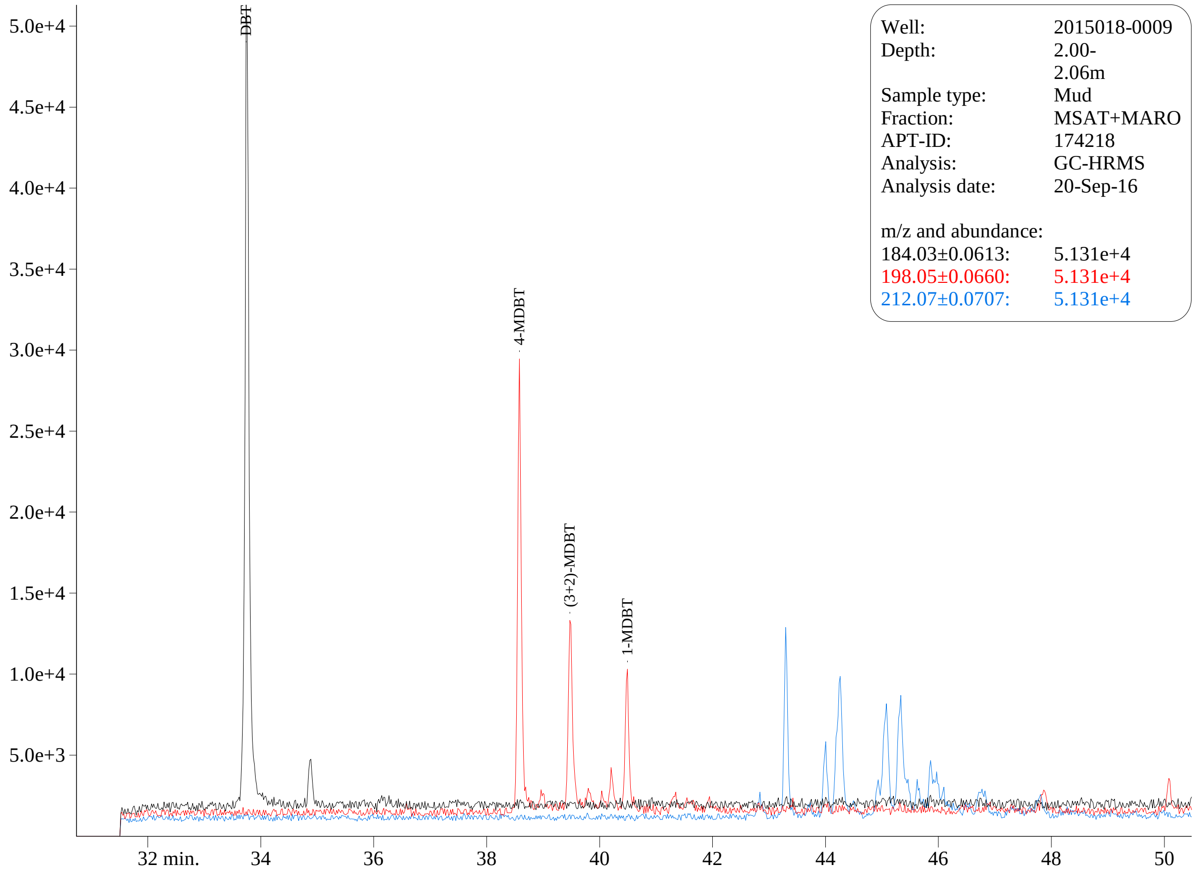

Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: ARO
APT-ID: 201900
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
231.12±0.0660: 2.828e+2
RC26TA+SC27TA
320.0
280.0
240.0
200.0
160.0
120.0
80.0
40.0
70 min.
80
90
100


Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: ARO
APT-ID: 201900
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
245.1330±0.0700: 2.201e+2
260.0
240.0
220.0
200.0
180.0
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
86 min.
88
90
92
94
96
98
100
102

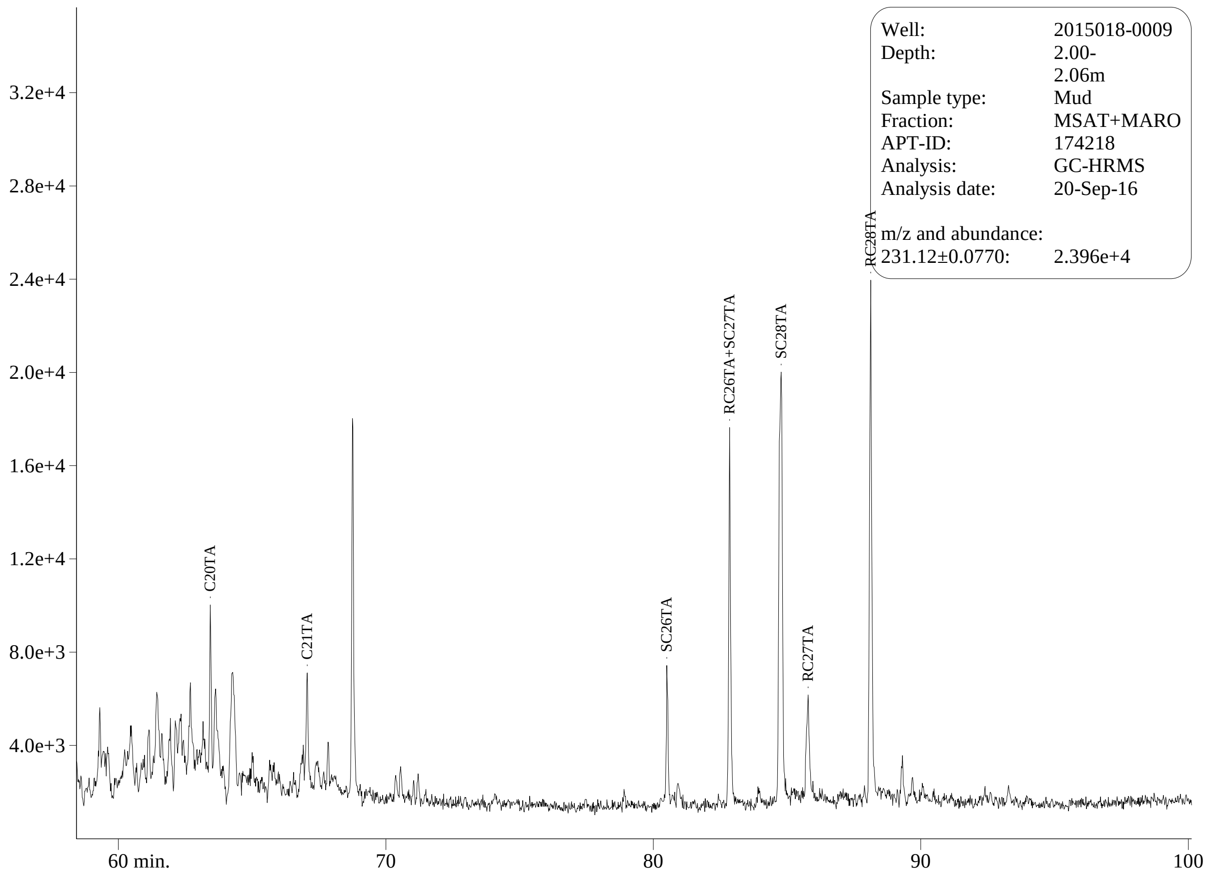

Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: ARO
APT-ID: 201900
Analysis: GC-HRMS (DFS)
Analysis date: Aug 25, 2018
m/z and abundance:
253.20±0.0723: 1.303e+2
140.0
120.0
100.0
80.0
60.0
40.0
20.0
60 min.
70
80
90


Well: 2015018-0009
Depth: 2.00-2.06m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174218
Analysis: GC-HRMS
Analysis date: 20-Sep-16
m/z and abundance:
142.08±0.0474: 1.699e+6
156.09±0.0520: 1.699e+6
170.11±0.0567: 1.699e+6
2-MN
1-MN
1,3- + 1,7-DMN
1,6-DMN
2,6-DMN
2,7-DMN
2,3- + 1,4-DMN
1,5-DMN
1,2-DMN
1,8-DMN
2-EN
1-EN
1,3,7-TMN
1,3,6-TMN
1,3,5- + 1,4,6-TMN
2,3,6-TMN
1,2,7-TMN
1,6,7 + 1,2,6-TMN
1,2,4-TMN
1,2,5-TMN
12 min.
14
16
18
20
22
24
26
28
30

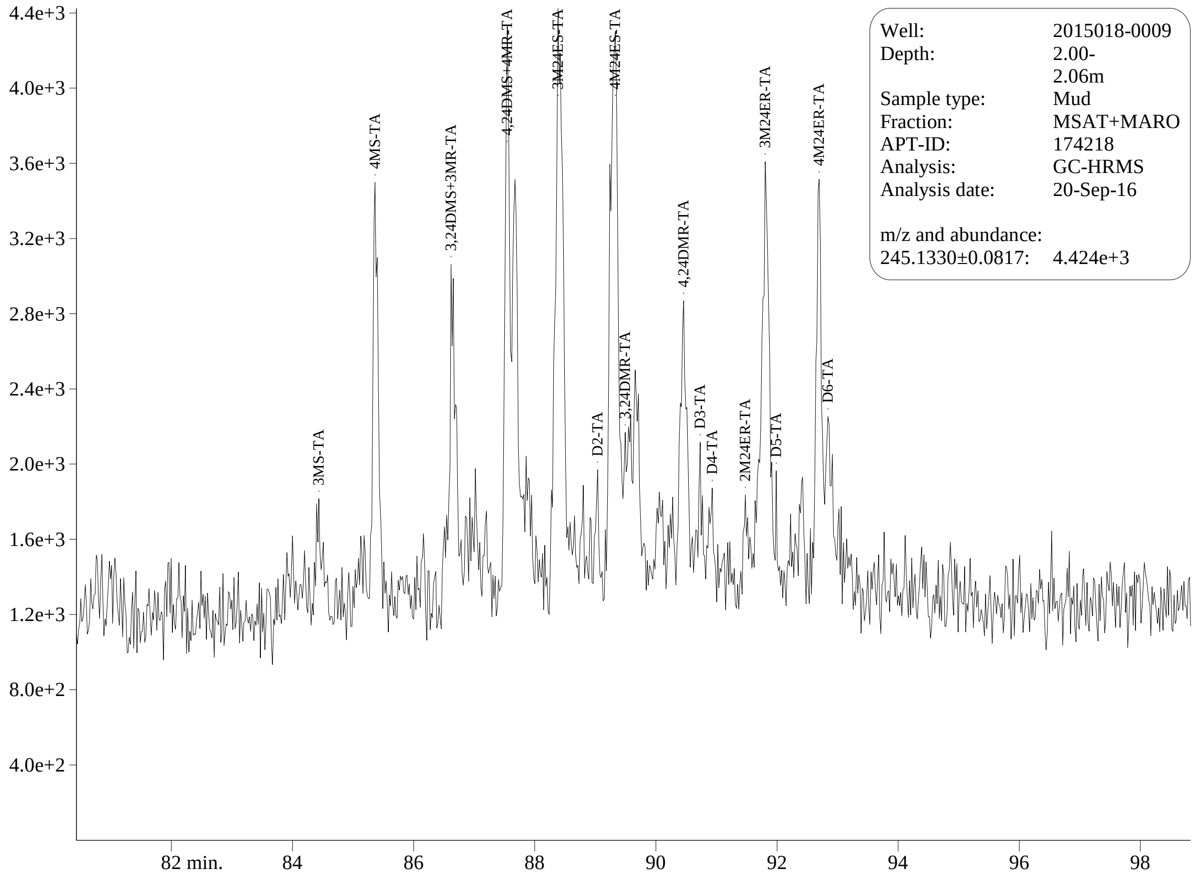

Well: 2015018-0009
Depth: 2.00-2.06m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174218
Analysis: GC-HRMS
Analysis date: 20-Sep-16
m/z and abundance:
178.08±0.0594: 9.887e+5
192.09±0.0640: 9.887e+5
206.11±0.0687: 9.887e+5
219.12±0.0730: 9.887e+5
P
3-MP
2-MP
9-MP
1-MP
2-EP+9-EP+3,6-DMP
1-EP
2,6- + 2,7- + 3,5-DMP
1,3- + 2,10- + 3,9- + 3,10-DMP
1,6- + 2,5- + 2,9-DMP
1,7-DMP
2,3-DMP
1,9- + 4,10-DMP
1,8-DMP
1,2-DMP
Retene
34 min.
38
42
46
50
54
58

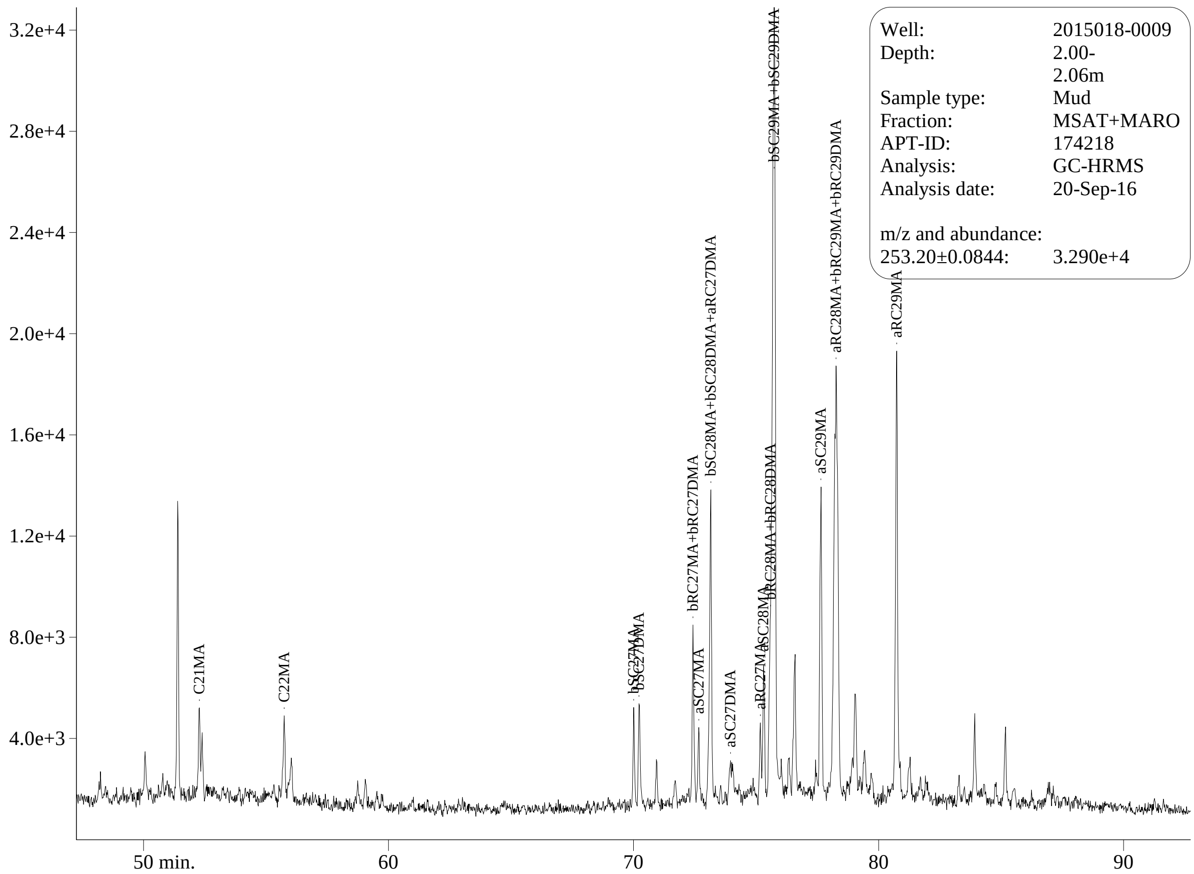


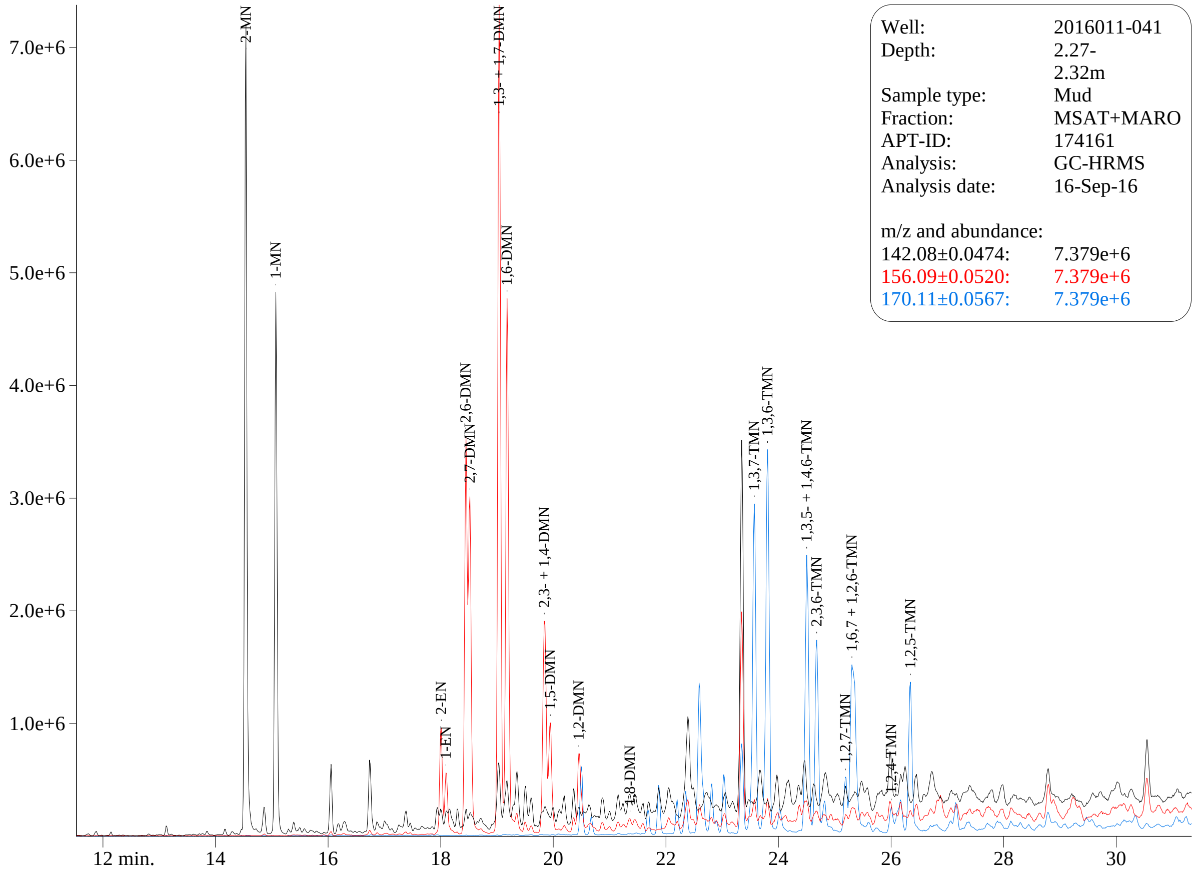
Well: 2015018-0009
Depth: 2.00-2.06m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174218
Analysis: GC-HRMS
Analysis date: 20-Sep-16
m/z and abundance:
184.03±0.0613: 5.131e+4
198.05±0.0660: 5.131e+4
212.07±0.0707: 5.131e+4
DBT
4-MDBT
(3+2)-MDBT
1-MDBT
5.0e+4
4.5e+4
4.0e+4
3.5e+4
3.0e+4
2.5e+4
2.0e+4
1.5e+4
1.0e+4
5.0e+3
32 min.
34
36
38
40
42
44
46
48
50



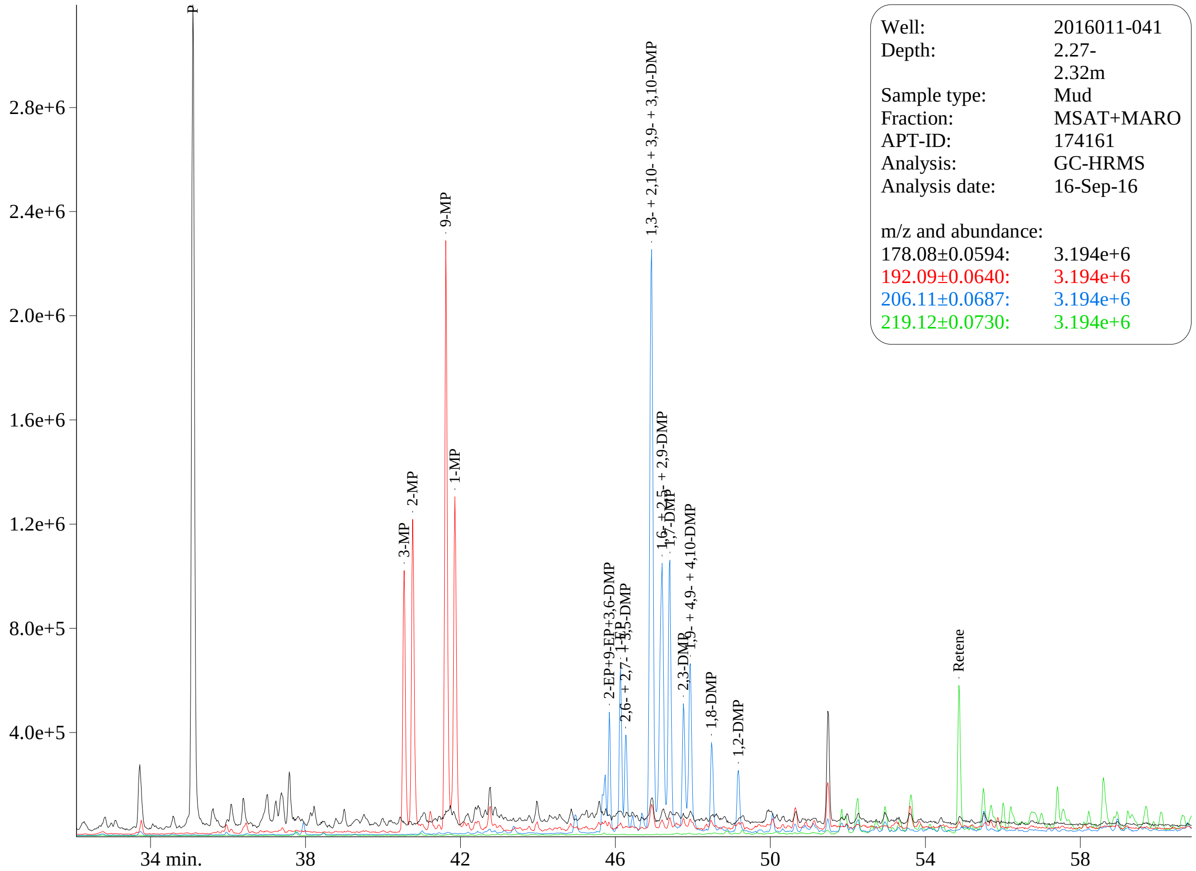
Well: 2015018-0009
Depth: 2.00-2.06m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174218
Analysis: GC-HRMS
Analysis date: 20-Sep-16
m/z and abundance:
231.12±0.0770: 2.396e+4
C20TA
C21TA
SC26TA
RC26TA+SC27TA
SC28TA
RC27TA
RC28TA
3.2e+4
2.8e+4
2.4e+4
2.0e+4
1.6e+4
1.2e+4
8.0e+3
4.0e+3
60 min.
70
80
90
100


Well: 2015018-0009
Depth: 2.00-2.06m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174218
Analysis: GC-HRMS
Analysis date: 20-Sep-16
m/z and abundance:
245.1330±0.0817: 4.424e+3
3MS-TA
4MS-TA
3,24DMS+3MR-TA
4,24DMS+4MR-TA
3M24ES-TA
4M24ES-TA
D2-TA
3,24DMR-TA
4,24DMR-TA
D3-TA
D4-TA
2M24ER-TA
3M24ER-TA
D5-TA
4M24ER-TA
D6-TA
82 min.
84
86
88
90
92
94
96
98

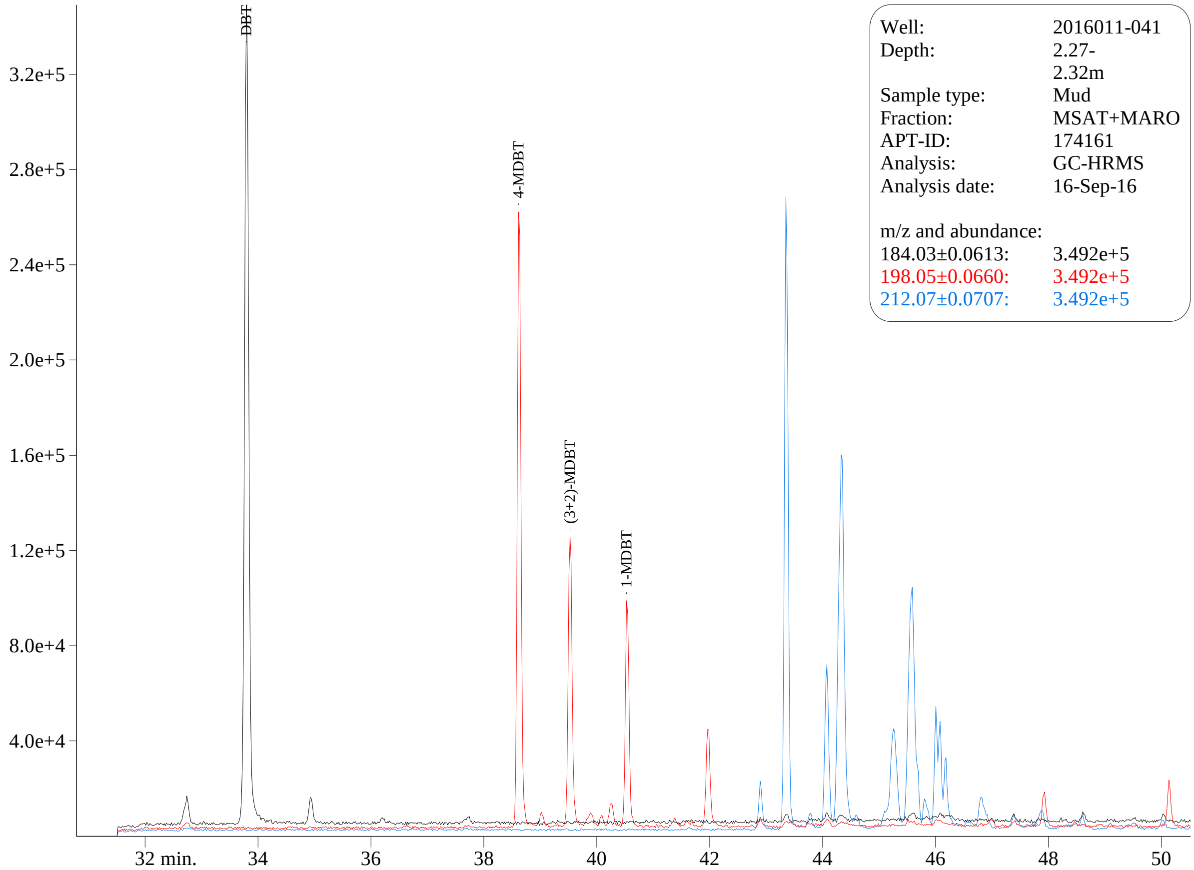

Well: 2015018-0009
Depth: 2.00-2.06m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174218
Analysis: GC-HRMS
Analysis date: 20-Sep-16
m/z and abundance:
253.20±0.0844: 3.290e+4
C21MA
C22MA
bSC27MA
bSC27DMA
bRC27MA+bRC27DMA
aSC27MA
bSC28MA+bSC28DMA+aRC27DMA
aSC27DMA
aRC27MA
aSC28MA
bRC28MA+bRC28DMA
bSC29MA+bSC29DMA
aSC29MA
aRC28MA+bRC29MA+bRC29DMA
aRC29MA
50 min.
60
70
80
90



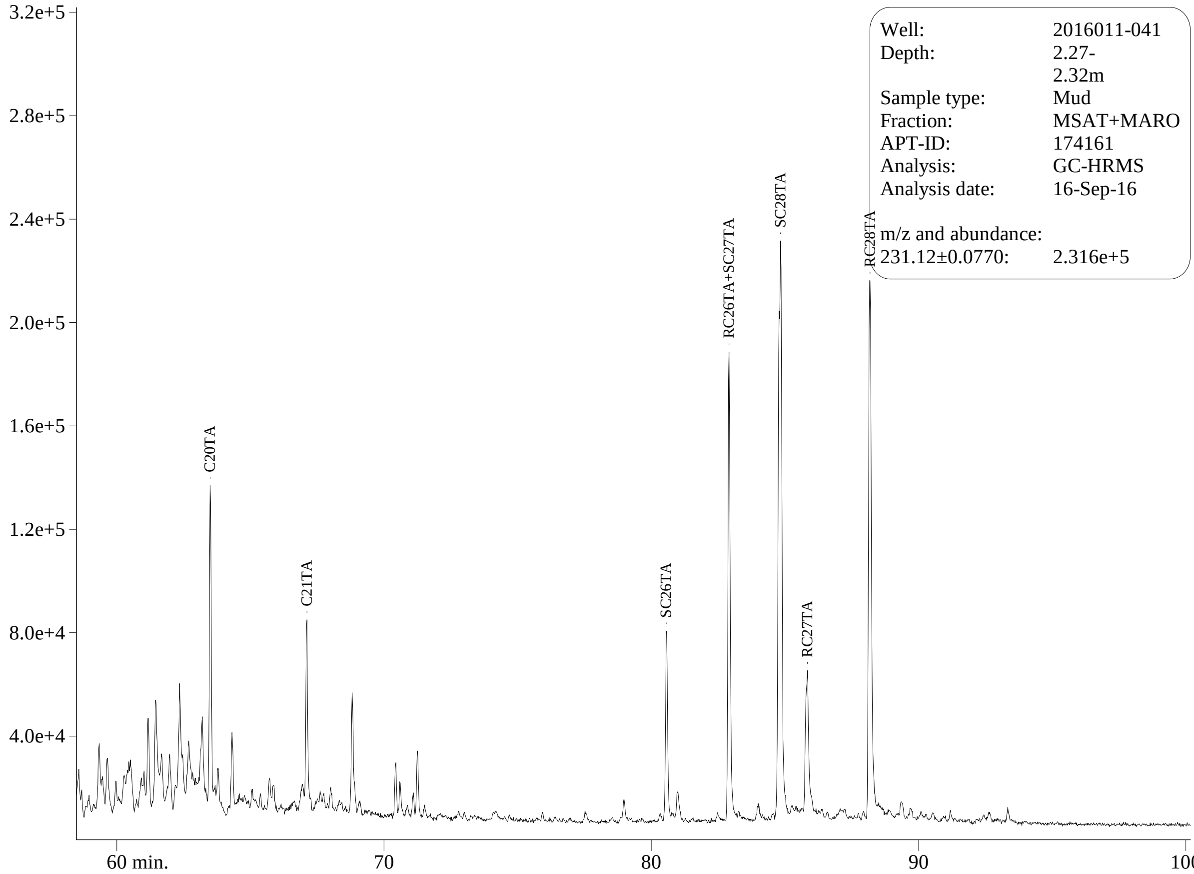
Well: 2016011-041
Depth: 2.27-2.32m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174161
Analysis: GC-HRMS
Analysis date: 16-Sep-16
m/z and abundance:
142.08±0.0474: 7.379e+6
156.09±0.0520: 7.379e+6
170.11±0.0567: 7.379e+6
2-MN
1-MN
2-EN
1-EN
2,6-DMN
2,7-DMN
1,3- + 1,7-DMN
1,6-DMN
2,3- + 1,4-DMN
1,5-DMN
1,2-DMN
1,8-DMN
1,3,7-TMN
1,3,6-TMN
1,3,5- + 1,4,6-TMN
2,3,6-TMN
1,6,7 + 1,2,6-TMN
1,2,7-TMN
1,2,4-TMN
1,2,5-TMN
12 min.
14
16
18
20
22
24
26
28
30
7.0e+6
6.0e+6
5.0e+6
4.0e+6
3.0e+6
2.0e+6
1.0e+6



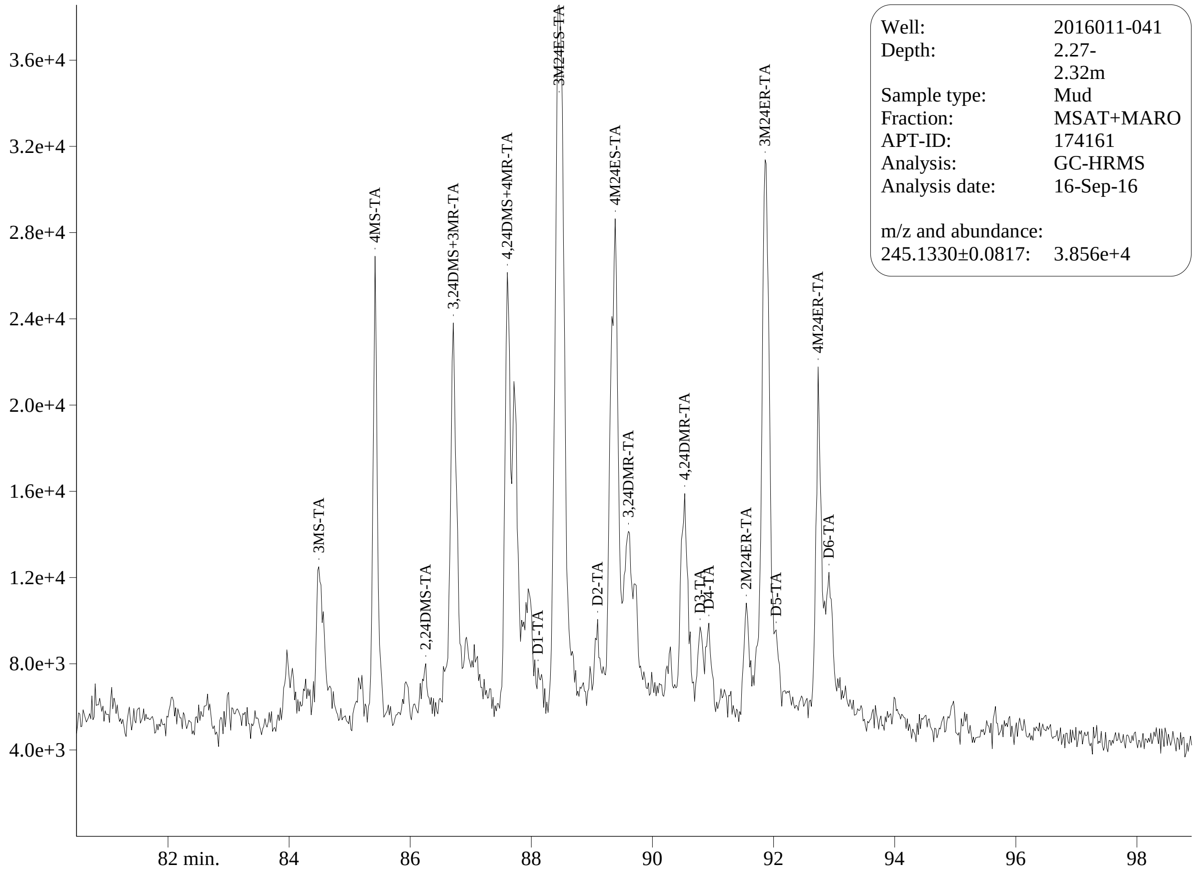
Well: 2016011-041
Depth: 2.27-2.32m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174161
Analysis: GC-HRMS
Analysis date: 16-Sep-16
m/z and abundance:
178.08±0.0594: 3.194e+6
192.09±0.0640: 3.194e+6
206.11±0.0687: 3.194e+6
219.12±0.0730: 3.194e+6
P
3-MP
2-MP
9-MP
1-MP
2-EP+9-EP+3,6-DMP
2,6- + 2,7- + 3,5-DMP
1-EP
1,3- + 2,10- + 3,9- + 3,10-DMP
1,6- + 2,5- + 2,9-DMP
1,7-DMP
2,3-DMP
1,9- + 4,9- + 4,10-DMP
1,8-DMP
1,2-DMP
Retene
34 min.
38
42
46
50
54
58
2.8e+6
2.4e+6
2.0e+6
1.6e+6
1.2e+6
8.0e+5
4.0e+5

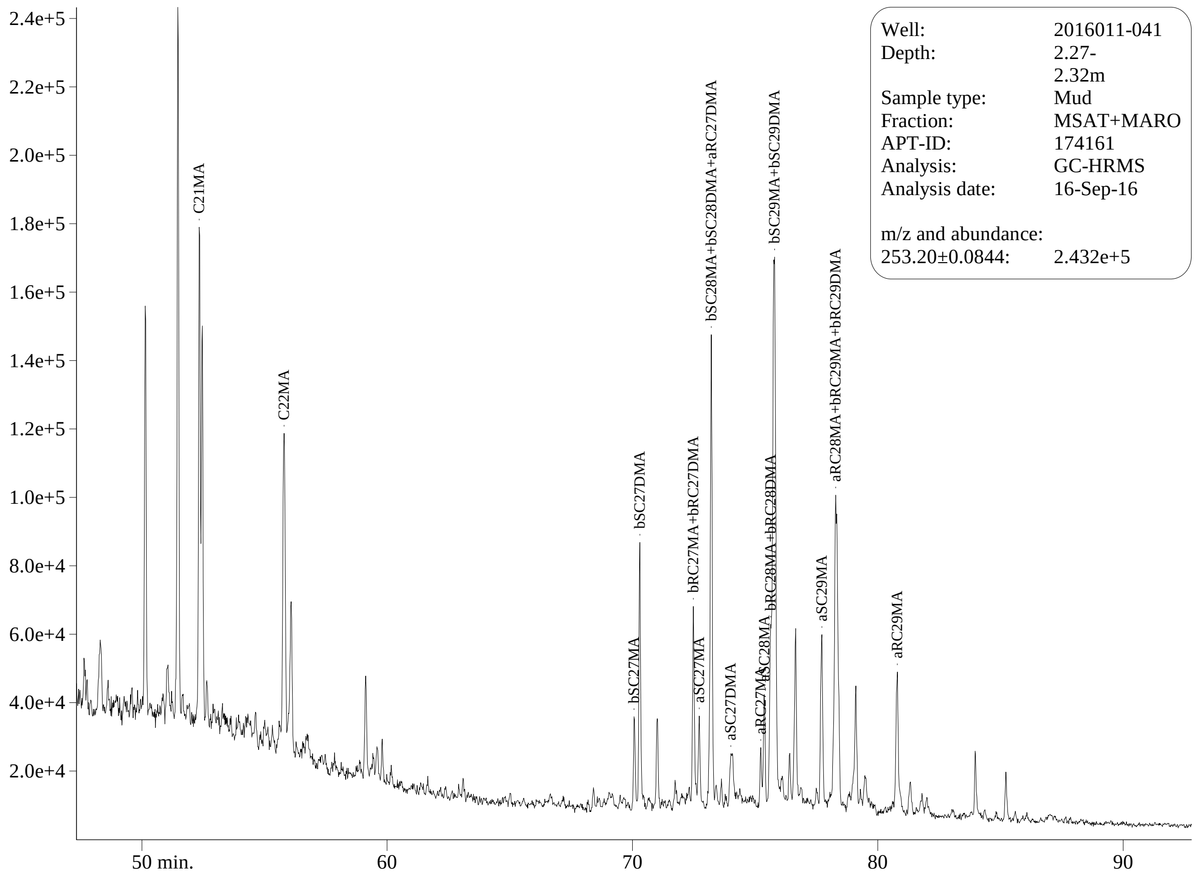


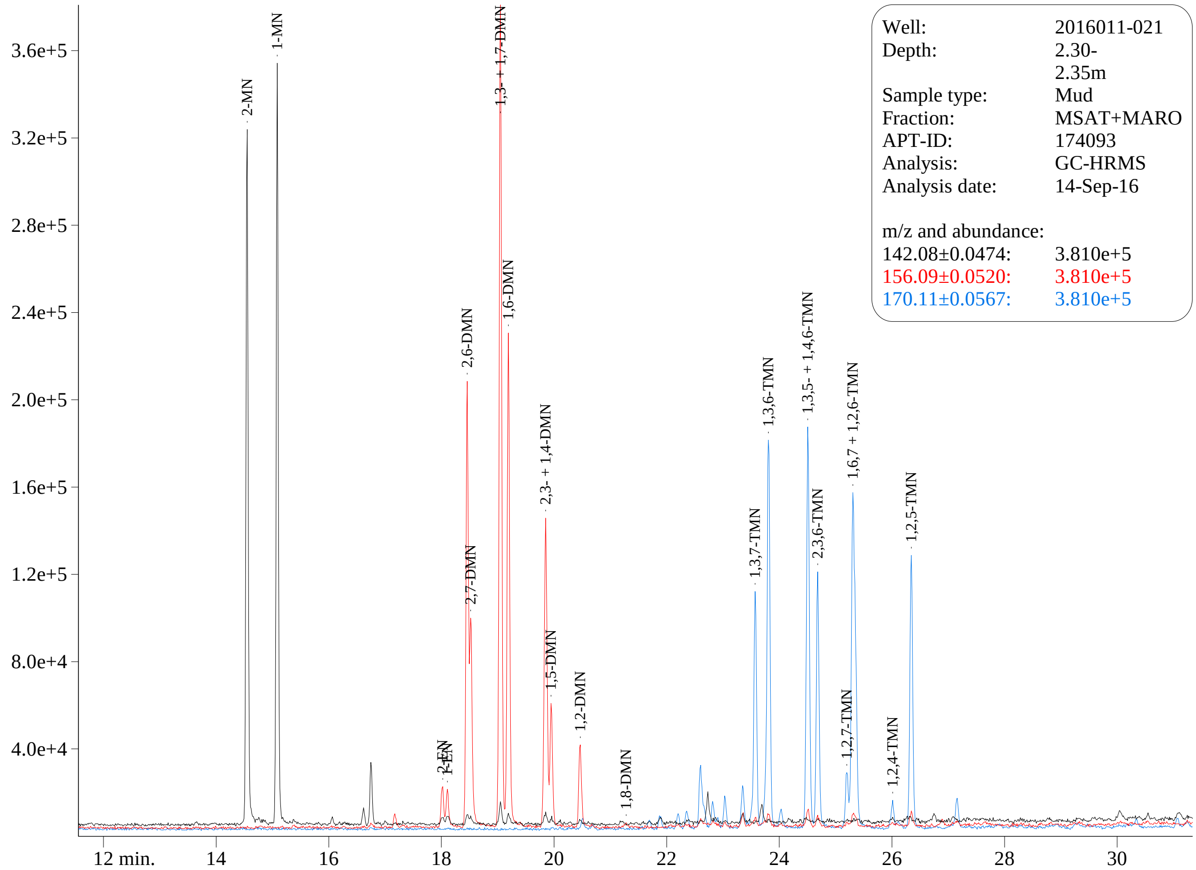
DBT
4-MDBT
(3+2)-MDBT
1-MDBT
3.2e+5
2.8e+5
2.4e+5
2.0e+5
1.6e+5
1.2e+5
8.0e+4
4.0e+4
32 min.
34
36
38
40
42
44
46
48
50
Well: 2016011-041
Depth: 2.27-2.32m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174161
Analysis: GC-HRMS
Analysis date: 16-Sep-16
m/z and abundance:
184.03±0.0613: 3.492e+5
198.05±0.0660: 3.492e+5
212.07±0.0707: 3.492e+5



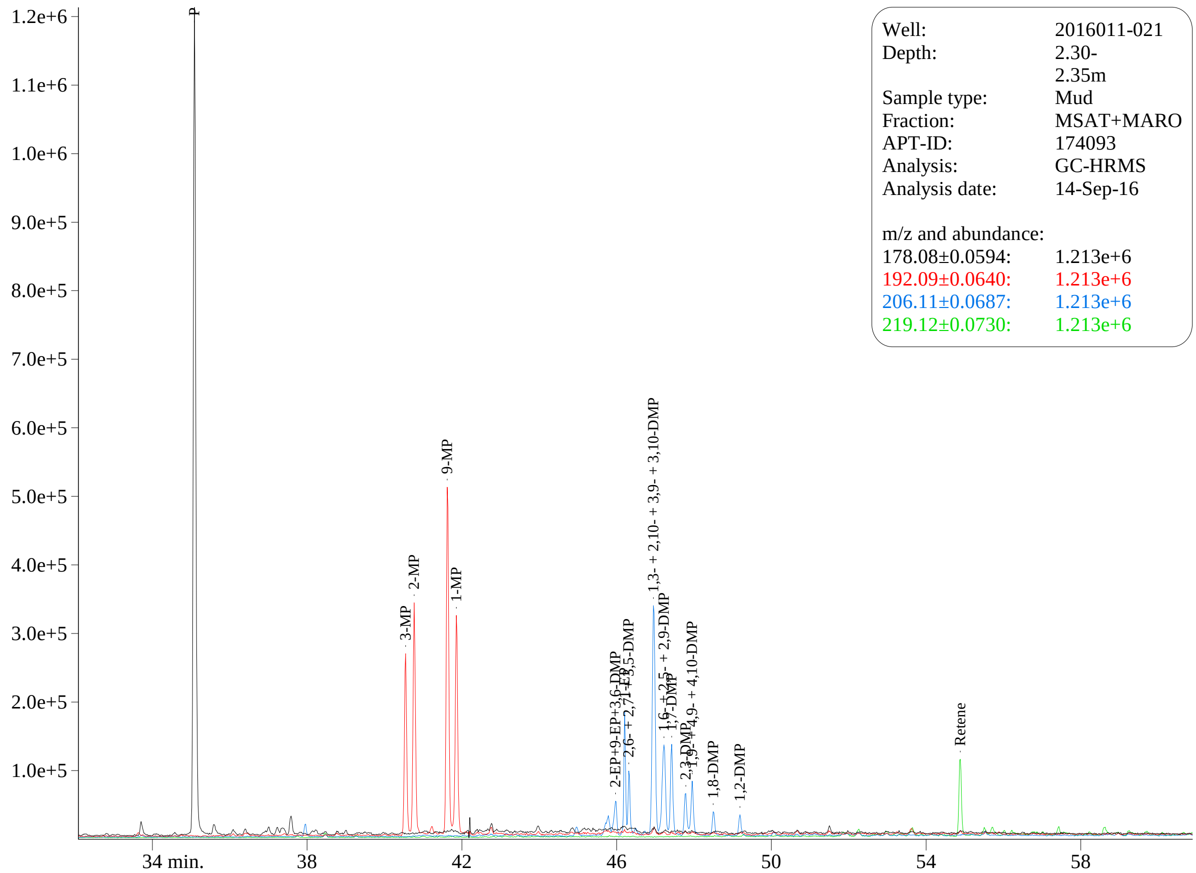
C20TA
C21TA
SC26TA
RC26TA+SC27TA
SC28TA
RC27TA
RC28TA
3.2e+5
2.8e+5
2.4e+5
2.0e+5
1.6e+5
1.2e+5
8.0e+4
4.0e+4
60 min.
70
80
90
100
Well: 2016011-041
Depth: 2.27-2.32m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174161
Analysis: GC-HRMS
Analysis date: 16-Sep-16
m/z and abundance:
231.12±0.0770: 2.316e+5


Well: 2016011-041
Depth: 2.27-2.32m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174161
Analysis: GC-HRMS
Analysis date: 16-Sep-16
m/z and abundance:
245.1330±0.0817: 3.856e+4
3MS-TA
4MS-TA
2,24DMS-TA
3,24DMS+3MR-TA
4,24DMS+4MR-TA
D1-TA
3M24ES-TA
D2-TA
4M24ES-TA
3,24DMR-TA
4,24DMR-TA
D3-TA
D4-TA
2M24ER-TA
3M24ER-TA
D5-TA
4M24ER-TA
D6-TA
82 min.
84
86
88
90
92
94
96
98

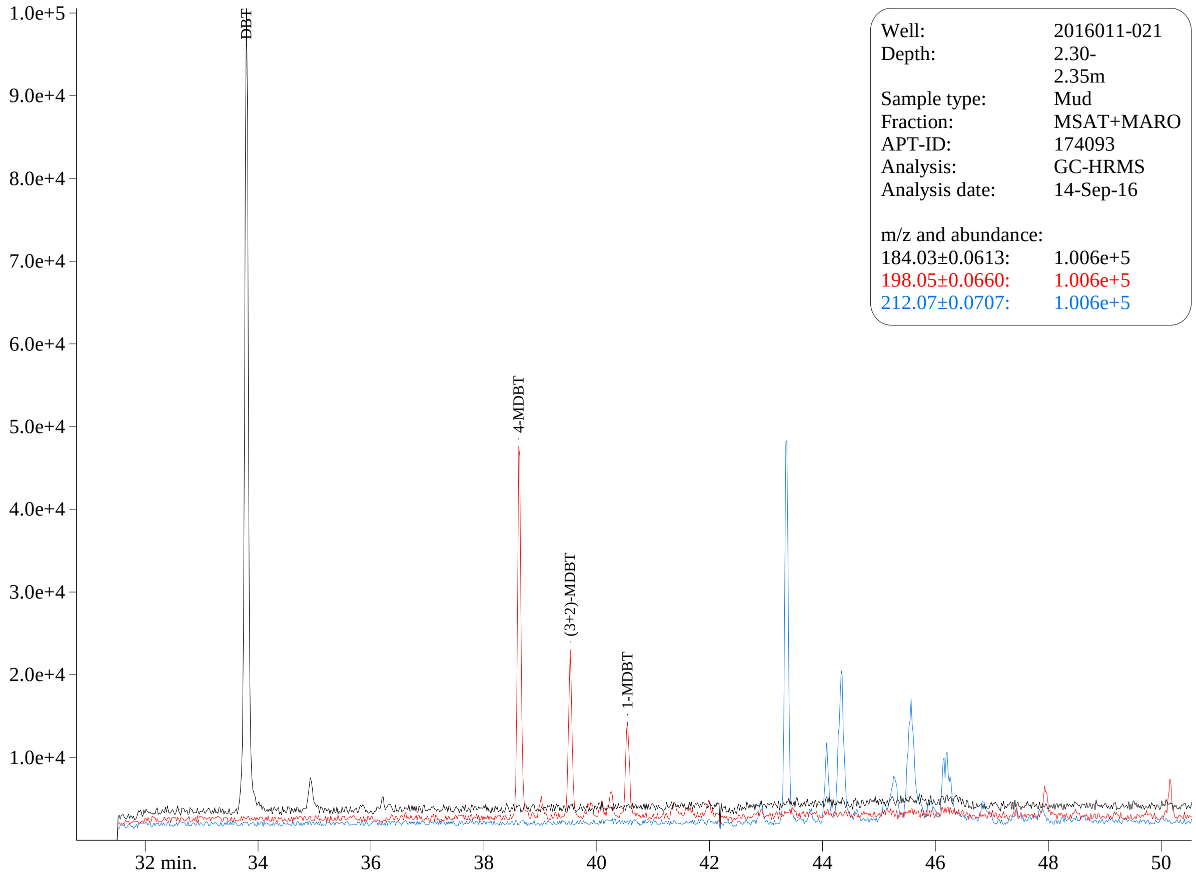

Well: 2016011-041
Depth: 2.27-2.32m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174161
Analysis: GC-HRMS
Analysis date: 16-Sep-16
m/z and abundance:
253.20±0.0844: 2.432e+5
C21MA
C22MA
bSC27MA
bSC27DMA
aSC27MA
bRC27MA+bRC27DMA
bSC28MA+bSC28DMA+aRC27DMA
aSC27DMA
aRC27MA
aSC28MA
bRC28MA+bRC28DMA
bSC29MA+bSC29DMA
aSC29MA
aRC28MA+bRC29MA+bRC29DMA
aRC29MA
50 min.
60
70
80
90



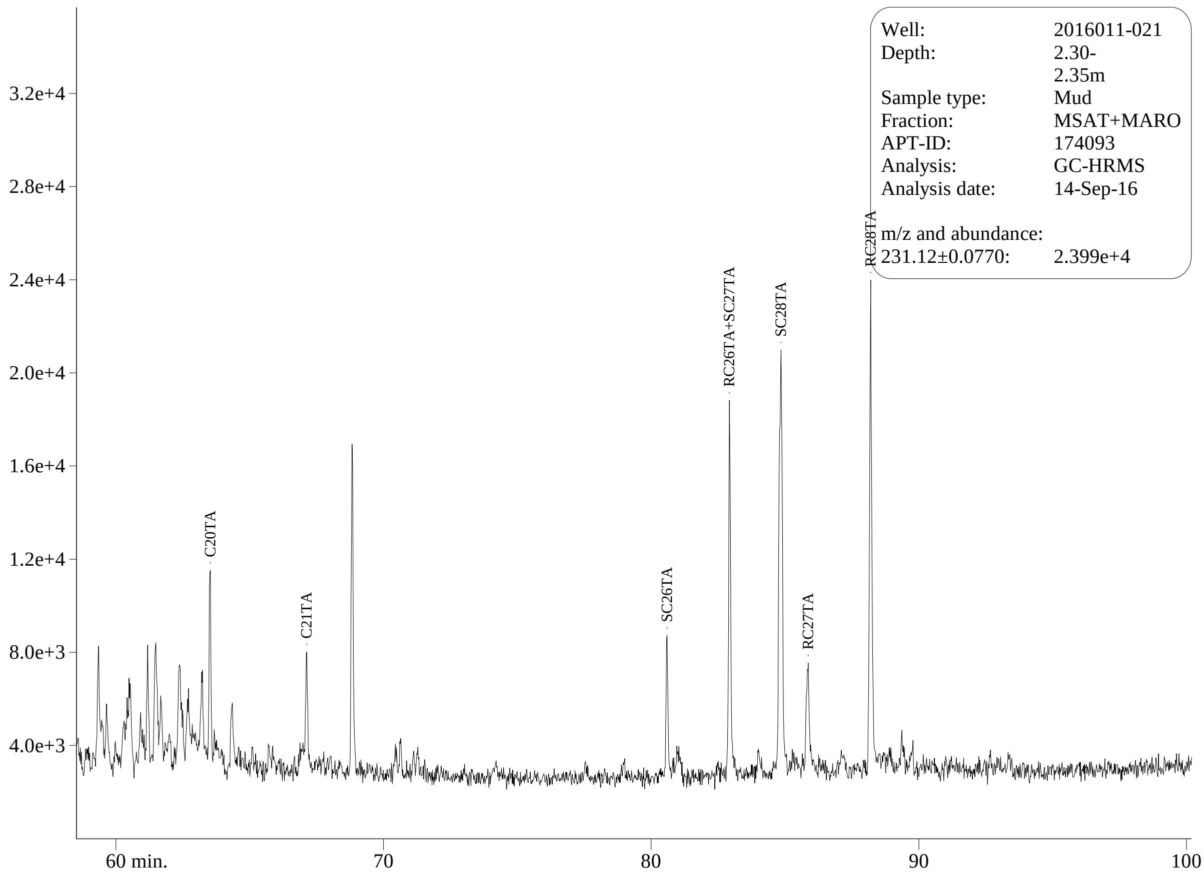
Well: 2016011-021
Depth: 2.30-2.35m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174093
Analysis: GC-HRMS
Analysis date: 14-Sep-16
m/z and abundance:
142.08±0.0474: 3.810e+5
156.09±0.0520: 3.810e+5
170.11±0.0567: 3.810e+5
2-MN
1-MN
2-EN
1-EN
2,6-DMN
2,7-DMN
1,3- + 1,7-DMN
1,6-DMN
2,3- + 1,4-DMN
1,5-DMN
1,2-DMN
1,8-DMN
1,3,7-TMN
1,3,6-TMN
1,3,5- + 1,4,6-TMN
2,3,6-TMN
1,2,7-TMN
1,6,7 + 1,2,6-TMN
1,2,4-TMN
1,2,5-TMN
3.6e+5
3.2e+5
2.8e+5
2.4e+5
2.0e+5
1.6e+5
1.2e+5
8.0e+4
4.0e+4
12 min.
14
16
18
20
22
24
26
28
30



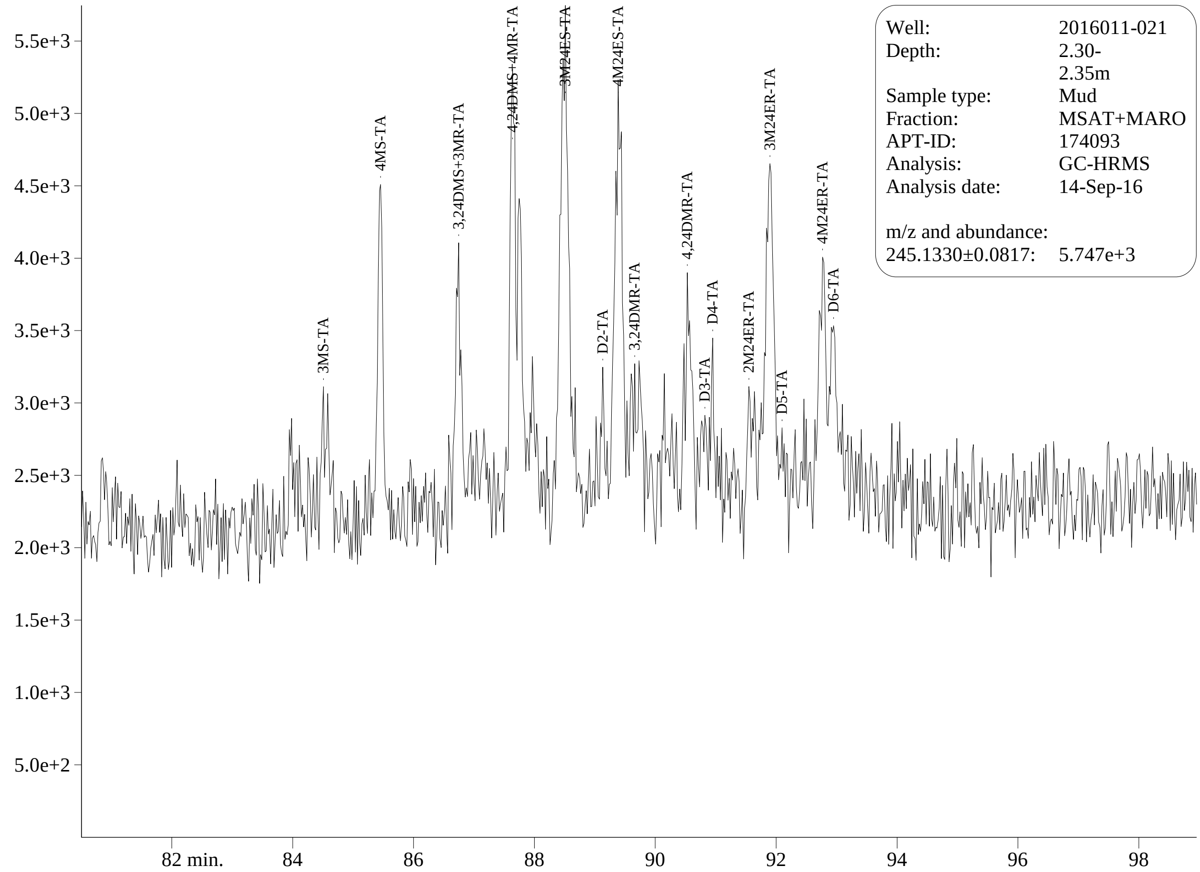
Well: 2016011-021
Depth: 2.30-2.35m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174093
Analysis: GC-HRMS
Analysis date: 14-Sep-16
m/z and abundance:
178.08±0.0594: 1.213e+6
192.09±0.0640: 1.213e+6
206.11±0.0687: 1.213e+6
219.12±0.0730: 1.213e+6
P
3-MP
2-MP
9-MP
1-MP
2-EP+9-EP+3,6-DMP
2,6- + 2,7-DMP
3,5-DMP
1,3- + 2,10- + 3,9- + 3,10-DMP
1,6- + 2,5- + 2,9-DMP
1,7-DMP
2,3-DMP
1,9- + 4,9- + 4,10-DMP
1,8-DMP
1,2-DMP
Retene
1.2e+6
1.1e+6
1.0e+6
9.0e+5
8.0e+5
7.0e+5
6.0e+5
5.0e+5
4.0e+5
3.0e+5
2.0e+5
1.0e+5
34 min.
38
42
46
50
54
58

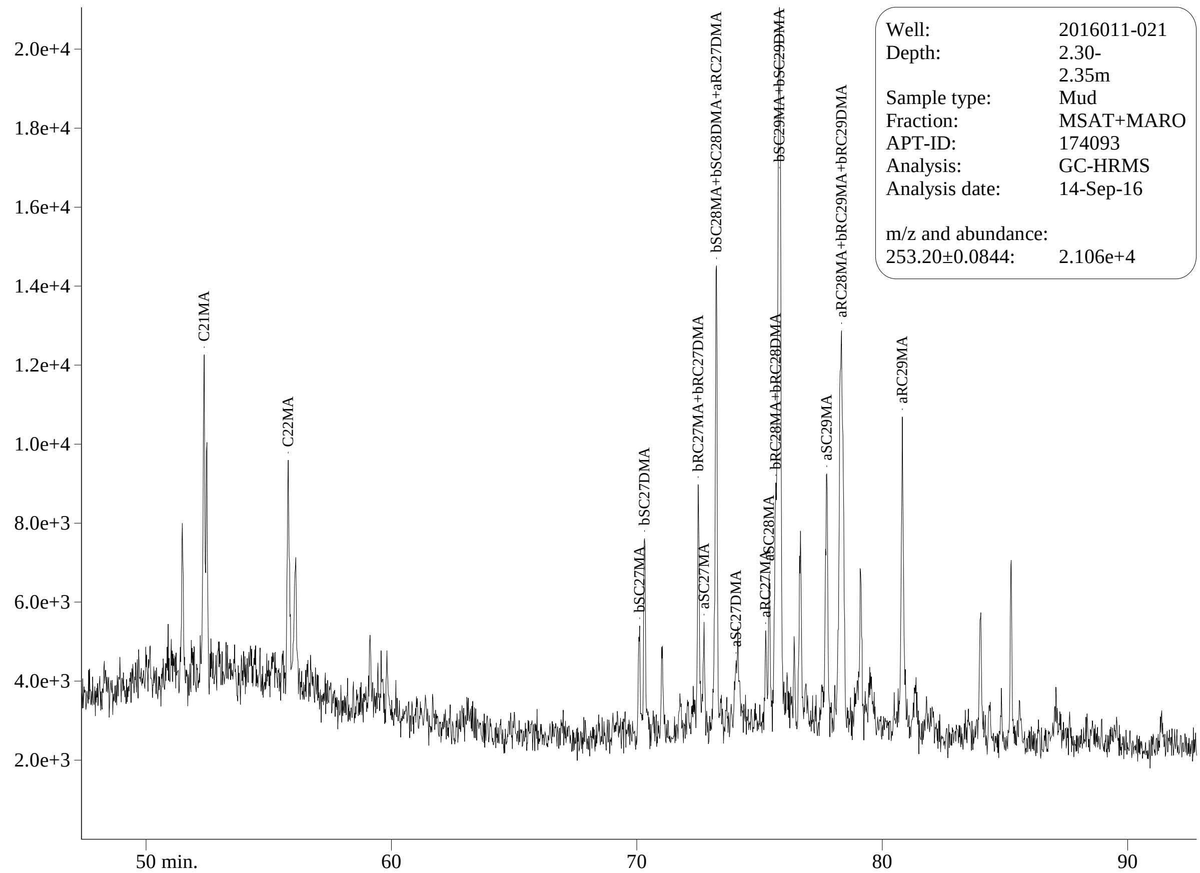


1.0e+5
9.0e+4
8.0e+4
7.0e+4
6.0e+4
5.0e+4
4.0e+4
3.0e+4
2.0e+4
1.0e+4
DBT
4-MDBT
(3+2)-MDBT
1-MDBT
32 min.
34
36
38
40
42
44
46
48
50
Well: 2016011-021
Depth: 2.30-2.35m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174093
Analysis: GC-HRMS
Analysis date: 14-Sep-16
m/z and abundance:
184.03±0.0613: 1.006e+5
198.05±0.0660: 1.006e+5
212.07±0.0707: 1.006e+5

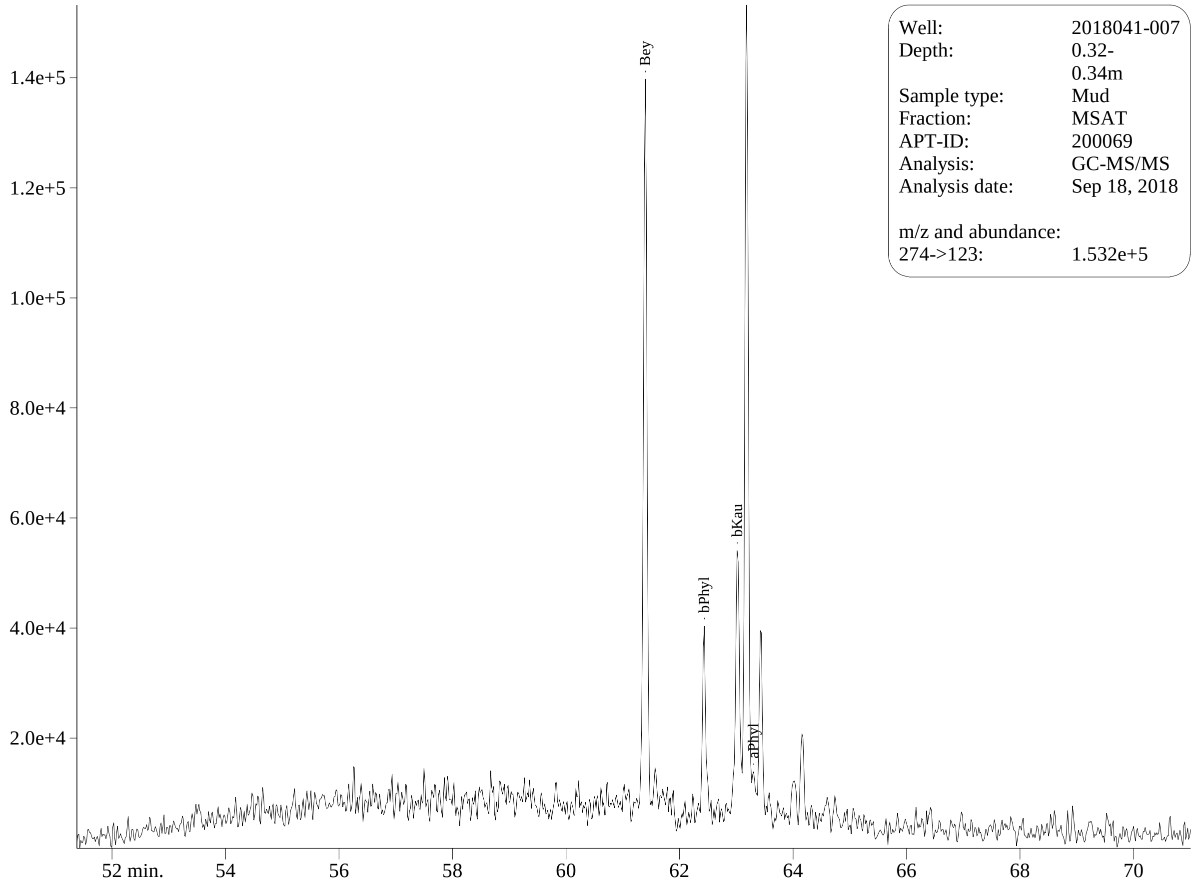


3.2e+4
2.8e+4
2.4e+4
2.0e+4
1.6e+4
1.2e+4
8.0e+3
4.0e+3
C20TA
C21TA
SC26TA
RC26TA+SC27TA
SC28TA
RC27TA
RC28TA
60 min.
70
80
90
100
Well: 2016011-021
Depth: 2.30-2.35m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174093
Analysis: GC-HRMS
Analysis date: 14-Sep-16
m/z and abundance:
231.12±0.0770: 2.399e+4

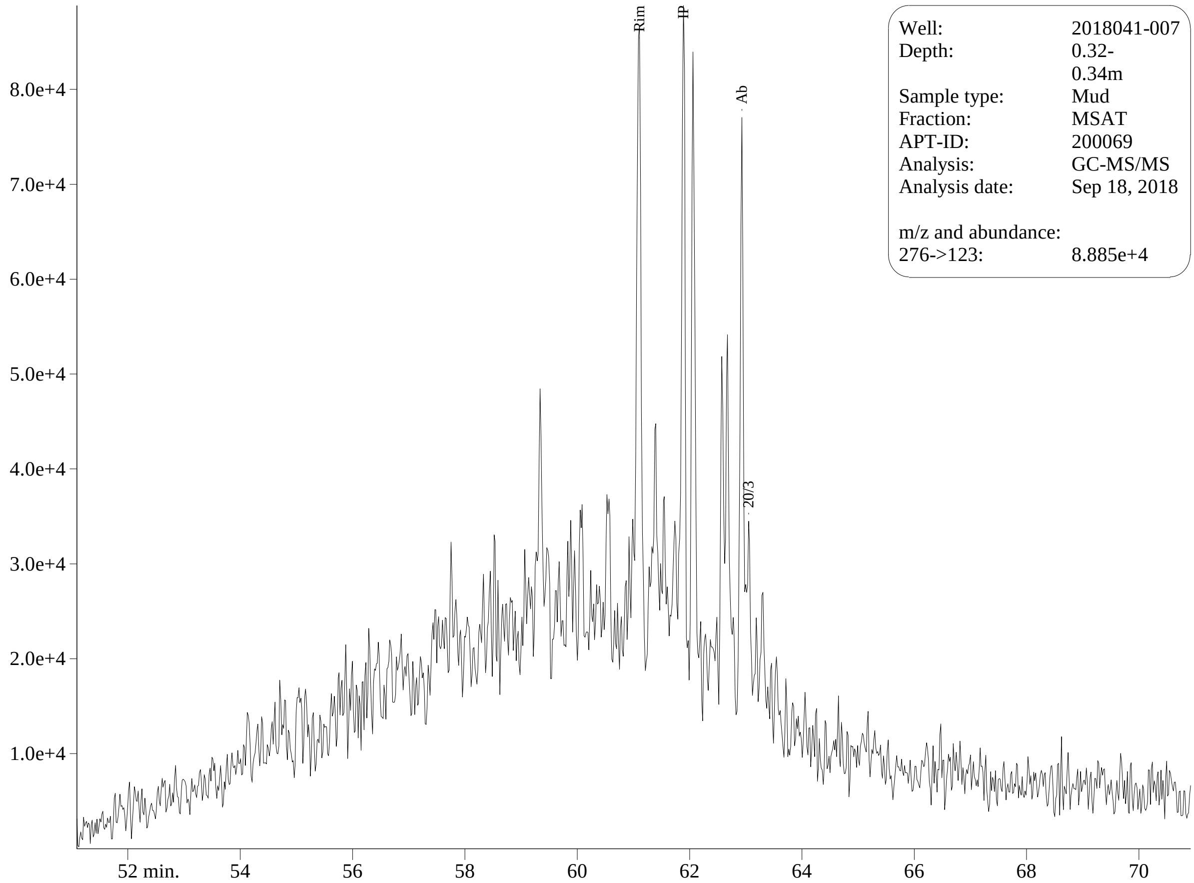

Well: 2016011-021
Depth: 2.30-2.35m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174093
Analysis: GC-HRMS
Analysis date: 14-Sep-16
m/z and abundance:
245.1330±0.0817: 5.747e+3
3MS-TA
4MS-TA
3,24DMS+3MR-TA
4,24DMS+4MR-TA
3M24ES-TA
4M24ES-TA
D2-TA
3,24DMR-TA
4,24DMR-TA
D3-TA
D4-TA
2M24ER-TA
3M24ER-TA
D5-TA
4M24ER-TA
D6-TA
5.5e+3
5.0e+3
4.5e+3
4.0e+3
3.5e+3
3.0e+3
2.5e+3
2.0e+3
1.5e+3
1.0e+3
5.0e+2
82 min.
84
86
88
90
92
94
96
98


Well: 2016011-021
Depth: 2.30-2.35m
Sample type: Mud
Fraction: MSAT+MARO
APT-ID: 174093
Analysis: GC-HRMS
Analysis date: 14-Sep-16
m/z and abundance:
253.20±0.0844: 2.106e+4
C21MA
C22MA
bSC27MA
bSC27DMA
bRC27MA+bRC27DMA
aSC27MA
bSC28MA+bSC28DMA+aRC27DMA
aSC27DMA
aRC27MA
aSC28MA
bRC28MA+bRC28DMA
bSC29MA+bSC29DMA
aSC29MA
aRC28MA+bRC29MA+bRC29DMA
aRC29MA
2.0e+4
1.8e+4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
50 min.
60
70
80
90

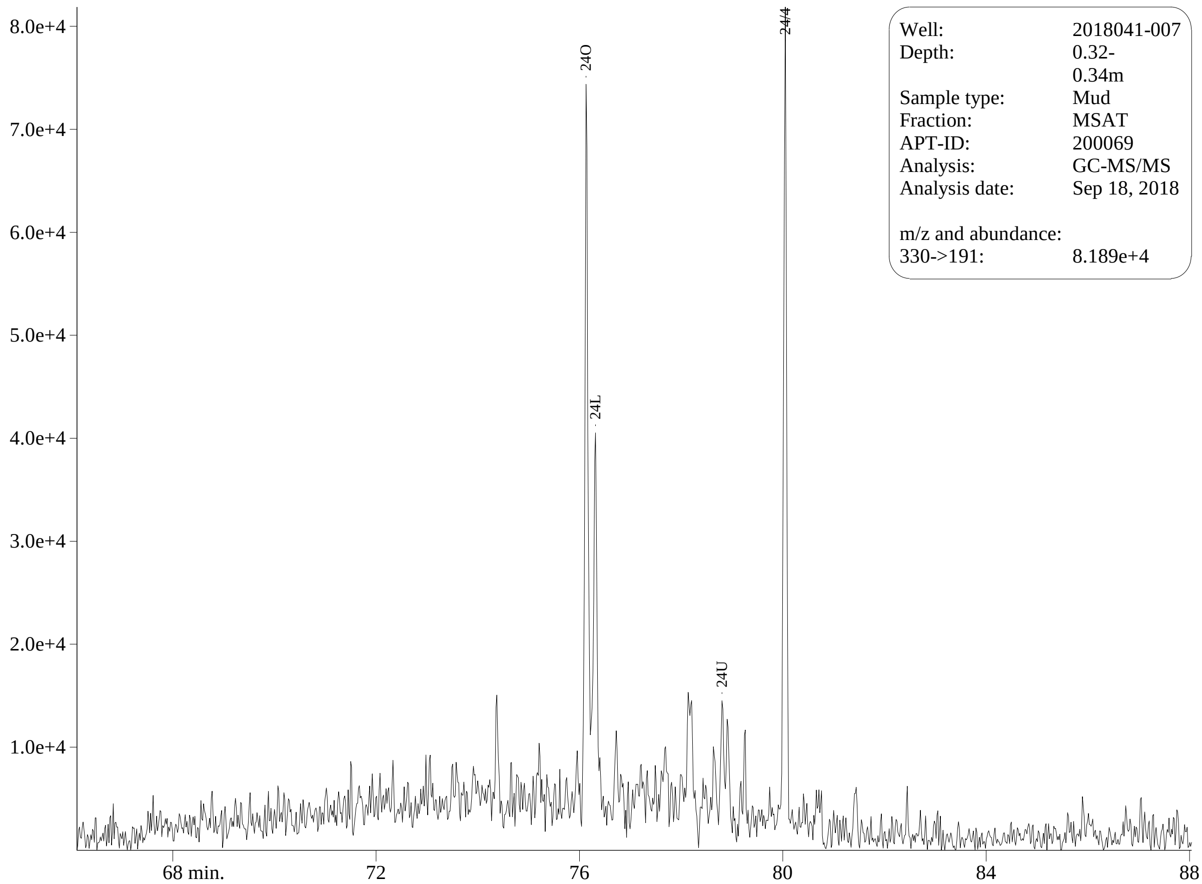
GC-MS/MS Chromatograms of Saturated Hydrocarbons

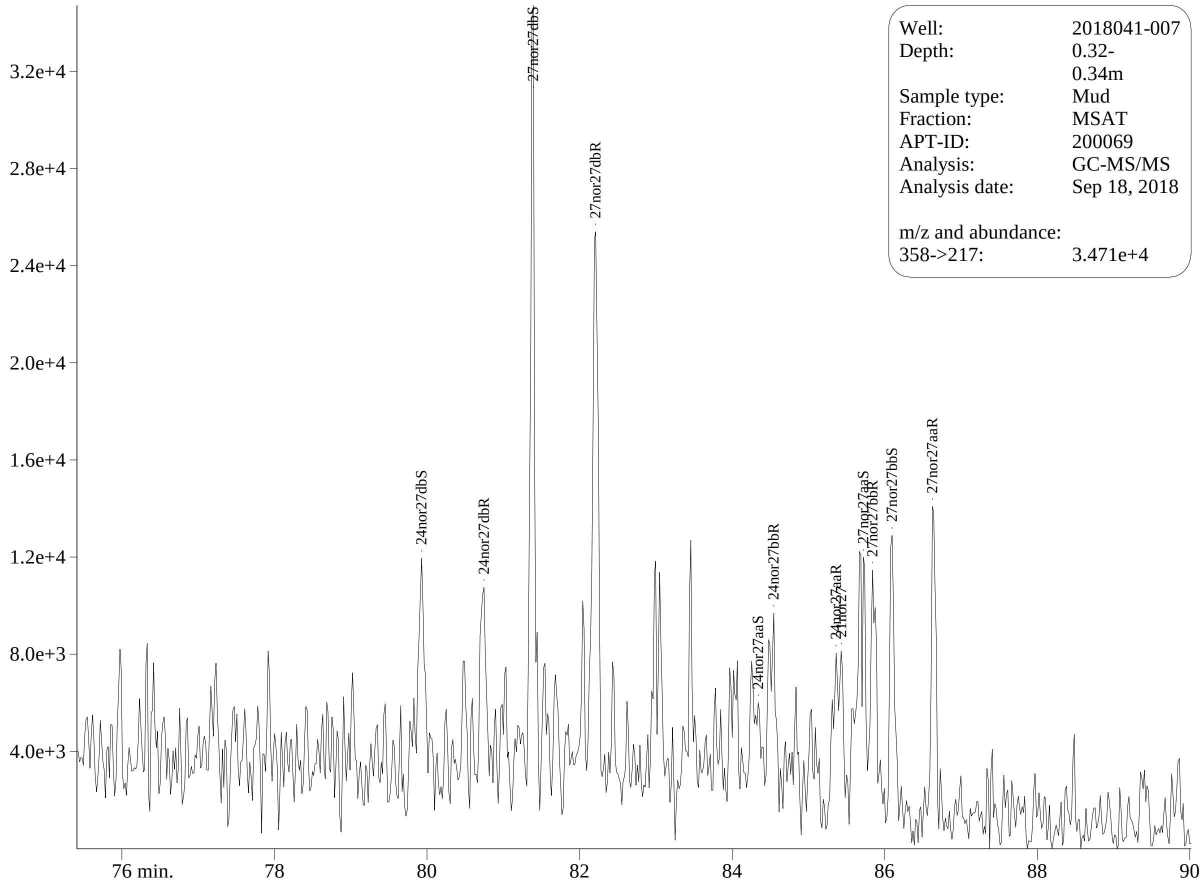


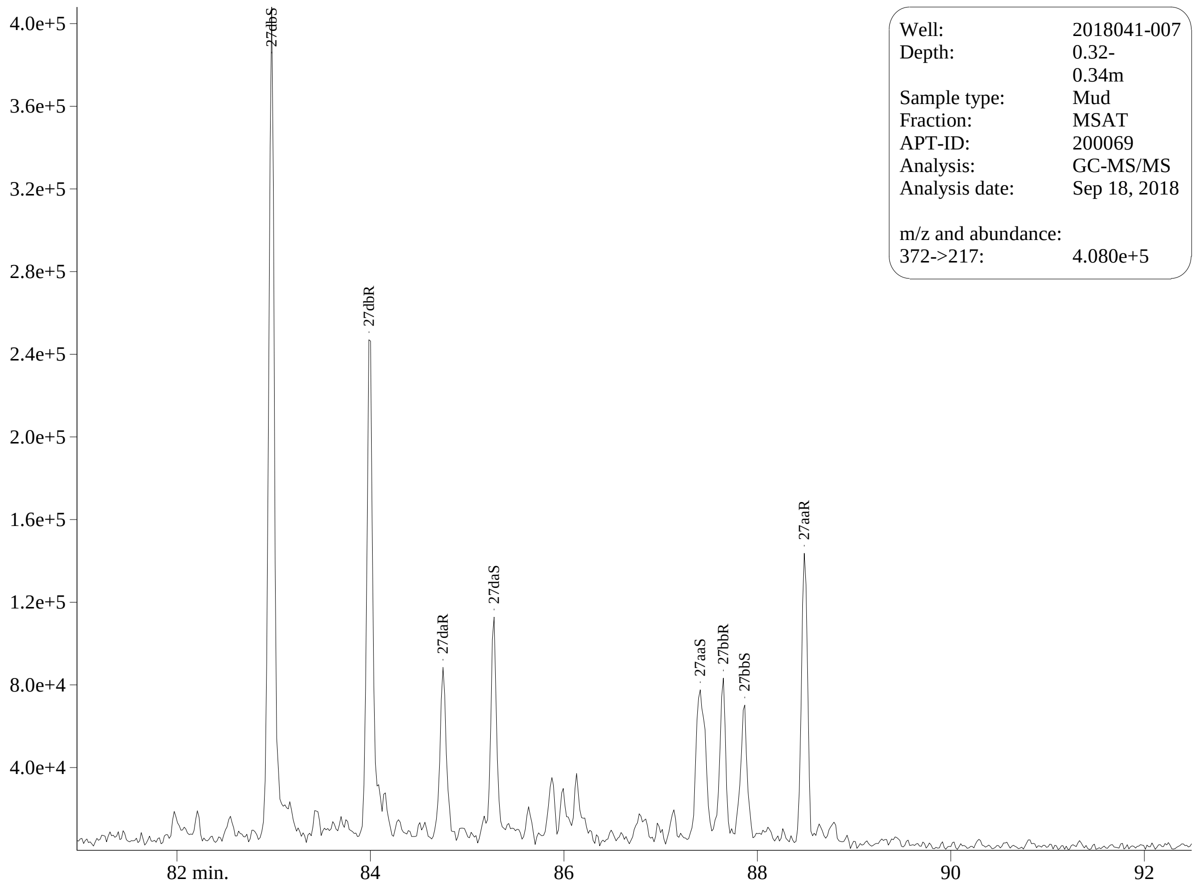
Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
274->123: 1.532e+5
Bey
bPhyl
bKau
aPhyl
1.4e+5
1.2e+5
1.0e+5
8.0e+4
6.0e+4
4.0e+4
2.0e+4
52 min.
54
56
58
60
62
64
66
68
70

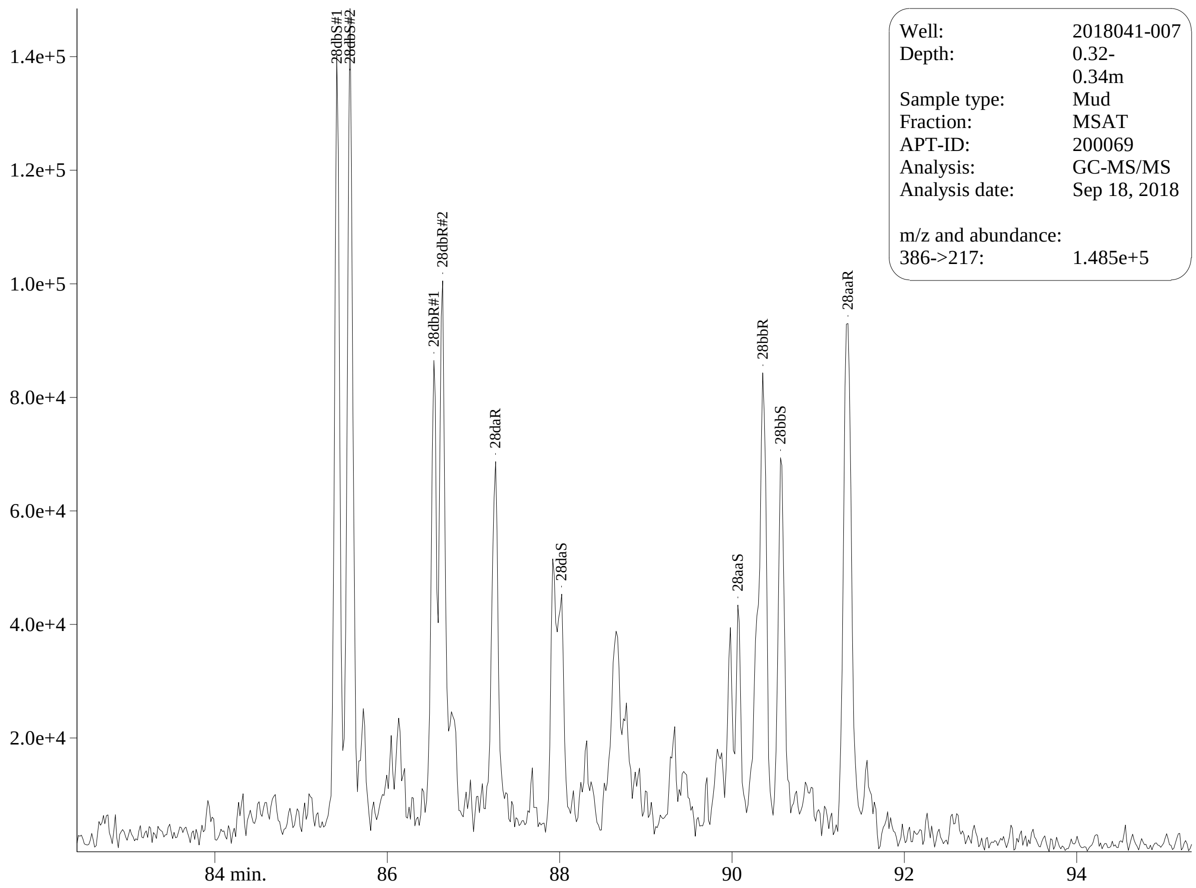


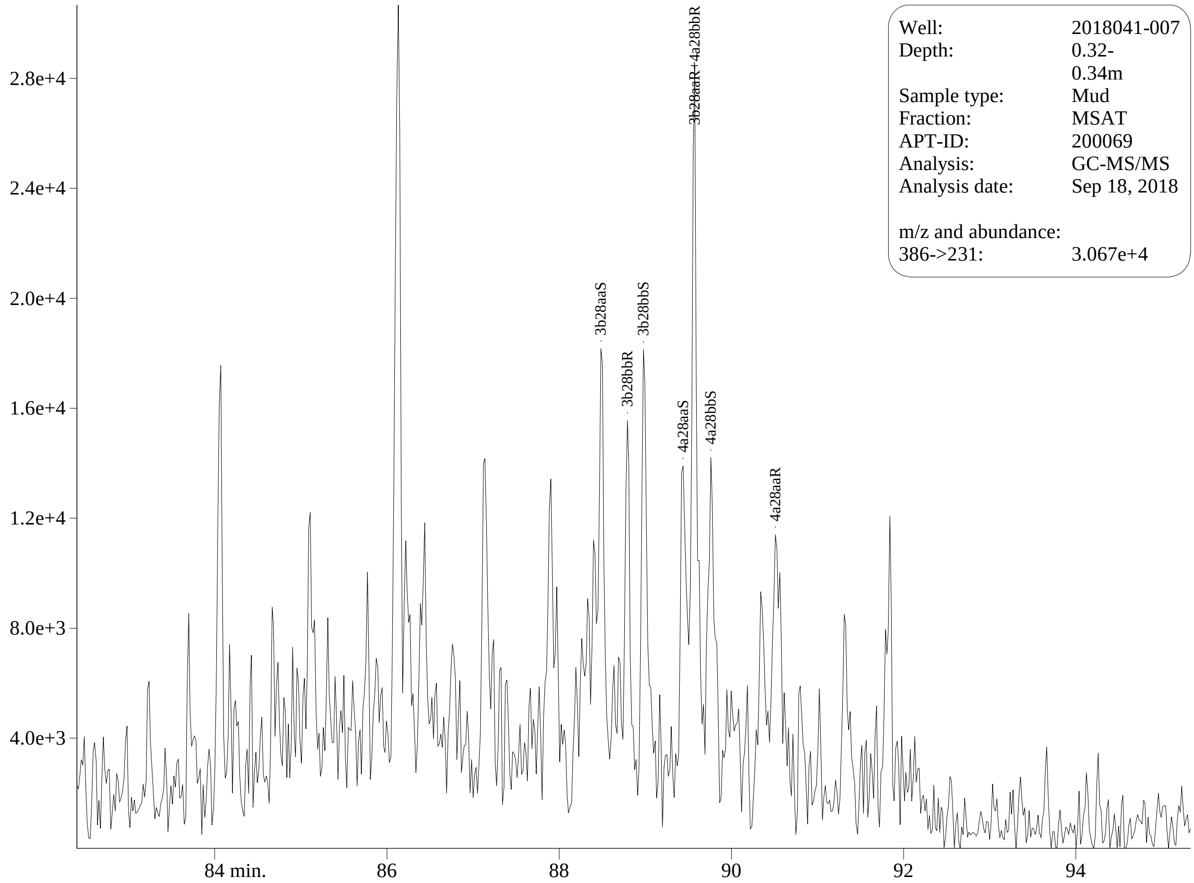
Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
276->123: 8.885e+4
Rim
IP
Ab
20/3
8.0e+4
7.0e+4
6.0e+4
5.0e+4
4.0e+4
3.0e+4
2.0e+4
1.0e+4
52 min.
54
56
58
60
62
64
66
68
70


8.0e+4
7.0e+4
6.0e+4
5.0e+4
4.0e+4
3.0e+4
2.0e+4
1.0e+4
68 min.
72
76
80
84
88
24O
24L
24U
24/4
Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
330->191: 8.189e+4

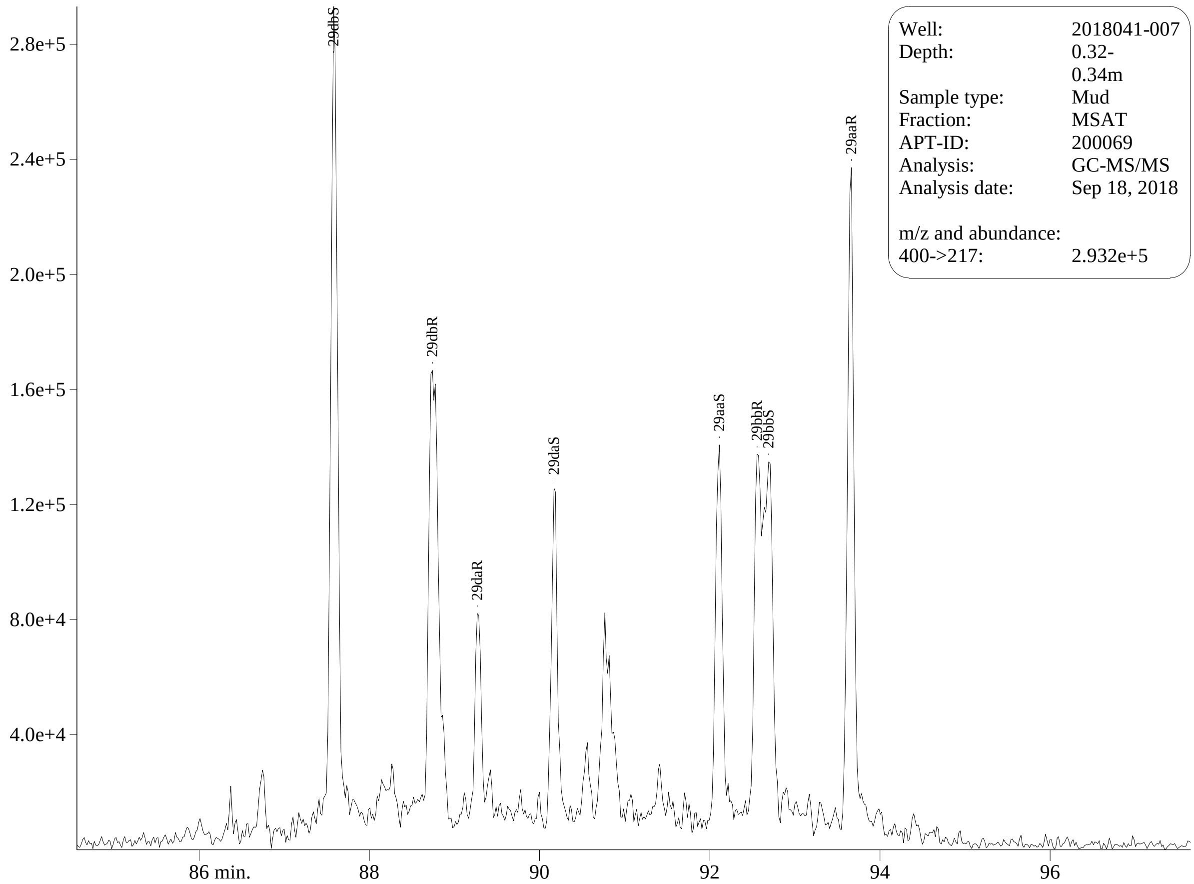

3.2e+4
2.8e+4
2.4e+4
2.0e+4
1.6e+4
1.2e+4
8.0e+3
4.0e+3
76 min.
78
80
82
84
86
88
90
24nor27dbS
24nor27dbR
27nor27dbS
27nor27dbR
24nor27aaS
24nor27bbR
24nor27aaR
21nor27
27nor27aaS
27nor27bbR
27nor27bbS
27nor27aaR
Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
358->217: 3.471e+4


Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
372->217: 4.080e+5
27dbS
27dbR
27daR
27daS
27aaS
27bbR
27bbS
27aaR
4.0e+5
3.6e+5
3.2e+5
2.8e+5
2.4e+5
2.0e+5
1.6e+5
1.2e+5
8.0e+4
4.0e+4
82 min.
84
86
88
90
92

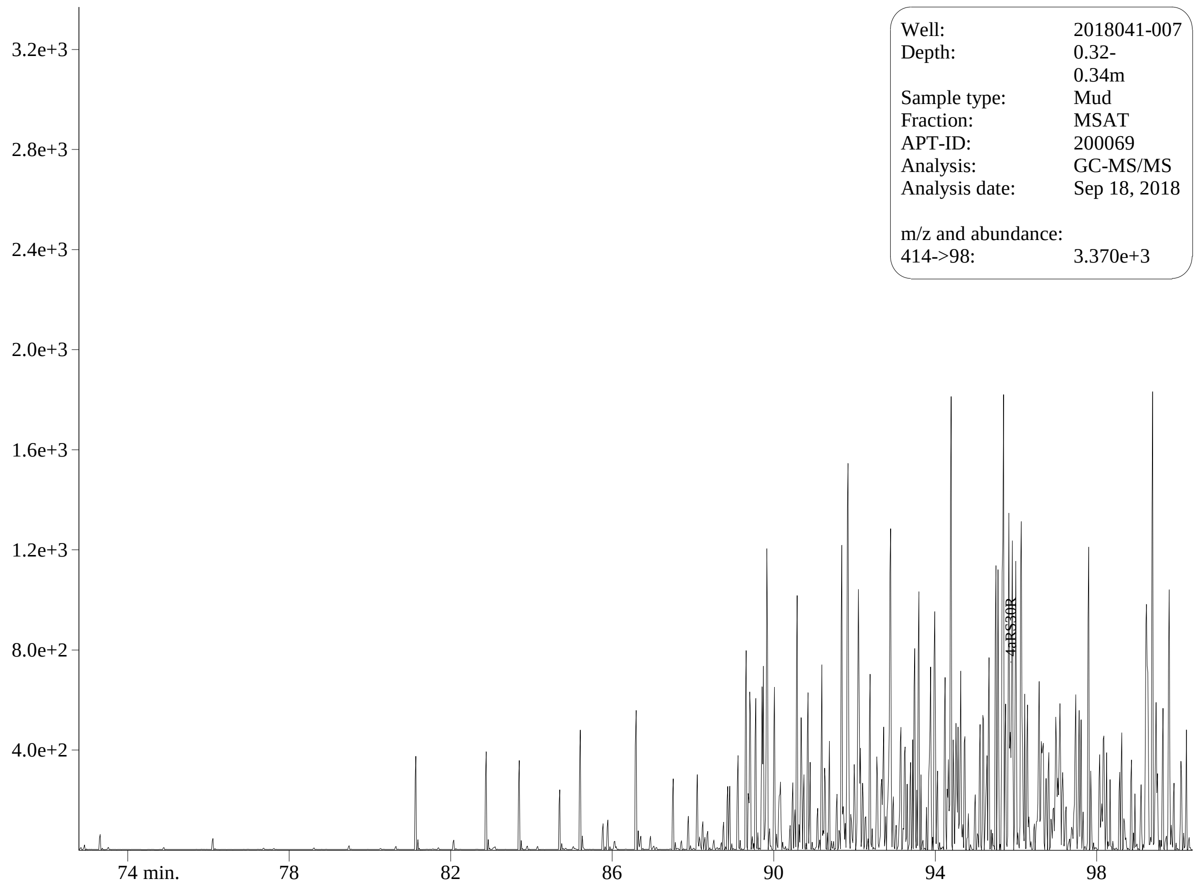

Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
386->217: 1.485e+5
28dbS#1
28dbS#2
28dbR#1
28dbR#2
28daR
28daS
28aaS
28bbR
28bbS
28aaR
1.4e+5
1.2e+5
1.0e+5
8.0e+4
6.0e+4
4.0e+4
2.0e+4
84 min.
86
88
90
92
94

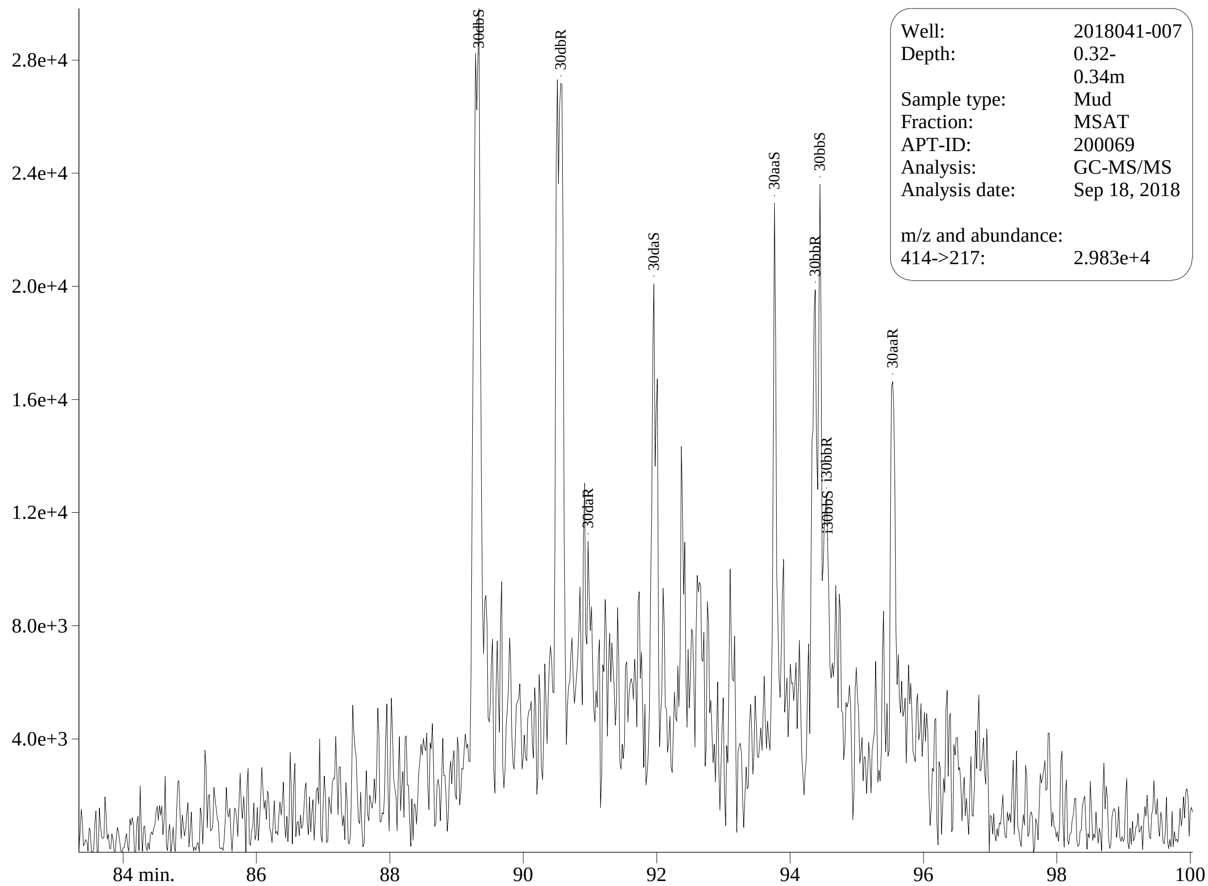


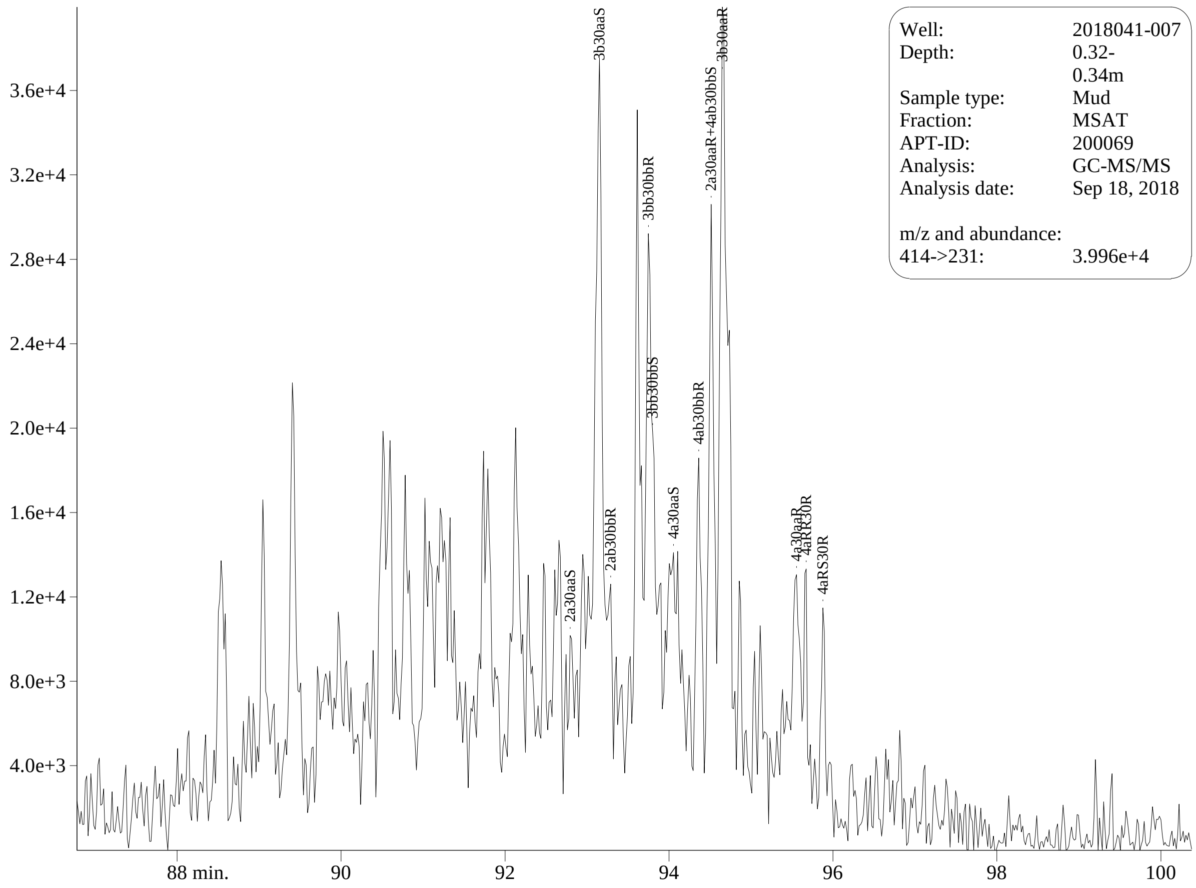
Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
386->231: 3.067e+4
3b28aaR+4a28bbR
3b28aaS
3b28bbS
3b28bbR
4a28aaS
4a28bbS
4a28aaR
2.8e+4
2.4e+4
2.0e+4
1.6e+4
1.2e+4
8.0e+3
4.0e+3
84 min.
86
88
90
92
94

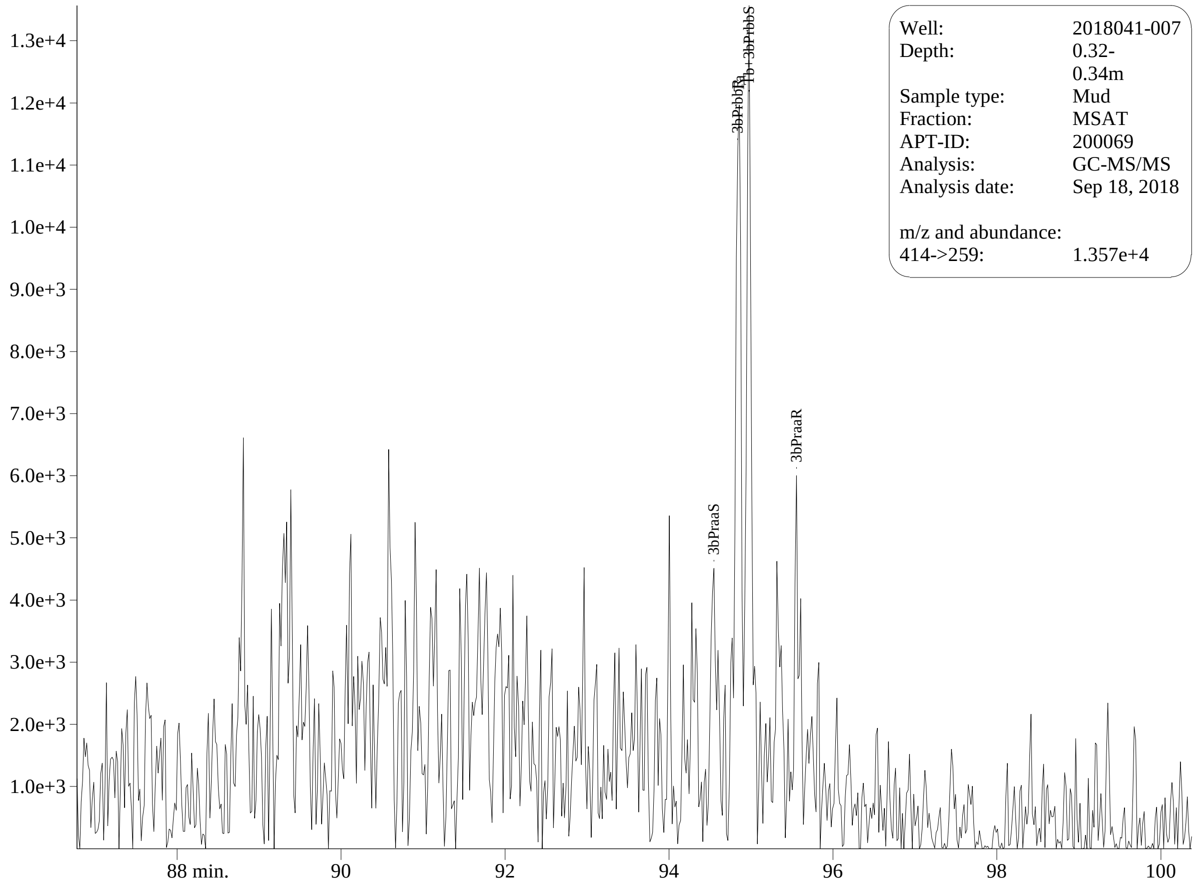


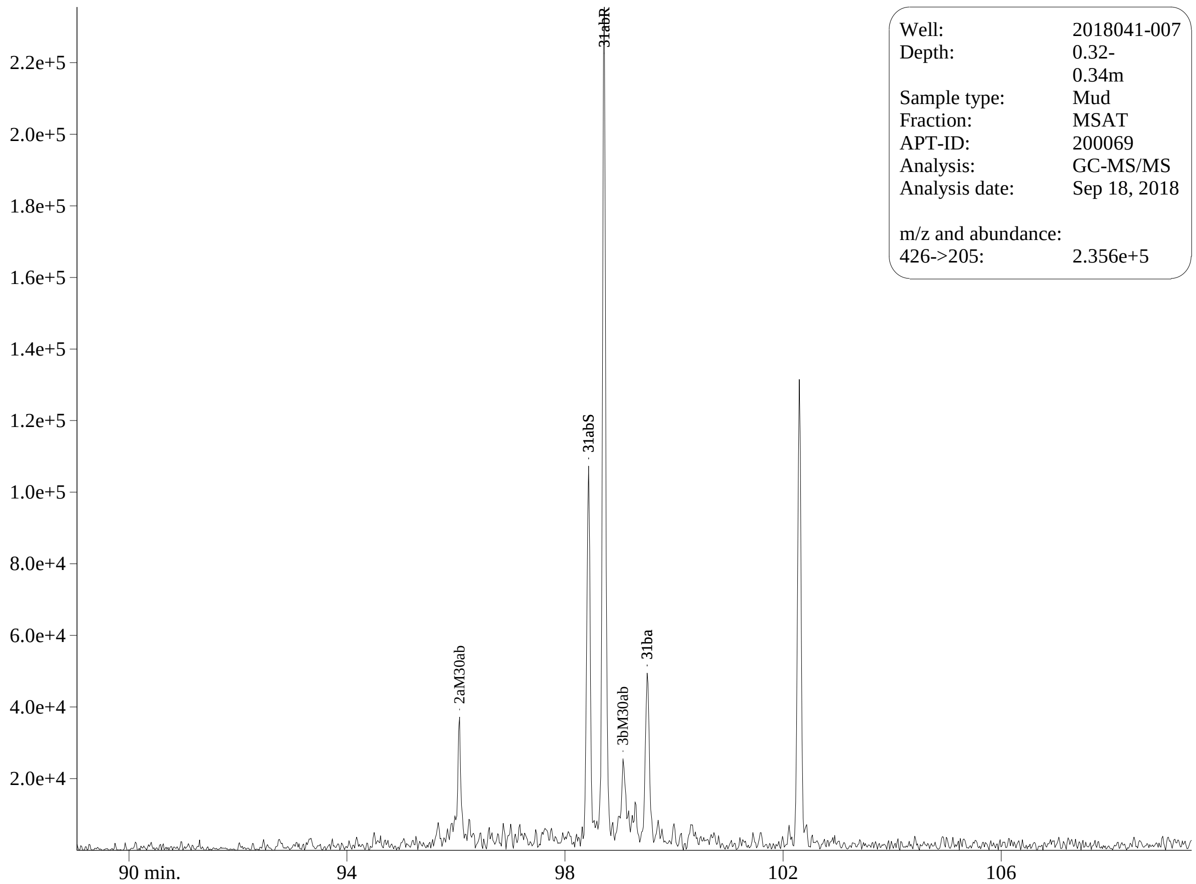
Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
400->217: 2.932e+5
29dbS
29dbR
29daR
29daS
29aaS
29bbR
29bbS
29aaR
2.8e+5
2.4e+5
2.0e+5
1.6e+5
1.2e+5
8.0e+4
4.0e+4
86 min.
88
90
92
94
96


Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->98: 3.370e+3
4aRS30R
3.2e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
74 min.
78
82
86
90
94
98

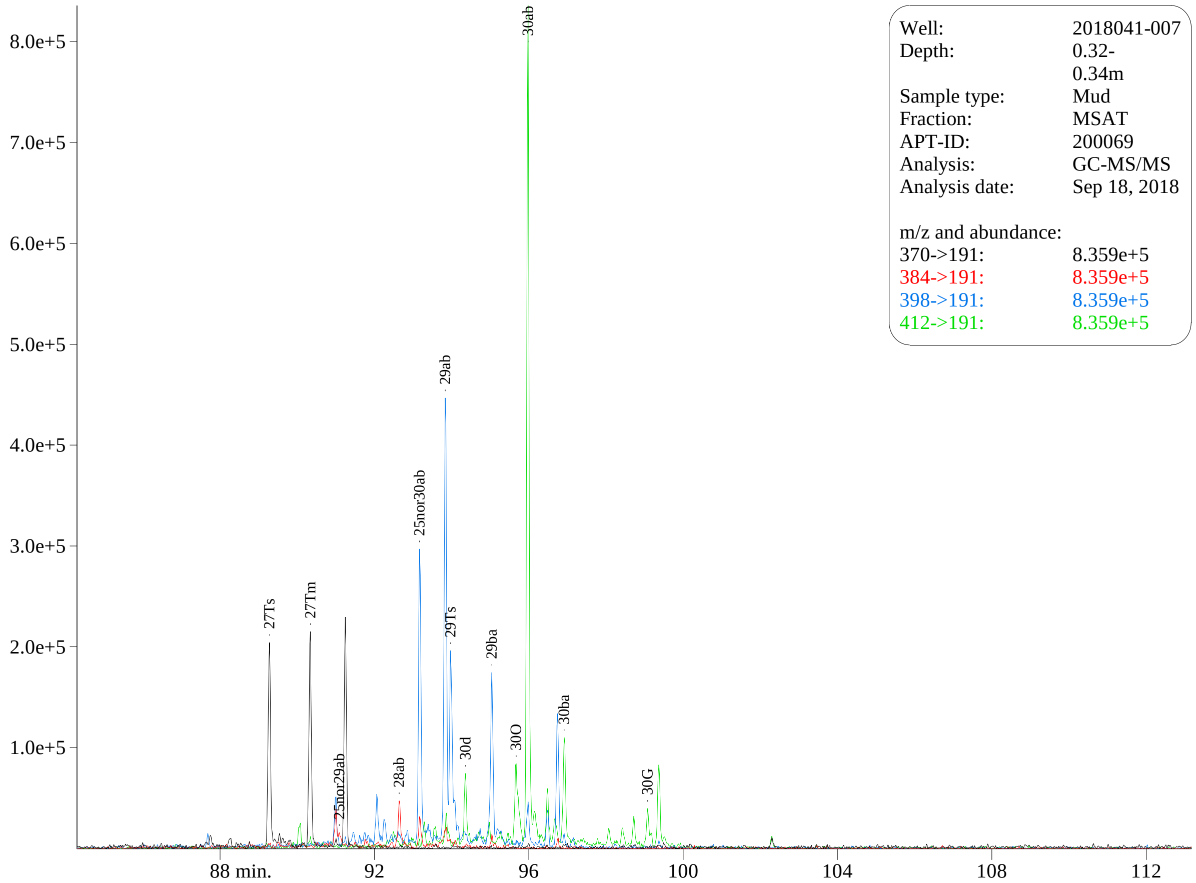

Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->217: 2.983e+4
30dbS
30dbR
30daR
30daS
30aaS
30bbR
30bbS
i30bbR
i30bbS
30aaR
2.8e+4
2.4e+4
2.0e+4
1.6e+4
1.2e+4
8.0e+3
4.0e+3
84 min.
86
88
90
92
94
96
98
100


Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->231: 3.996e+4
3b30aaS
3b30aaR
2a30aaR+4ab30bbS
3bb30bbR
3bb30bbS
4ab30bbR
4a30aaS
2ab30bbR
2a30aaS
4a30aaR
4aRR30R
4aRS30R
88 min.
90
92
94
96
98
100

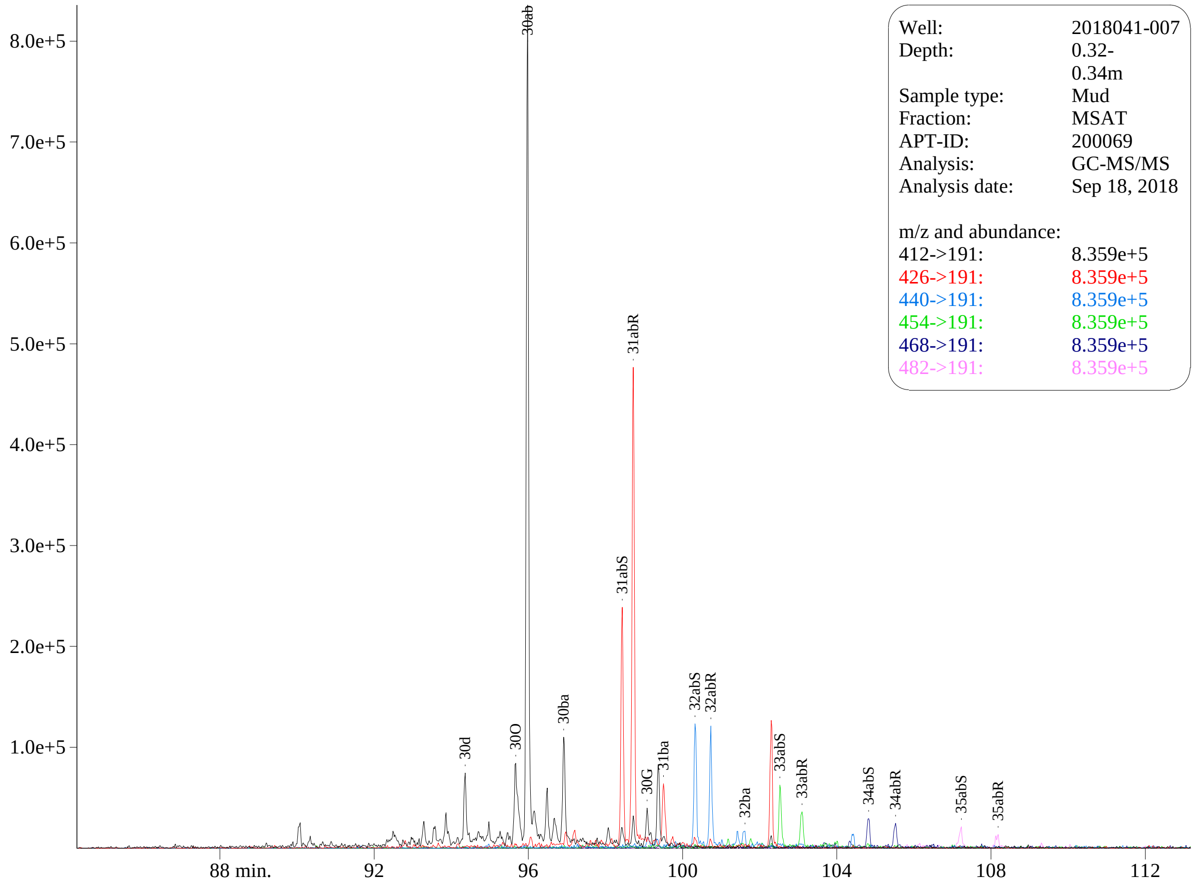

Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->259: 1.357e+4
3bPrbbR
1b+3bPrbbS
3bPraaR
3bPraaS
88 min.
90
92
94
96
98
100

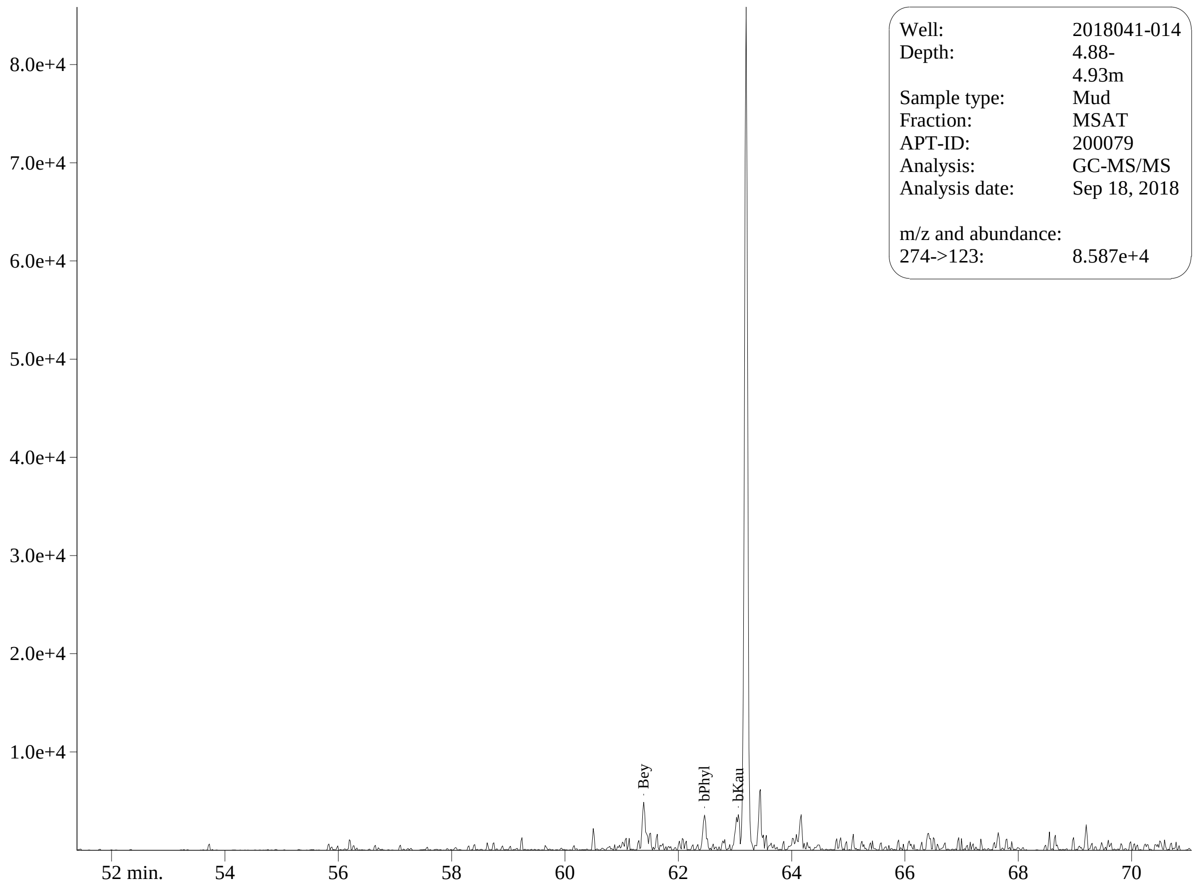


Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
426->205: 2.356e+5
31abR
31abS
31ba
3bM30ab
2aM30ab
2.2e+5
2.0e+5
1.8e+5
1.6e+5
1.4e+5
1.2e+5
1.0e+5
8.0e+4
6.0e+4
4.0e+4
2.0e+4
90 min.
94
98
102
106

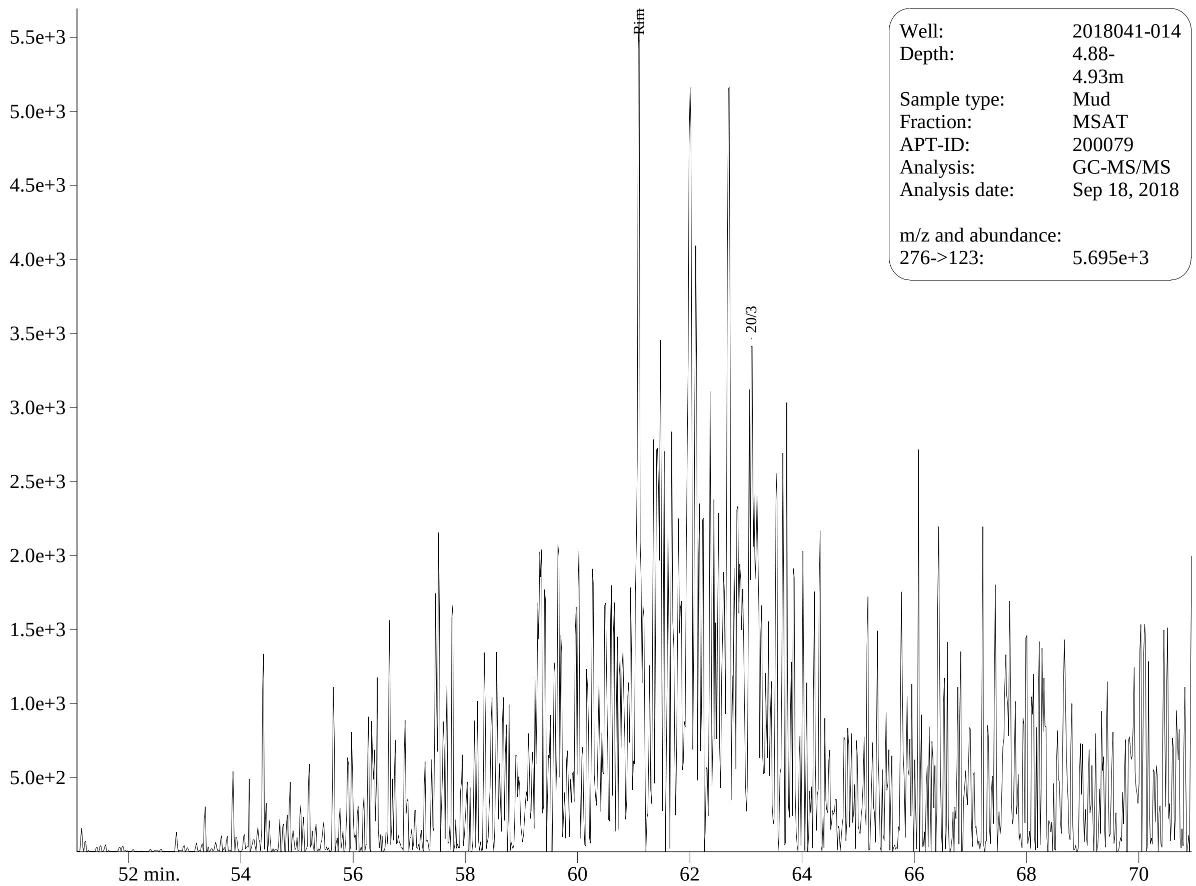


Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
370->191: 8.359e+5
384->191: 8.359e+5
398->191: 8.359e+5
412->191: 8.359e+5
30ab
29ab
25nor30ab
27Ts
27Tm
29Ts
29ba
30ba
30O
30d
28ab
25nor29ab
30G
8.0e+5
7.0e+5
6.0e+5
5.0e+5
4.0e+5
3.0e+5
2.0e+5
1.0e+5
88 min.
92
96
100
104
108
112

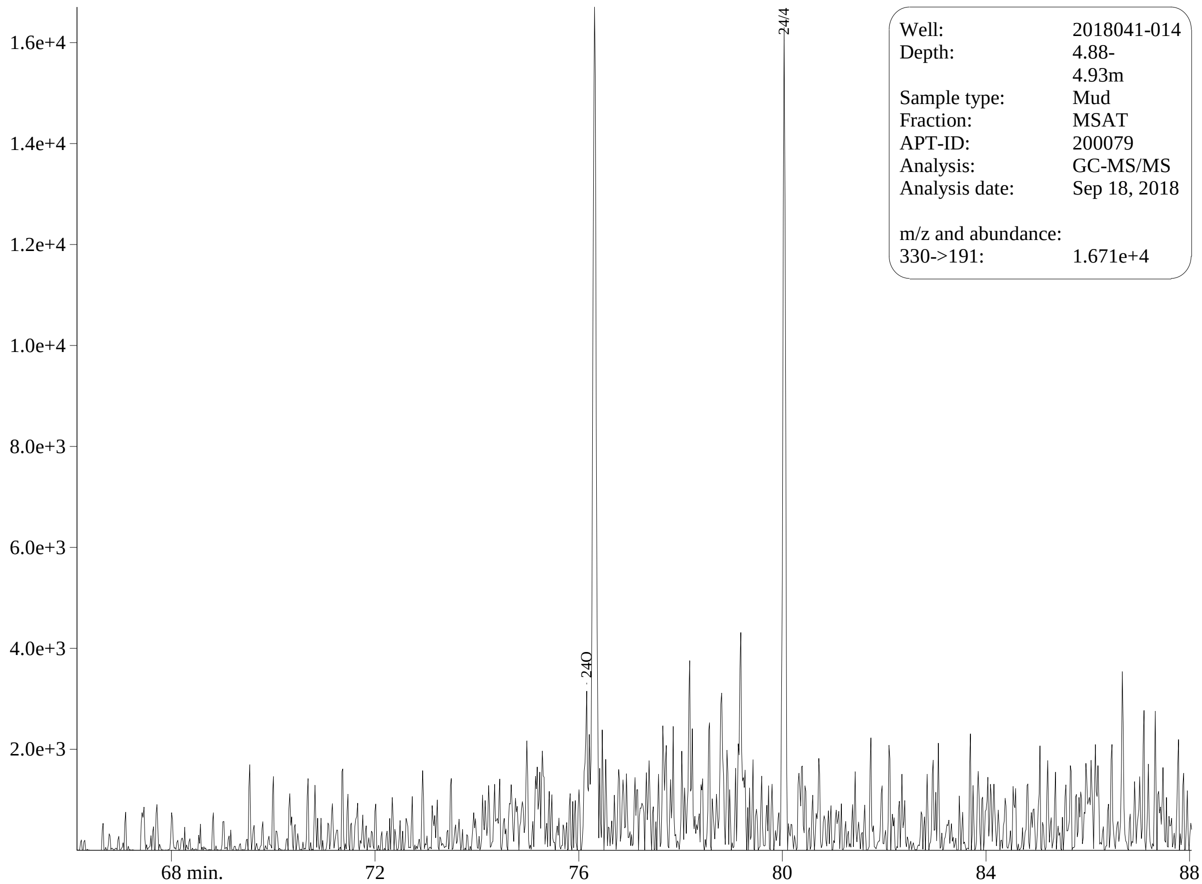

Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
412->191: 8.359e+5
426->191: 8.359e+5
440->191: 8.359e+5
454->191: 8.359e+5
468->191: 8.359e+5
482->191: 8.359e+5
8.0e+5
7.0e+5
6.0e+5
5.0e+5
4.0e+5
3.0e+5
2.0e+5
1.0e+5
88 min.
92
96
100
104
108
112
30ab
31abR
31abS
30d
30O
30ba
30G
31ba
32abS
32abR
32ba
33abS
33abR
34abS
34abR
35abS
35abR



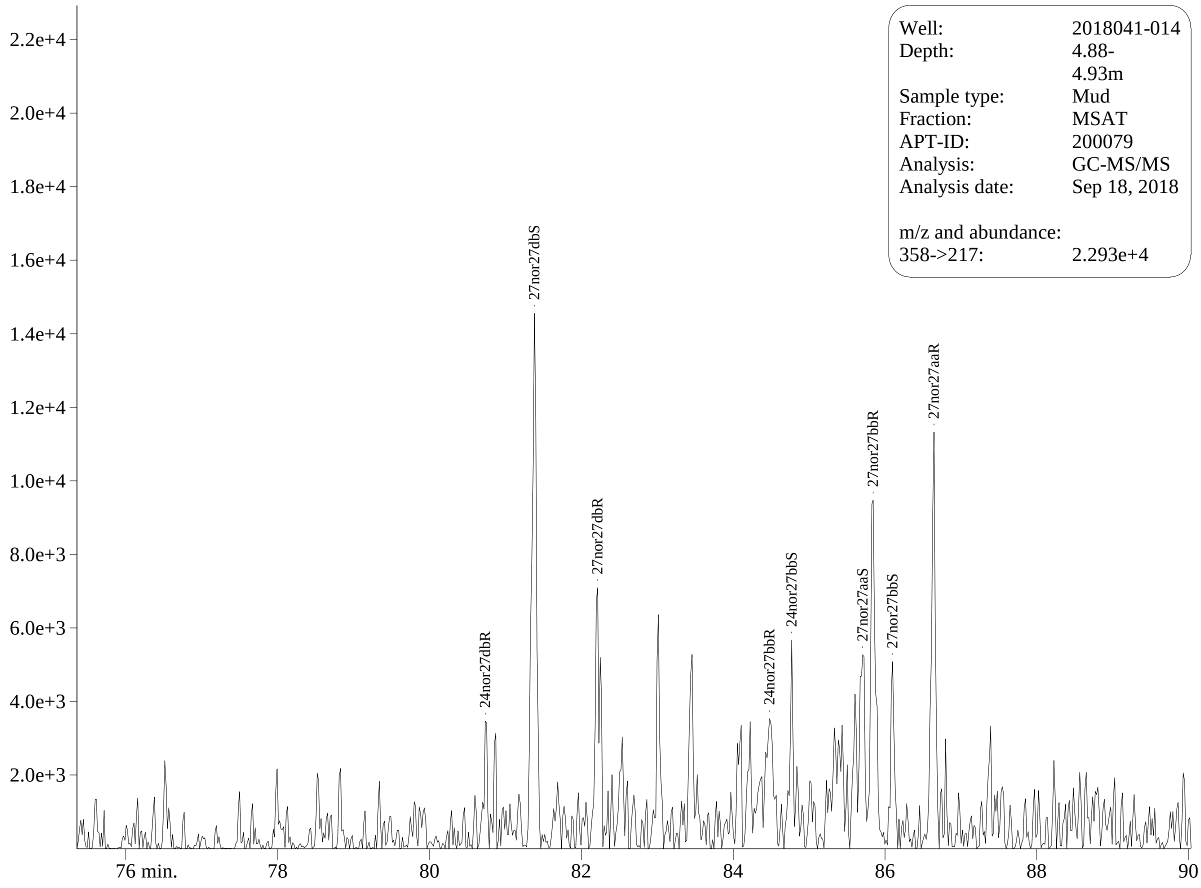
Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
274->123: 8.587e+4
Bey
bPhyl
bKau
8.0e+4
7.0e+4
6.0e+4
5.0e+4
4.0e+4
3.0e+4
2.0e+4
1.0e+4
52 min.
54
56
58
60
62
64
66
68
70



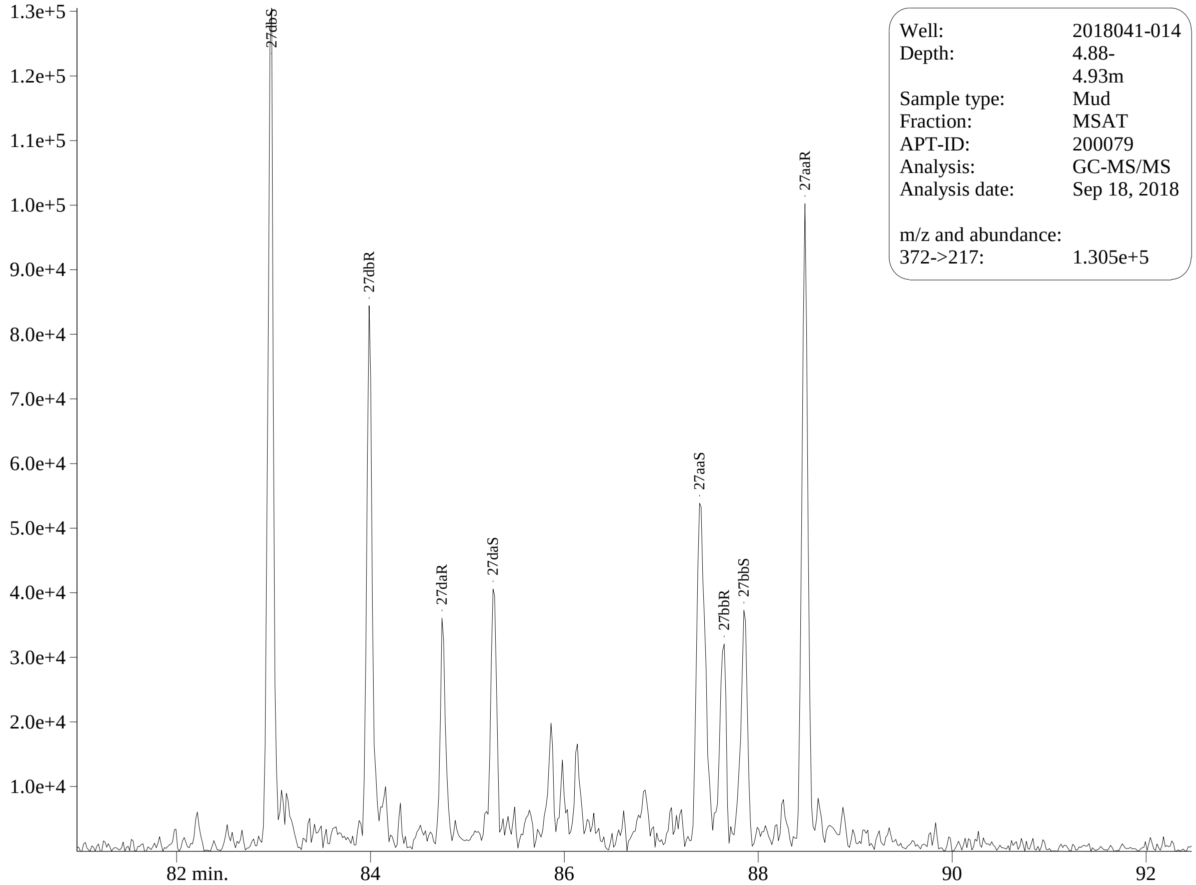
Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
276->123: 5.695e+3
Rim
20/3
5.5e+3
5.0e+3
4.5e+3
4.0e+3
3.5e+3
3.0e+3
2.5e+3
2.0e+3
1.5e+3
1.0e+3
5.0e+2
52 min.
54
56
58
60
62
64
66
68
70



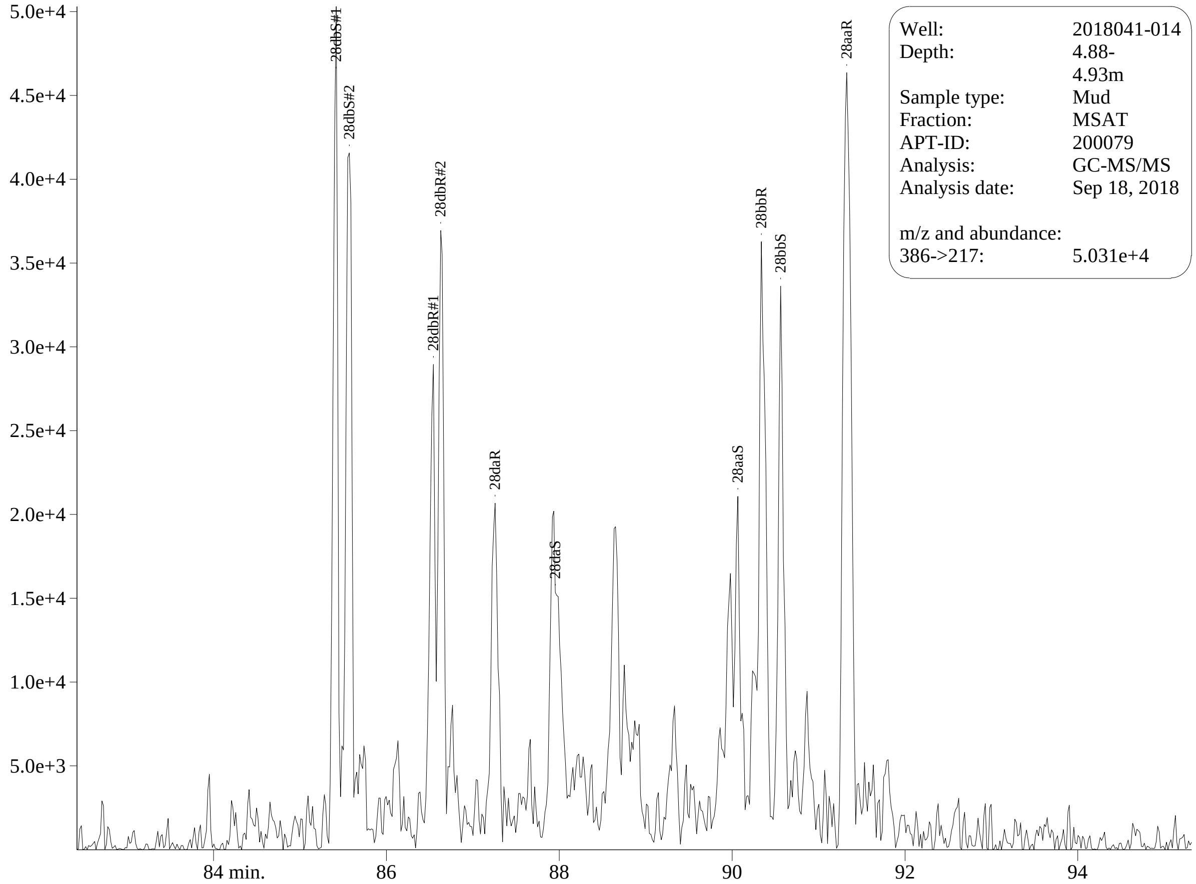
Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
330->191: 1.671e+4
24O
24/4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
68 min.
72
76
80
84
88



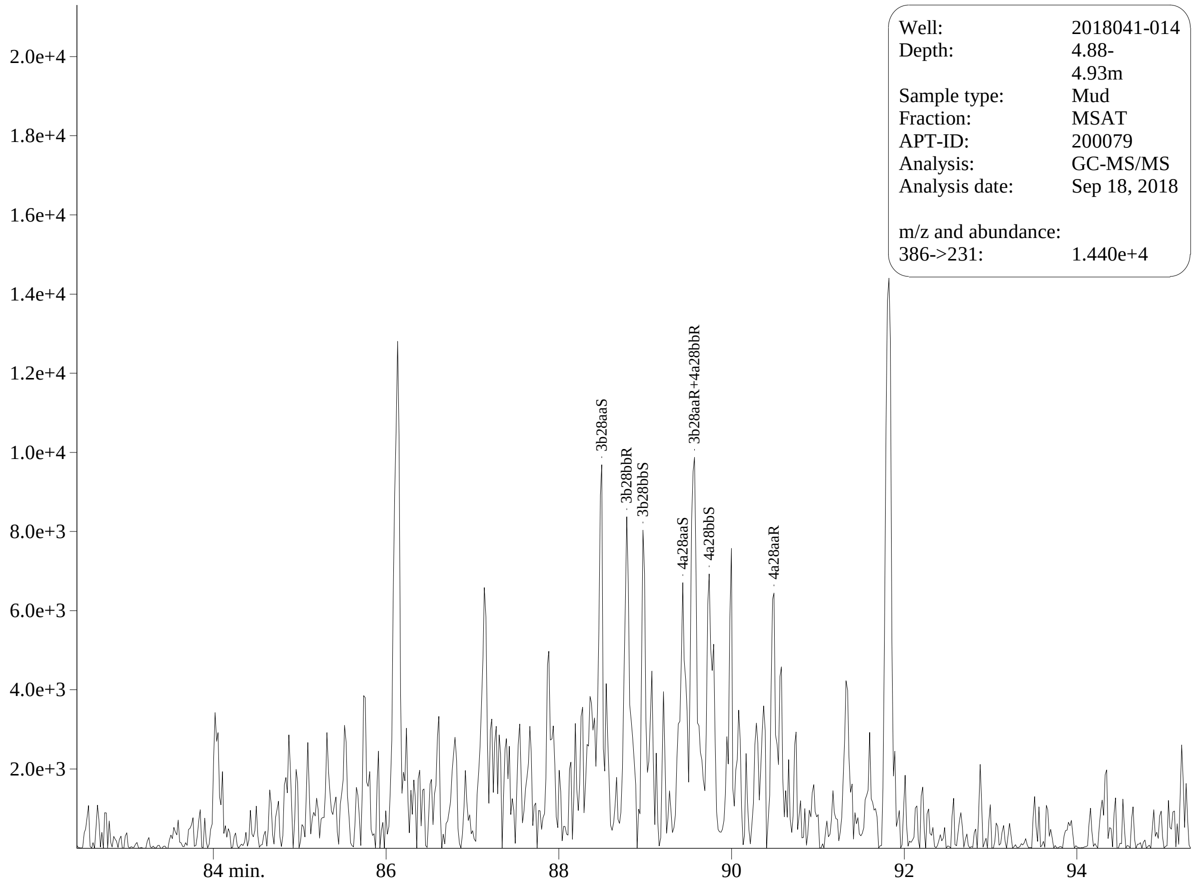
Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
358->217: 2.293e+4
24nor27dbR
27nor27dbS
27nor27dbR
24nor27bbR
24nor27bbS
27nor27aaS
27nor27bbR
27nor27bbS
27nor27aaR
2.2e+4
2.0e+4
1.8e+4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
76 min.
78
80
82
84
86
88
90

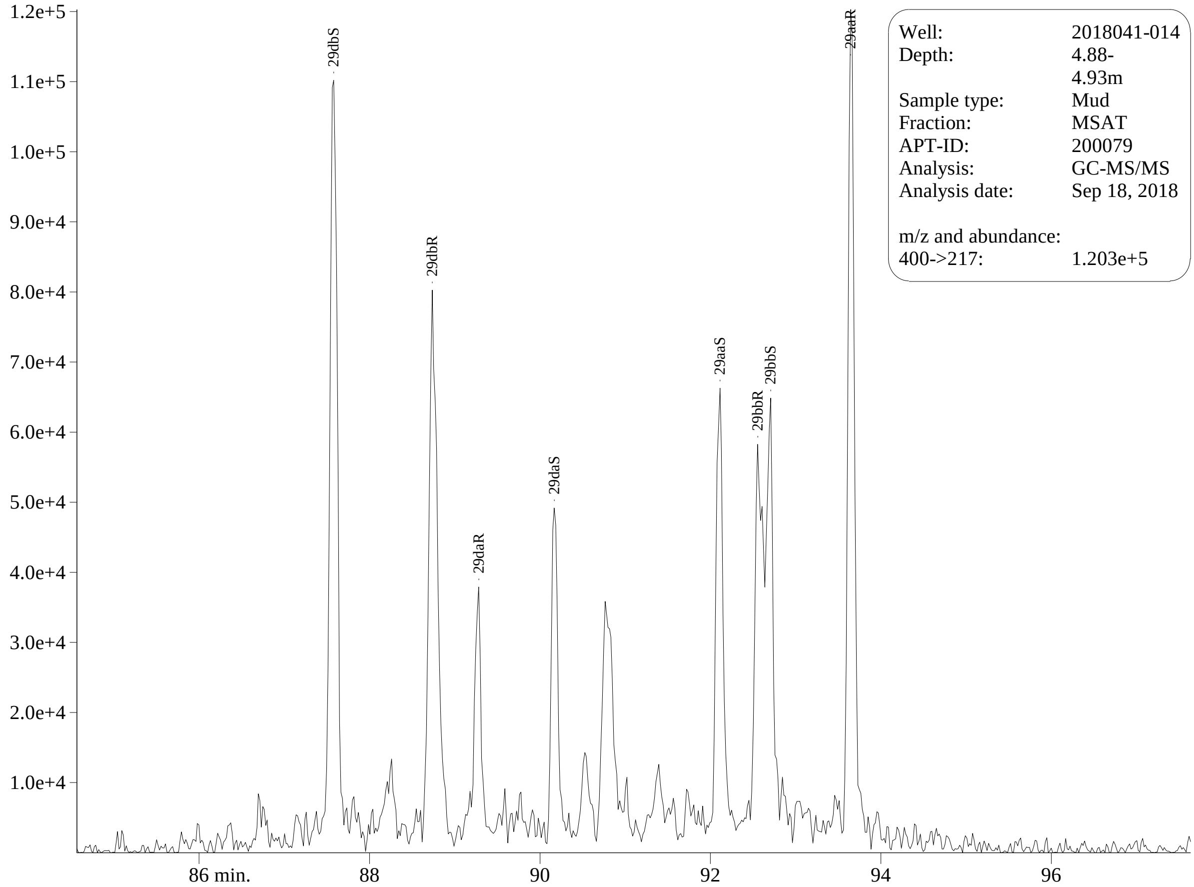


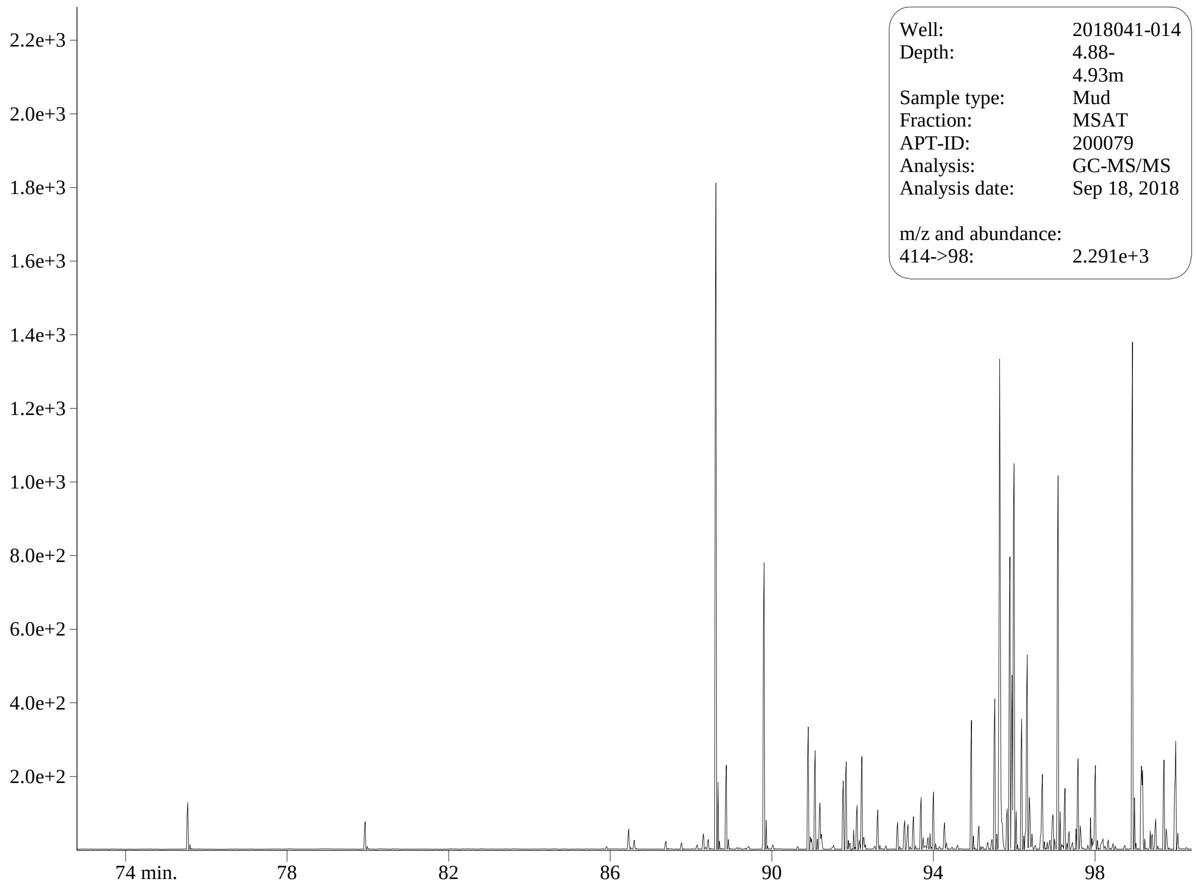
Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
372->217: 1.305e+5
27dbS
27dbR
27daR
27daS
27aaS
27bbR
27bbS
27aaR
1.3e+5
1.2e+5
1.1e+5
1.0e+5
9.0e+4
8.0e+4
7.0e+4
6.0e+4
5.0e+4
4.0e+4
3.0e+4
2.0e+4
1.0e+4
82 min.
84
86
88
90
92

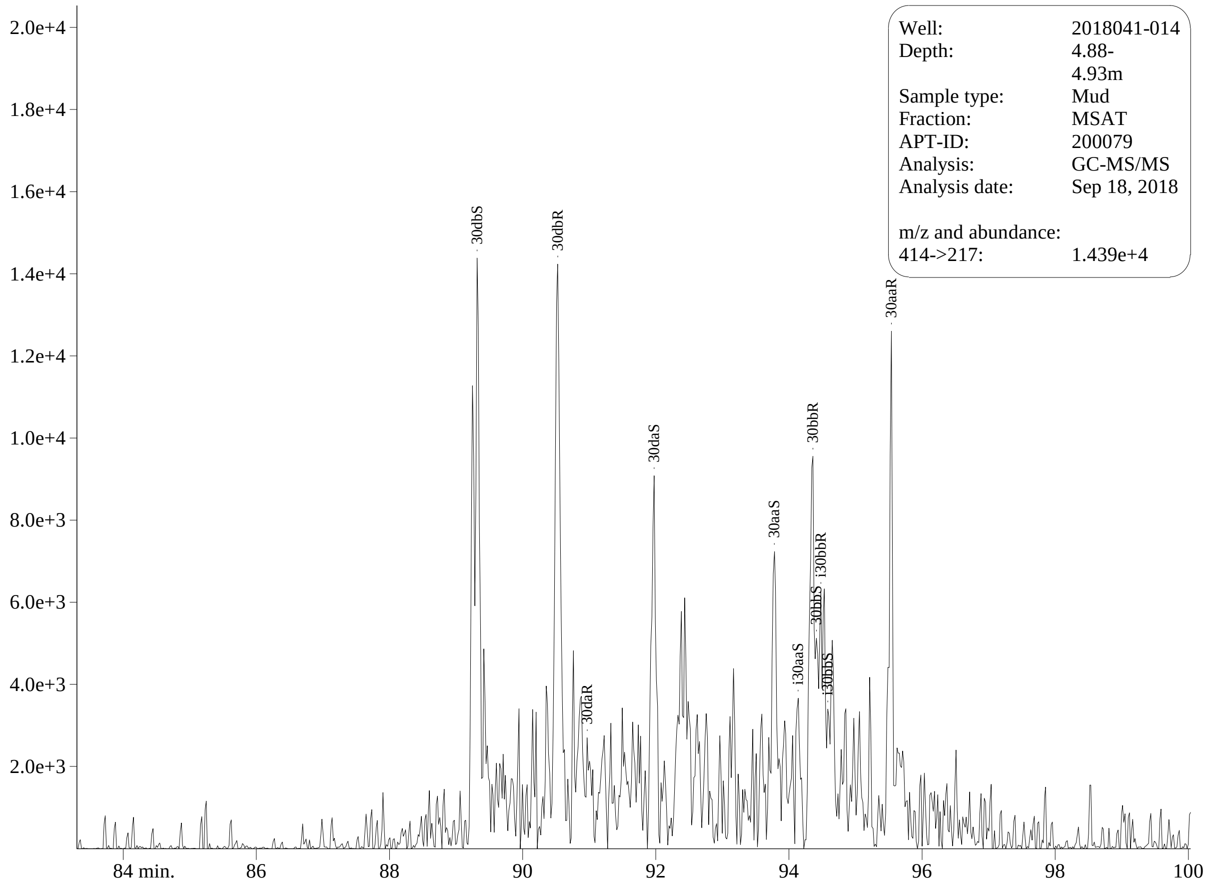


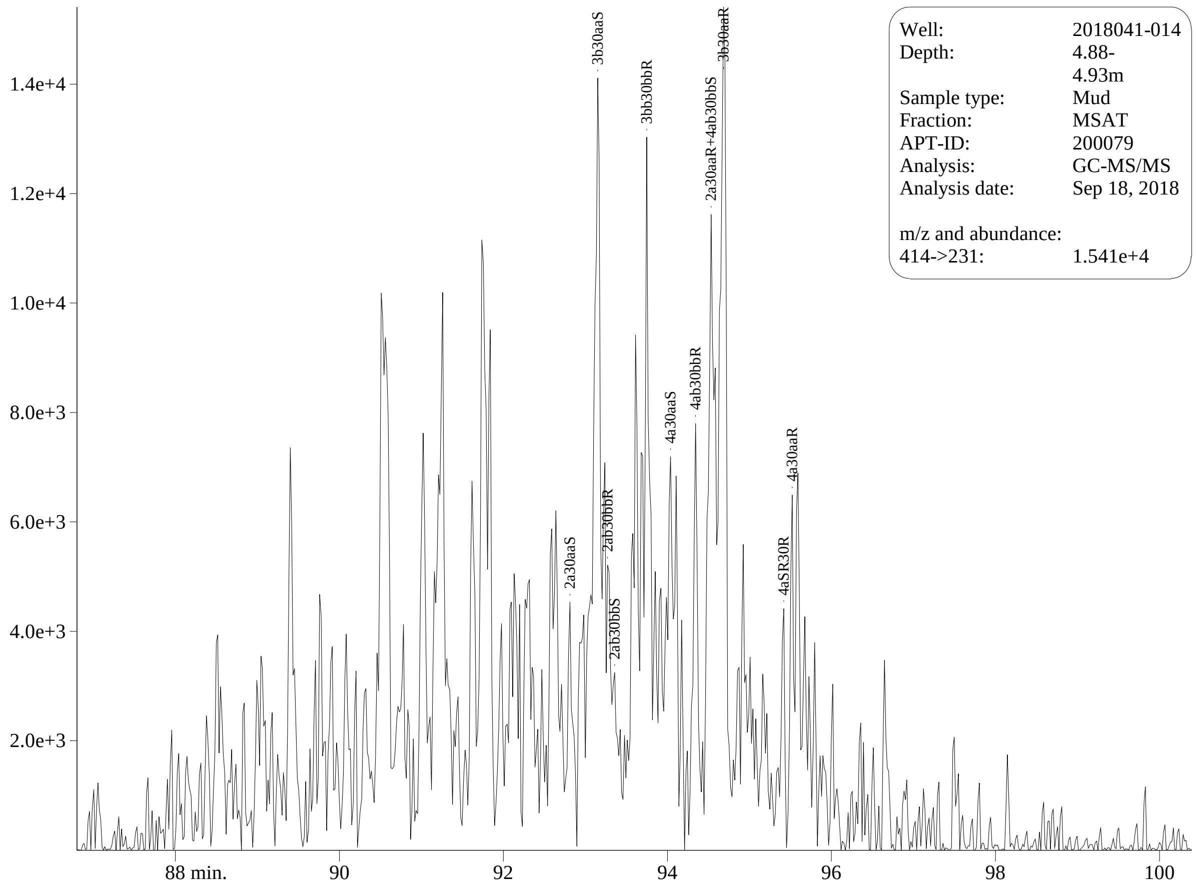
Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
386->217: 5.031e+4
28dbS#1
28dbS#2
28dbR#1
28dbR#2
28daR
28daS
28aaS
28bbR
28bbS
28aaR
5.0e+4
4.5e+4
4.0e+4
3.5e+4
3.0e+4
2.5e+4
2.0e+4
1.5e+4
1.0e+4
5.0e+3
84 min.
86
88
90
92
94


Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
386->231: 1.440e+4
3b28aaS
3b28bbR
3b28bbS
4a28aaS
3b28aaR+4a28bbR
4a28bbS
4a28aaR
84 min.
86
88
90
92
94

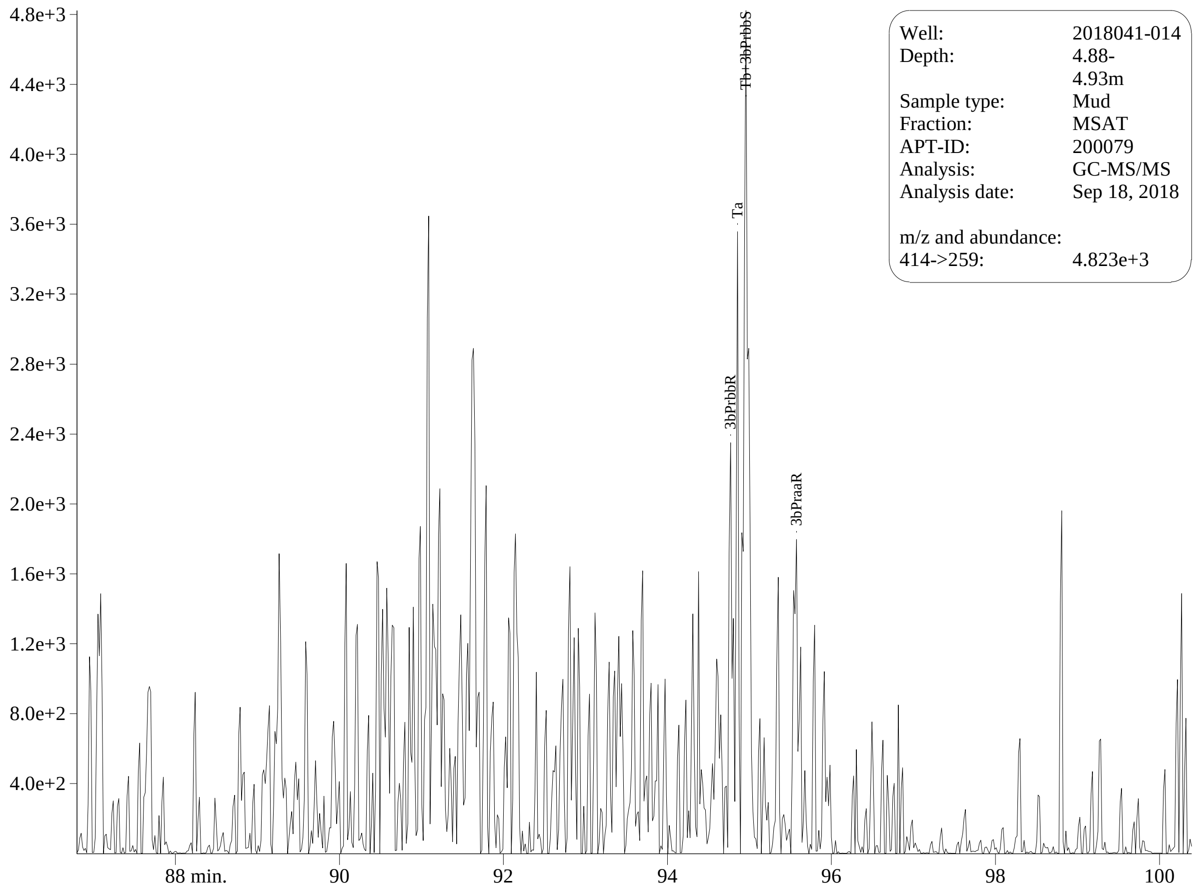

Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
400->217: 1.203e+5
29dbS
29dbR
29daR
29daS
29aaS
29bbR
29bbS
29aaR
86 min.
88
90
92
94
96


Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->98: 2.291e+3
2.2e+3
2.0e+3
1.8e+3
1.6e+3
1.4e+3
1.2e+3
1.0e+3
8.0e+2
6.0e+2
4.0e+2
2.0e+2
74 min.
78
82
86
90
94
98

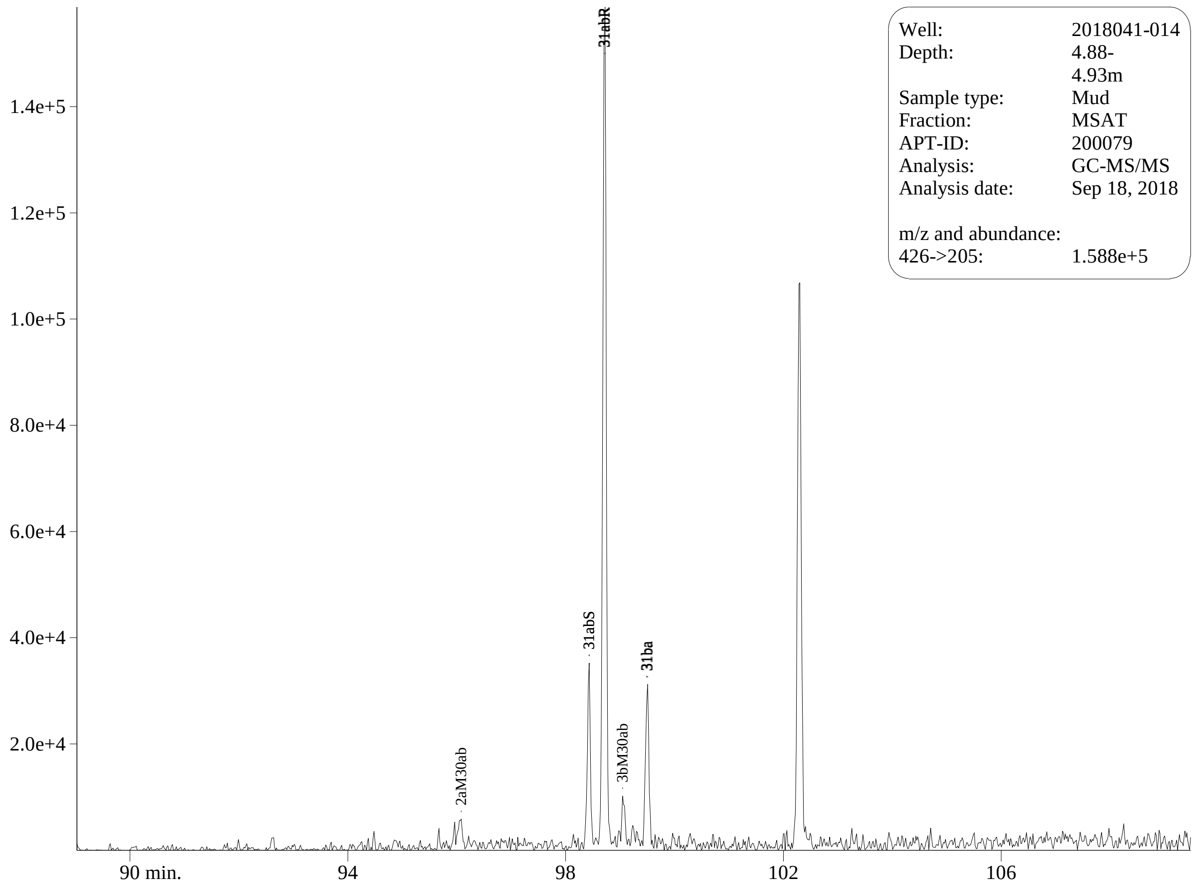

Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->217: 1.439e+4
30dbS
30dbR
30daR
30daS
30aaS
i30aaS
30bbR
30bbS
i30bbR
i30bbS
30aaR
2.0e+4
1.8e+4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
84 min.
86
88
90
92
94
96
98
100



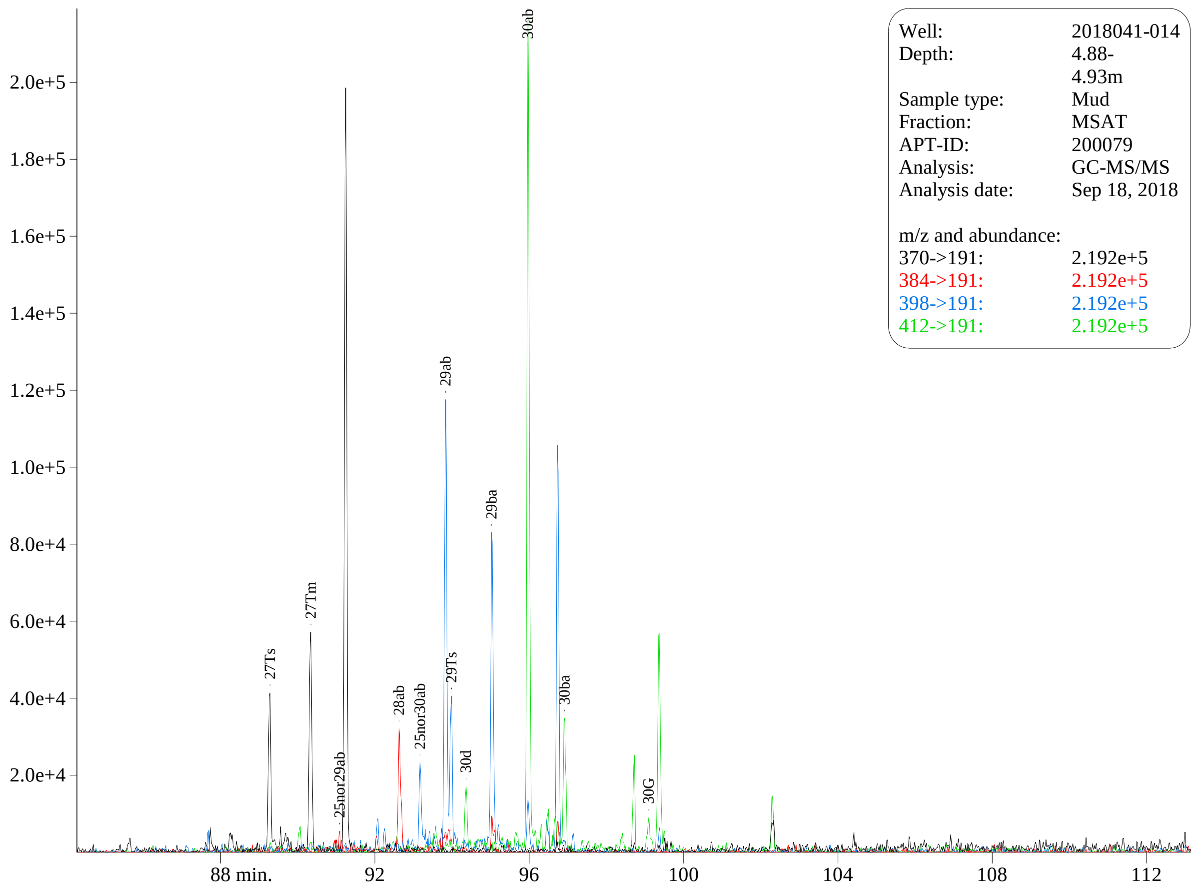
Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->231: 1.541e+4
3b30aaS
3bb30bbR
2a30aaR+4ab30bbS
3b30aaR
4ab30bbR
4a30aaS
4a30aaR
4aSR30R
2ab30bbR
2a30aaS
2ab30bbS
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
88 min.
90
92
94
96
98
100



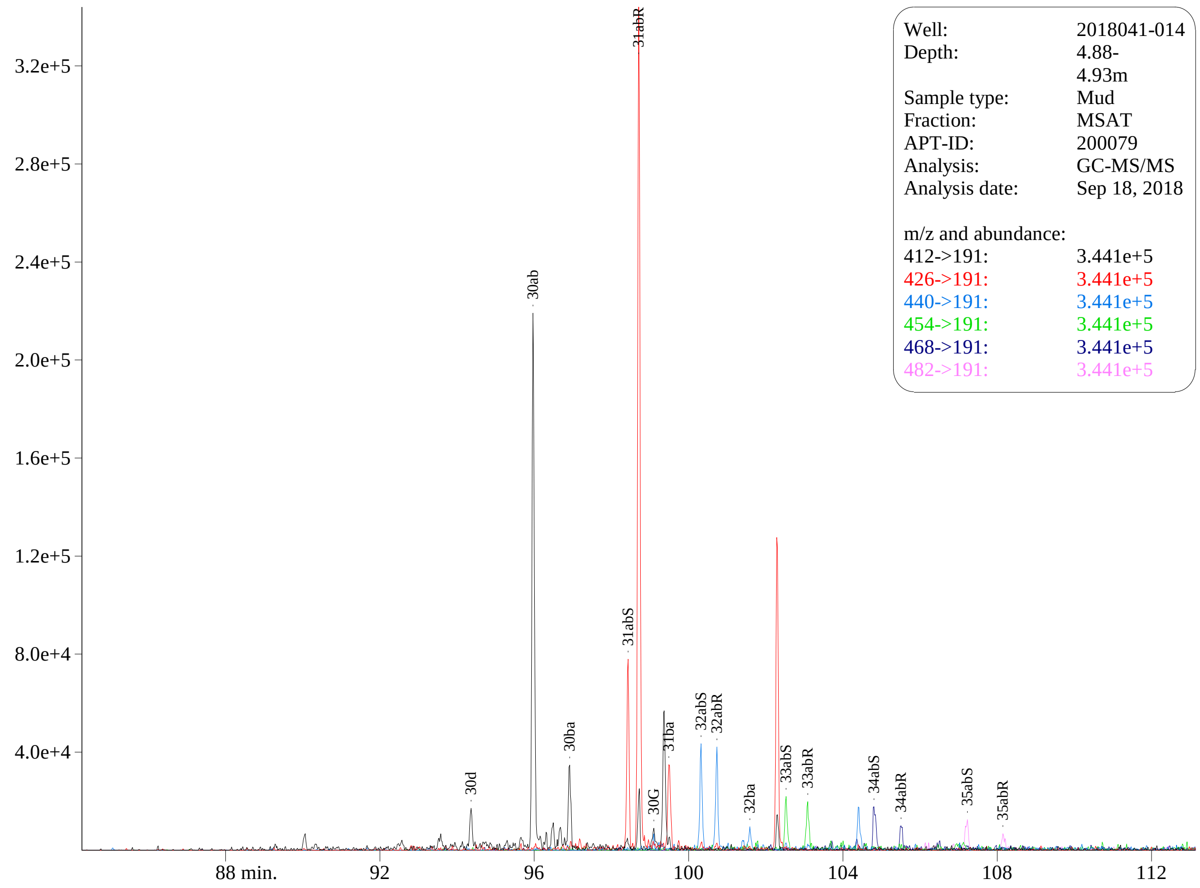
Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->259: 4.823e+3
Tb+3bPrbbS
Ta
3bPrbbR
3bPraaR
4.8e+3
4.4e+3
4.0e+3
3.6e+3
3.2e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
88 min.
90
92
94
96
98
100

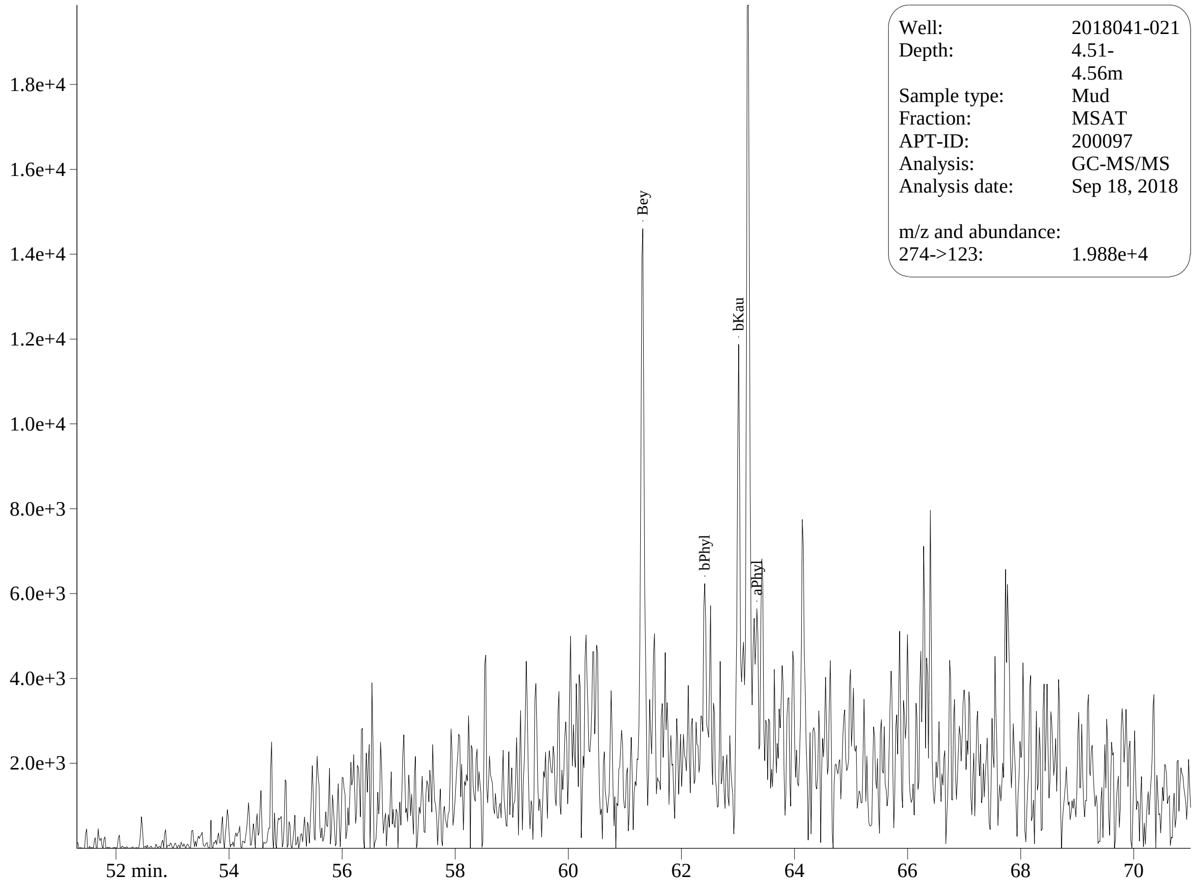


Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
426->205: 1.588e+5
31abR
31abS
31ba
3bM30ab
2aM30ab
1.4e+5
1.2e+5
1.0e+5
8.0e+4
6.0e+4
4.0e+4
2.0e+4
90 min.
94
98
102
106

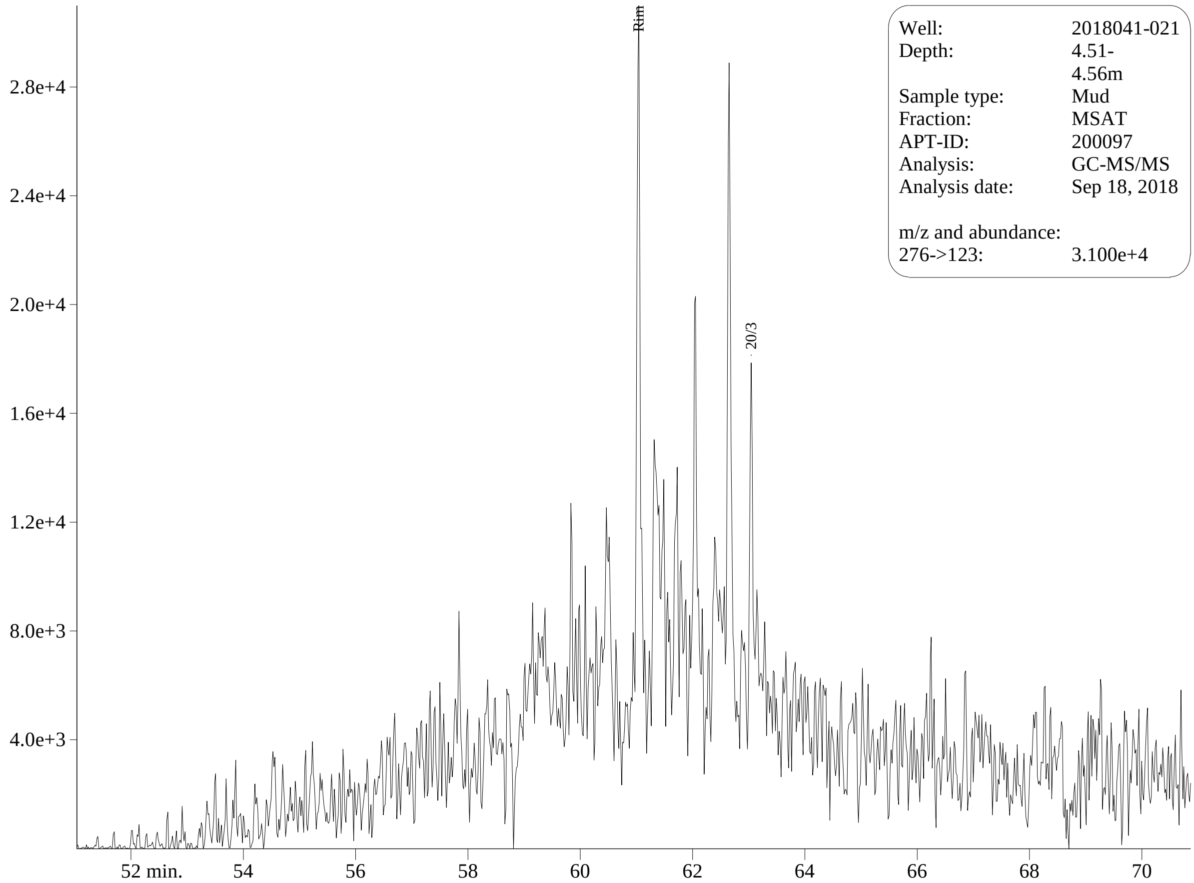


Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
370->191: 2.192e+5
384->191: 2.192e+5
398->191: 2.192e+5
412->191: 2.192e+5
30ab
29ab
29ba
27Tm
27Ts
29Ts
30ba
28ab
25nor30ab
30d
25nor29ab
30G
2.0e+5
1.8e+5
1.6e+5
1.4e+5
1.2e+5
1.0e+5
8.0e+4
6.0e+4
4.0e+4
2.0e+4
88 min.
92
96
100
104
108
112

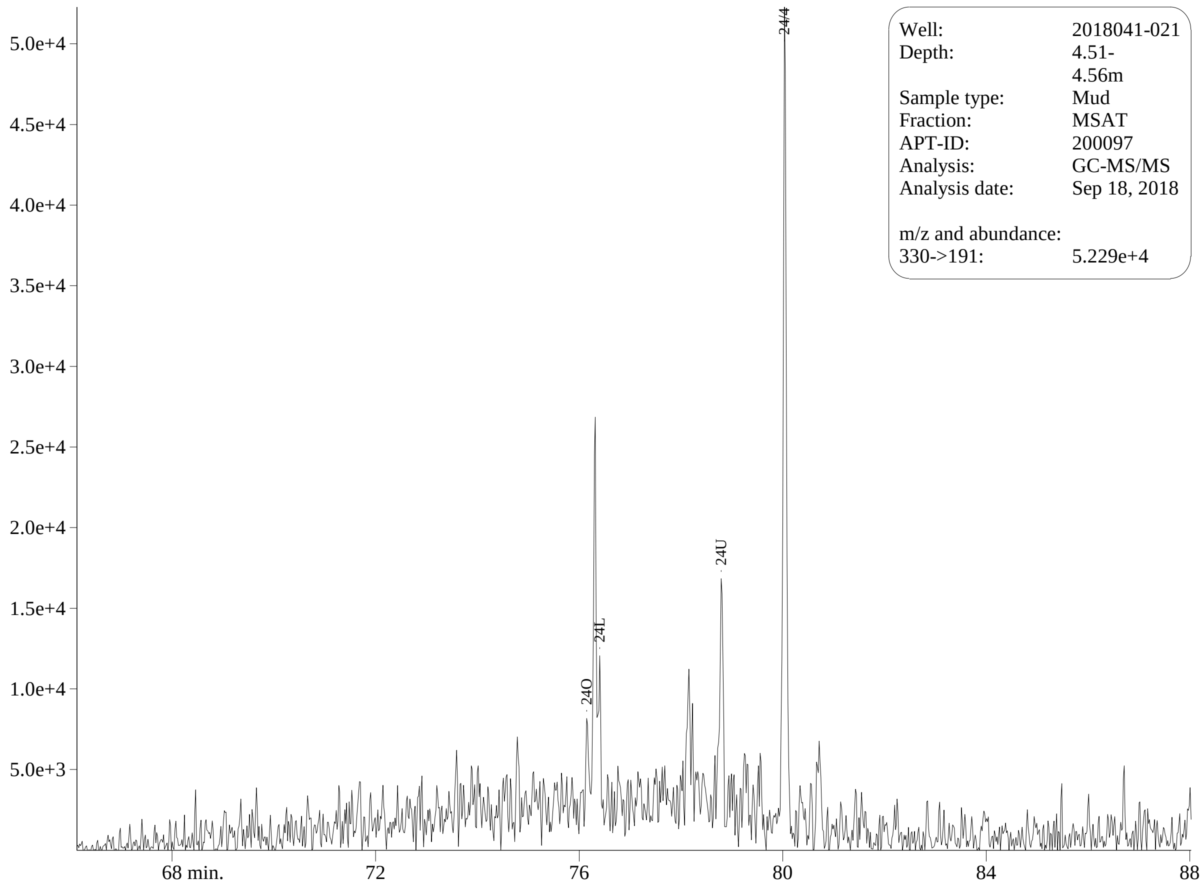

3.2e+5
2.8e+5
2.4e+5
2.0e+5
1.6e+5
1.2e+5
8.0e+4
4.0e+4
88 min.
92
96
100
104
108
112
30d
30ab
30ba
31abS
31abR
30G
31ba
32abS
32abR
32ba
33abS
33abR
34abS
34abR
35abS
35abR
Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
412->191: 3.441e+5
426->191: 3.441e+5
440->191: 3.441e+5
454->191: 3.441e+5
468->191: 3.441e+5
482->191: 3.441e+5

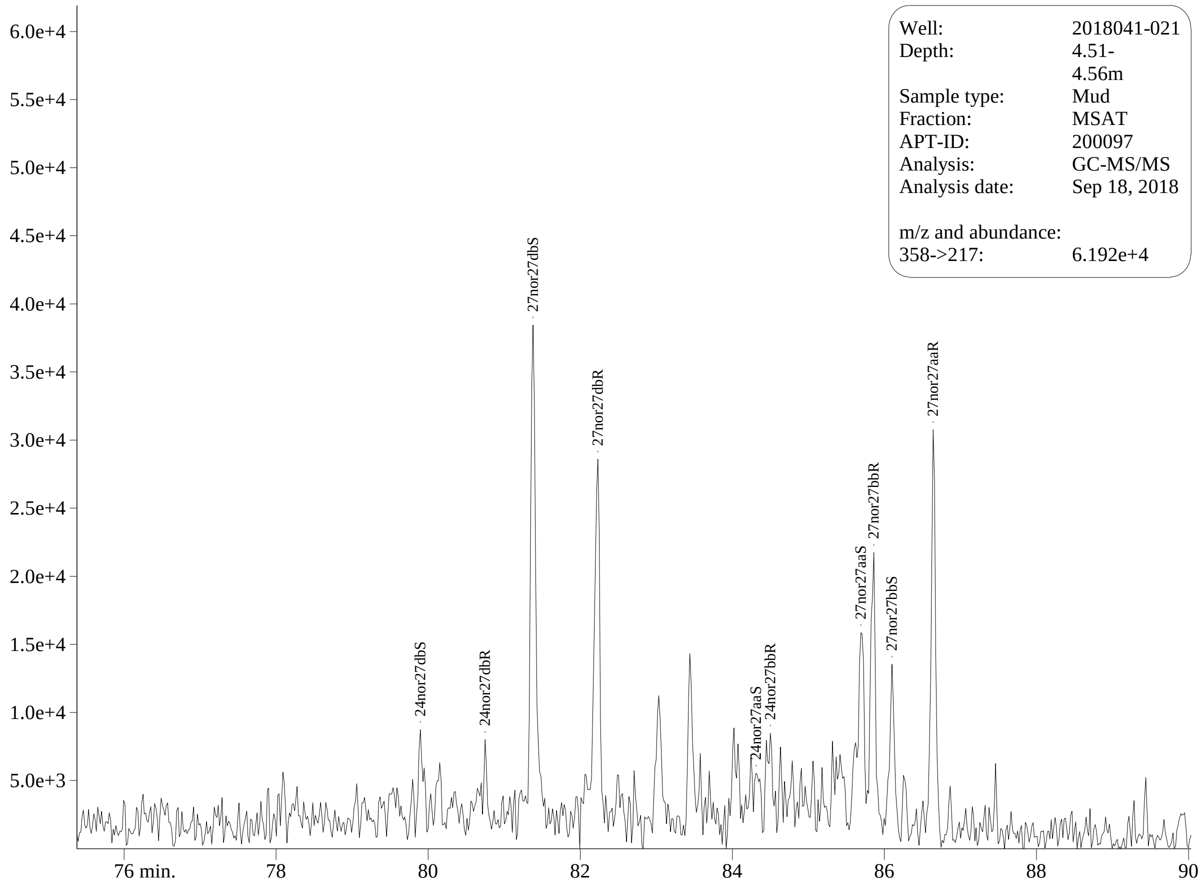


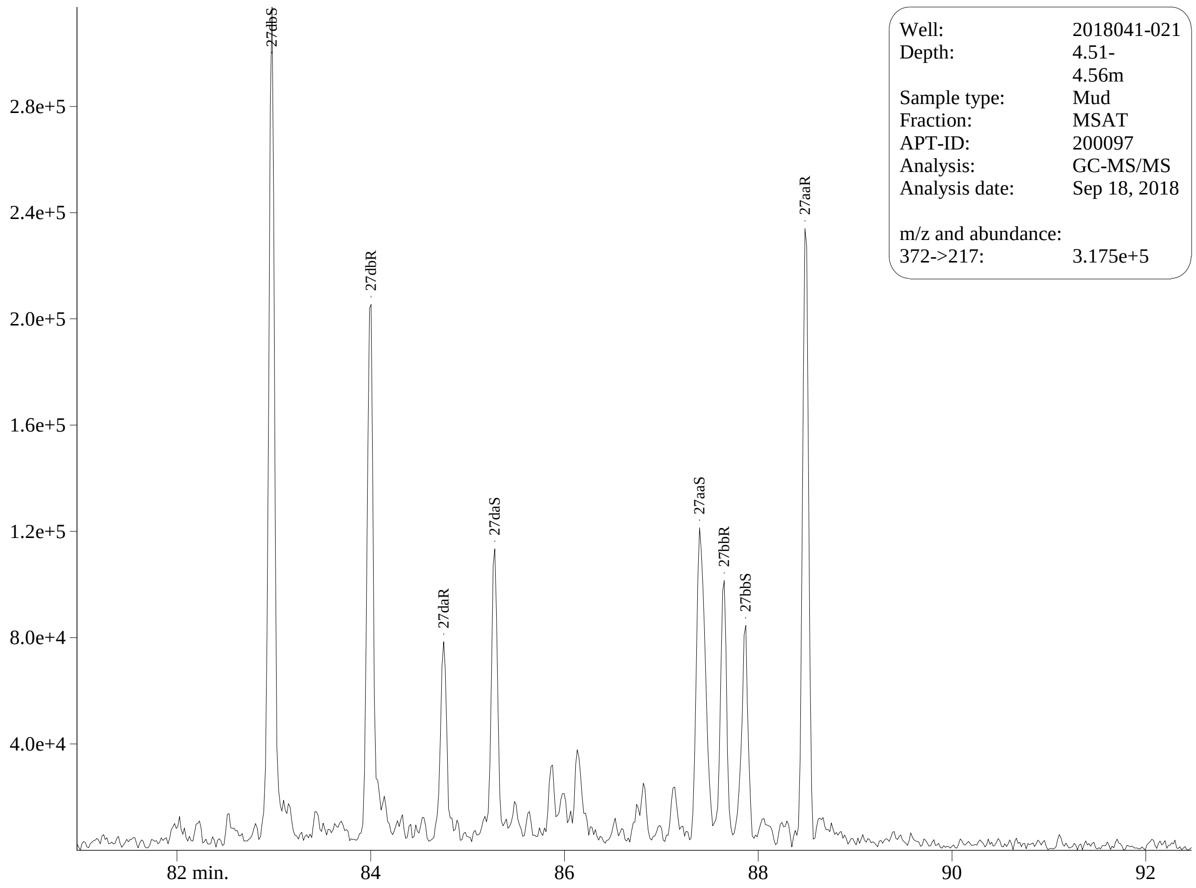
Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200097
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
274->123: 1.988e+4
Bey
bKau
bPhyl
aPhyl
1.8e+4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
52 min.
54
56
58
60
62
64
66
68
70

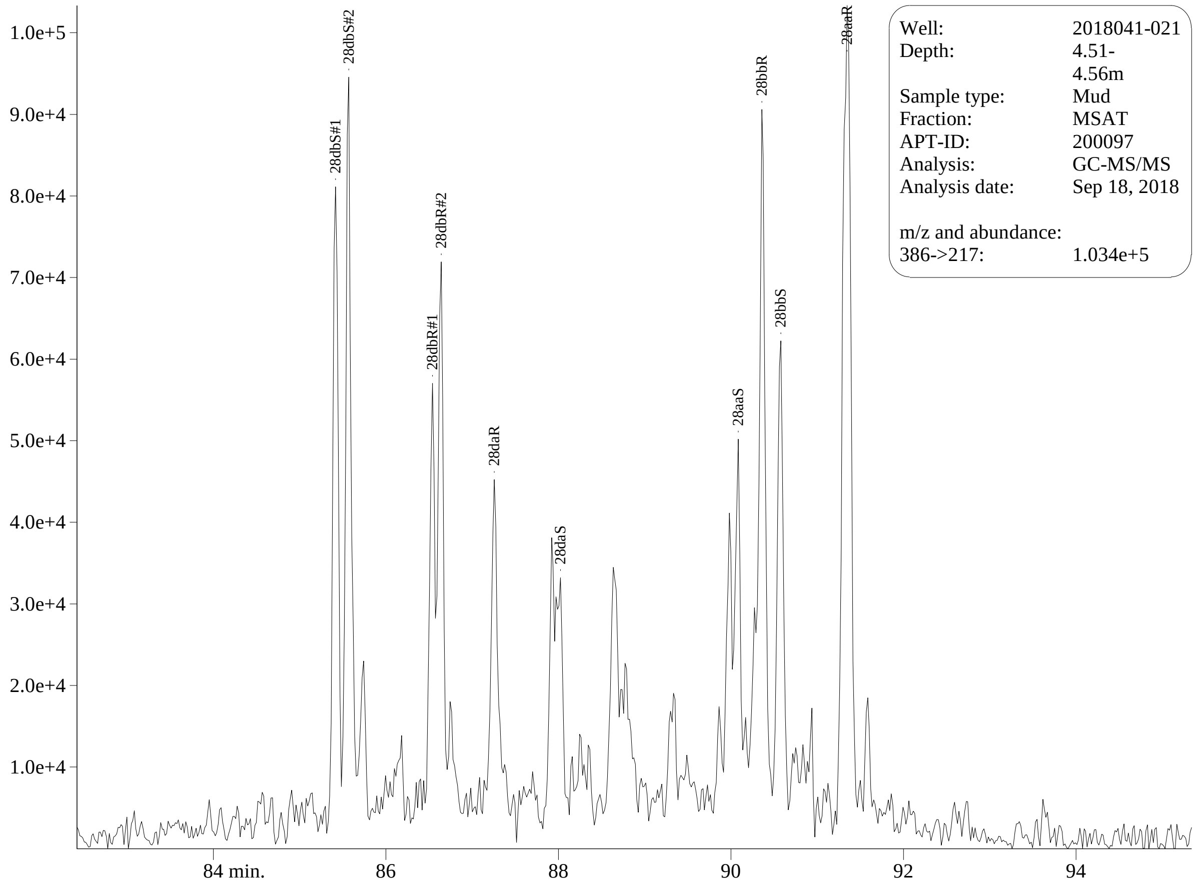


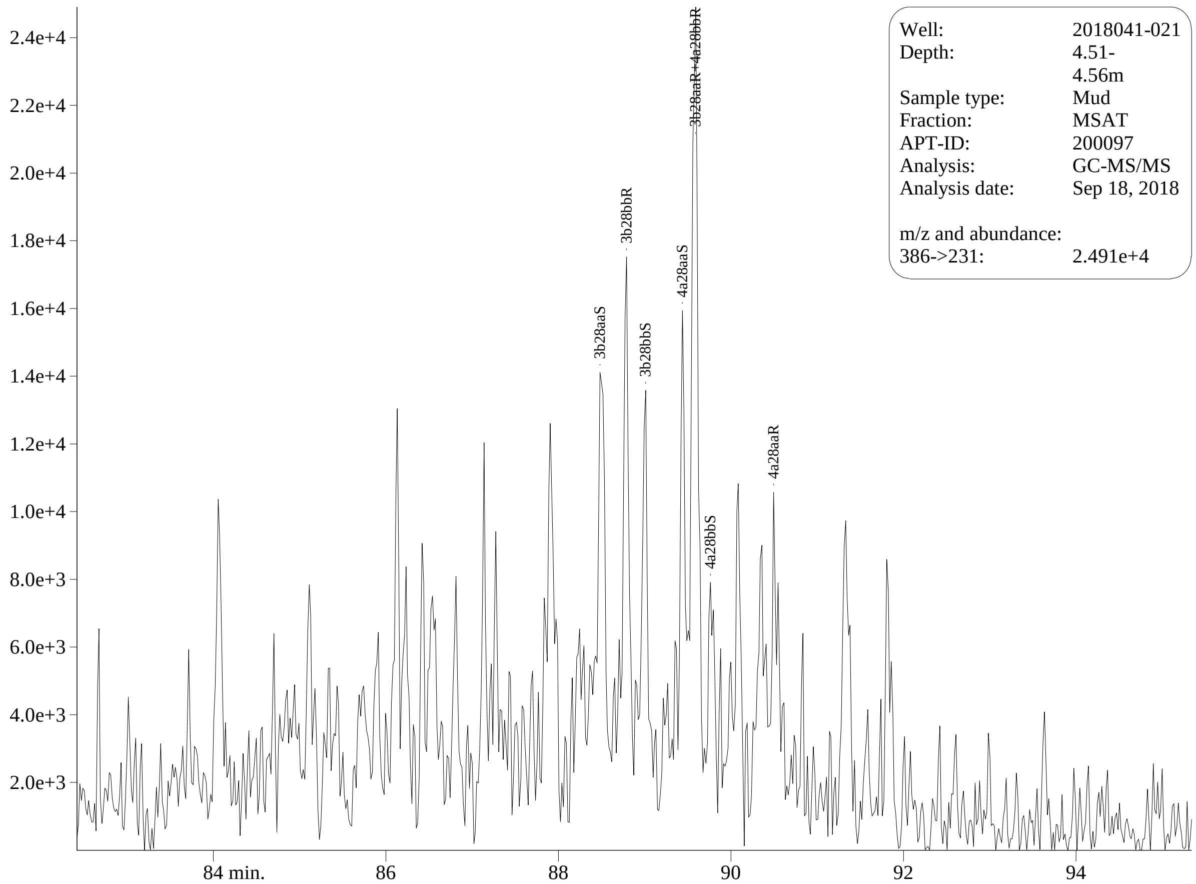
Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200097
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
276->123: 3.100e+4
Rim
20/3
2.8e+4
2.4e+4
2.0e+4
1.6e+4
1.2e+4
8.0e+3
4.0e+3
52 min.
54
56
58
60
62
64
66
68
70


5.0e+4
4.5e+4
4.0e+4
3.5e+4
3.0e+4
2.5e+4
2.0e+4
1.5e+4
1.0e+4
5.0e+3
68 min.
72
76
80
84
88
24O
24L
24U
24/4
Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200097
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
330->191: 5.229e+4

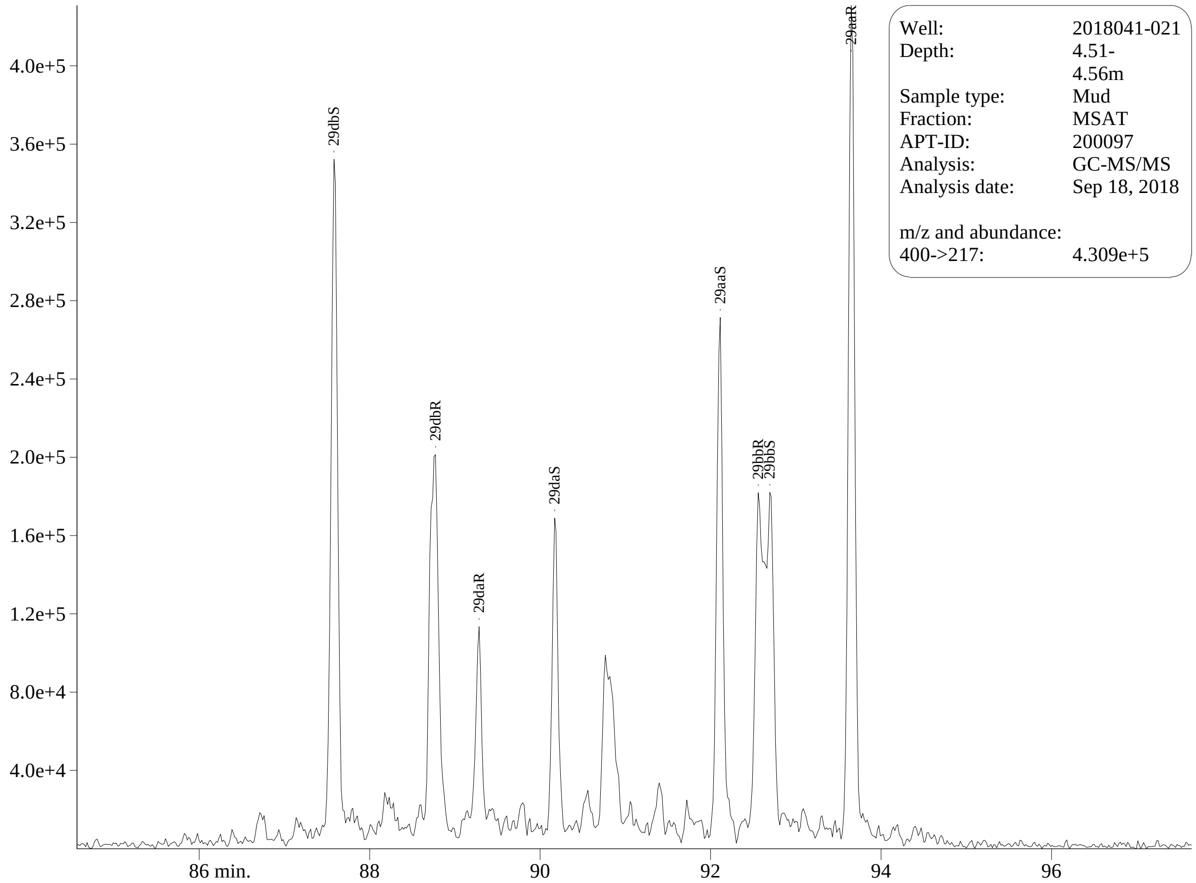

6.0e+4
5.5e+4
5.0e+4
4.5e+4
4.0e+4
3.5e+4
3.0e+4
2.5e+4
2.0e+4
1.5e+4
1.0e+4
5.0e+3
76 min.
78
80
82
84
86
88
90
24nor27dbS
24nor27dbR
27nor27dbS
27nor27dbR
24nor27aaS
24nor27bbR
27nor27aaS
27nor27bbR
27nor27bbS
27nor27aaR
Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200097
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
358->217: 6.192e+4


27dbS
27dbR
27daR
27daS
27aaS
27bbR
27bbS
27aaR
2.8e+5
2.4e+5
2.0e+5
1.6e+5
1.2e+5
8.0e+4
4.0e+4
82 min.
84
86
88
90
92
Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200097
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
372->217: 3.175e+5

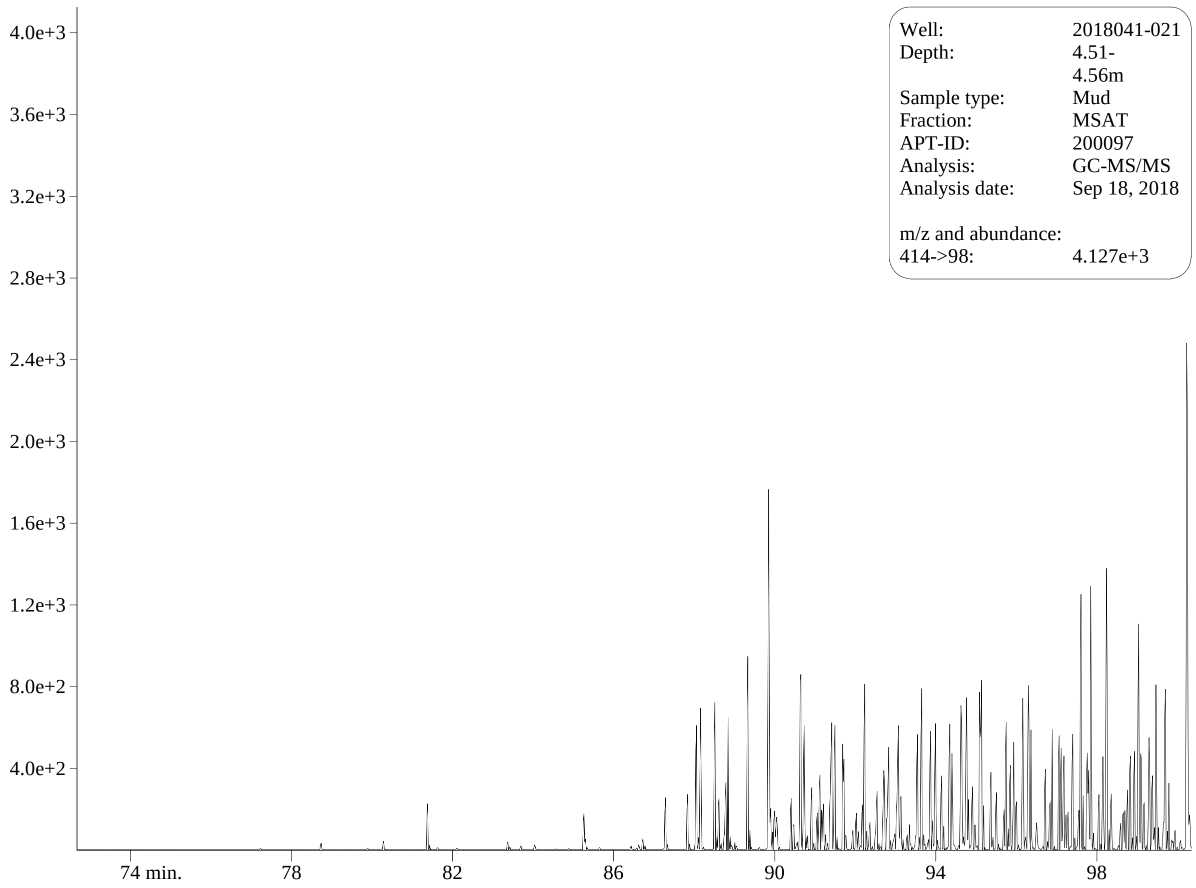

28dbS#1
28dbS#2
28dbR#1
28dbR#2
28daR
28daS
28aaS
28bbR
28bbS
28aaR
1.0e+5
9.0e+4
8.0e+4
7.0e+4
6.0e+4
5.0e+4
4.0e+4
3.0e+4
2.0e+4
1.0e+4
84 min.
86
88
90
92
94
Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200097
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
386->217: 1.034e+5

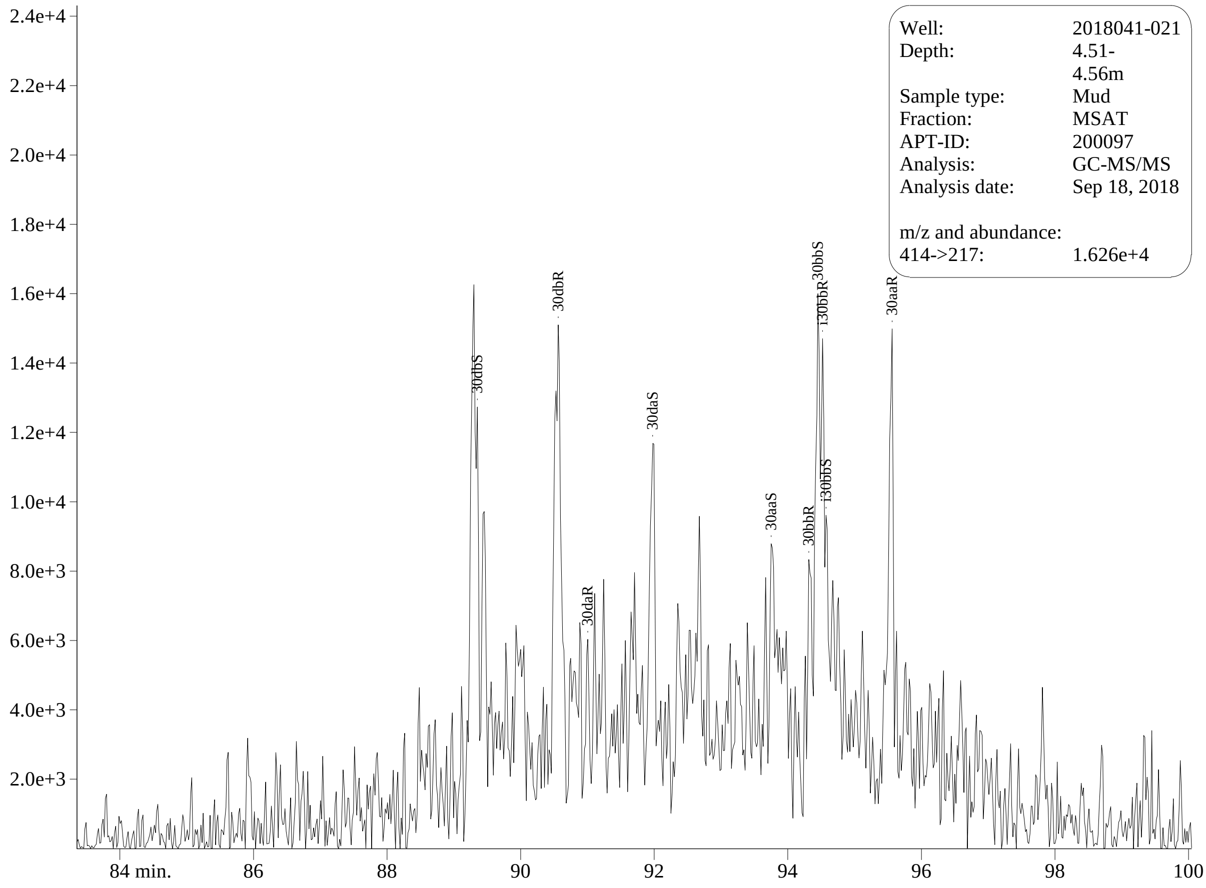


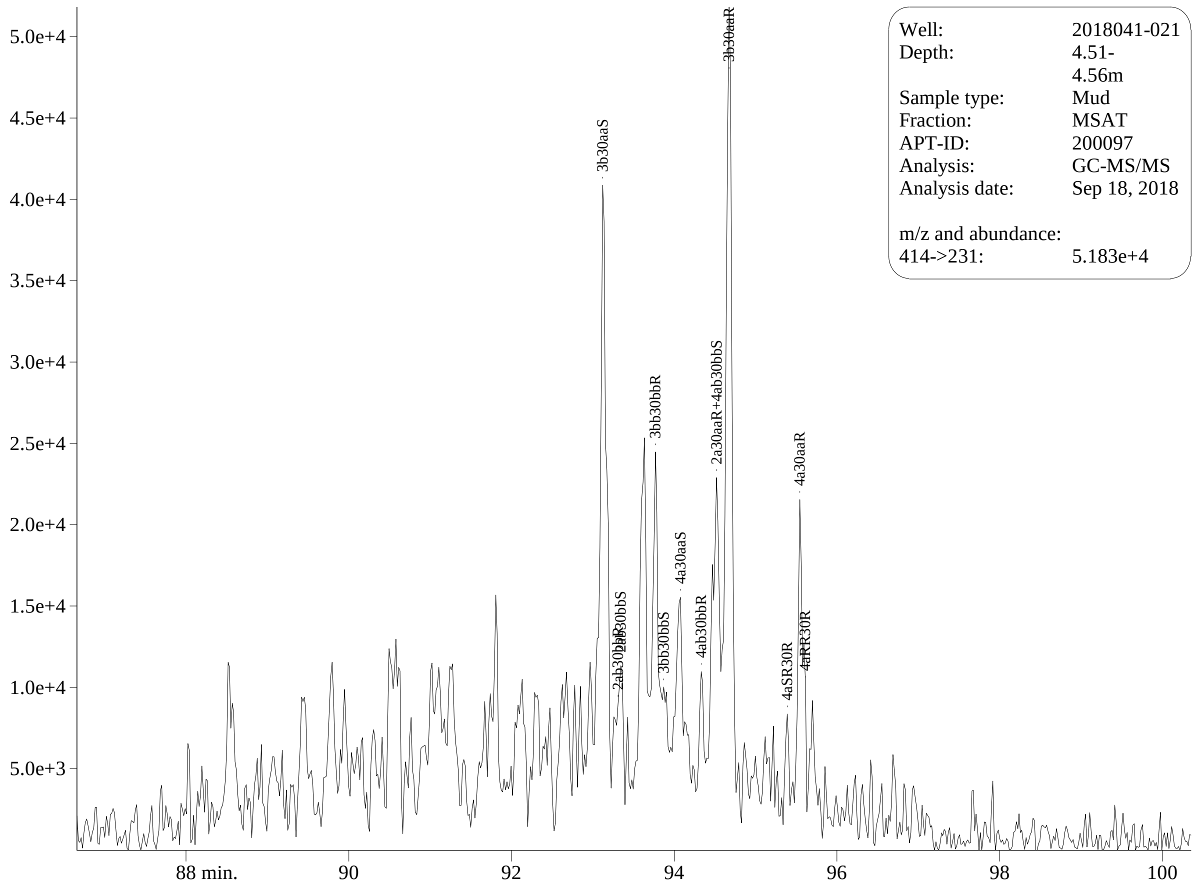
Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200097
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
386->231: 2.491e+4
3b28aaS
3b28bbR
3b28bbS
4a28aaS
3b28aaR+4a28bbR
4a28bbS
4a28aaR
2.4e+4
2.2e+4
2.0e+4
1.8e+4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
84 min.
86
88
90
92
94

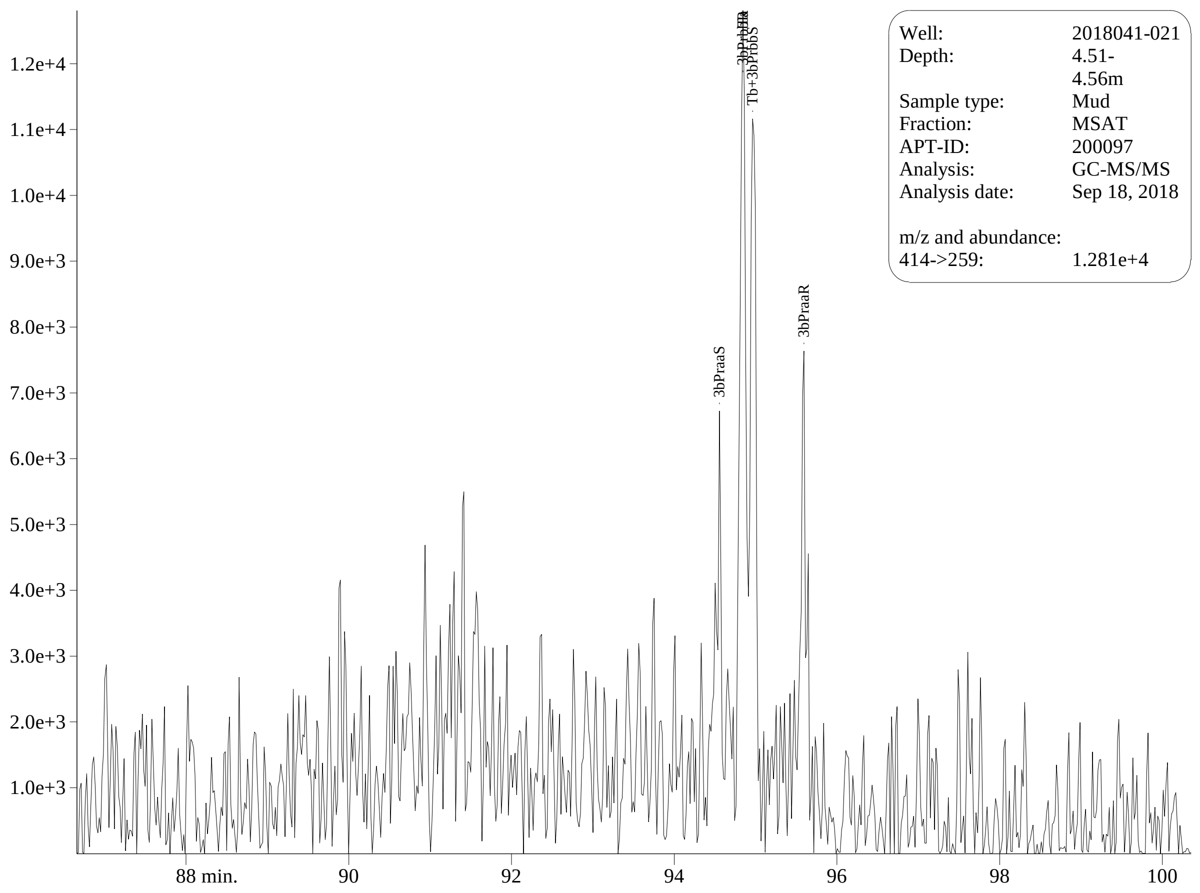


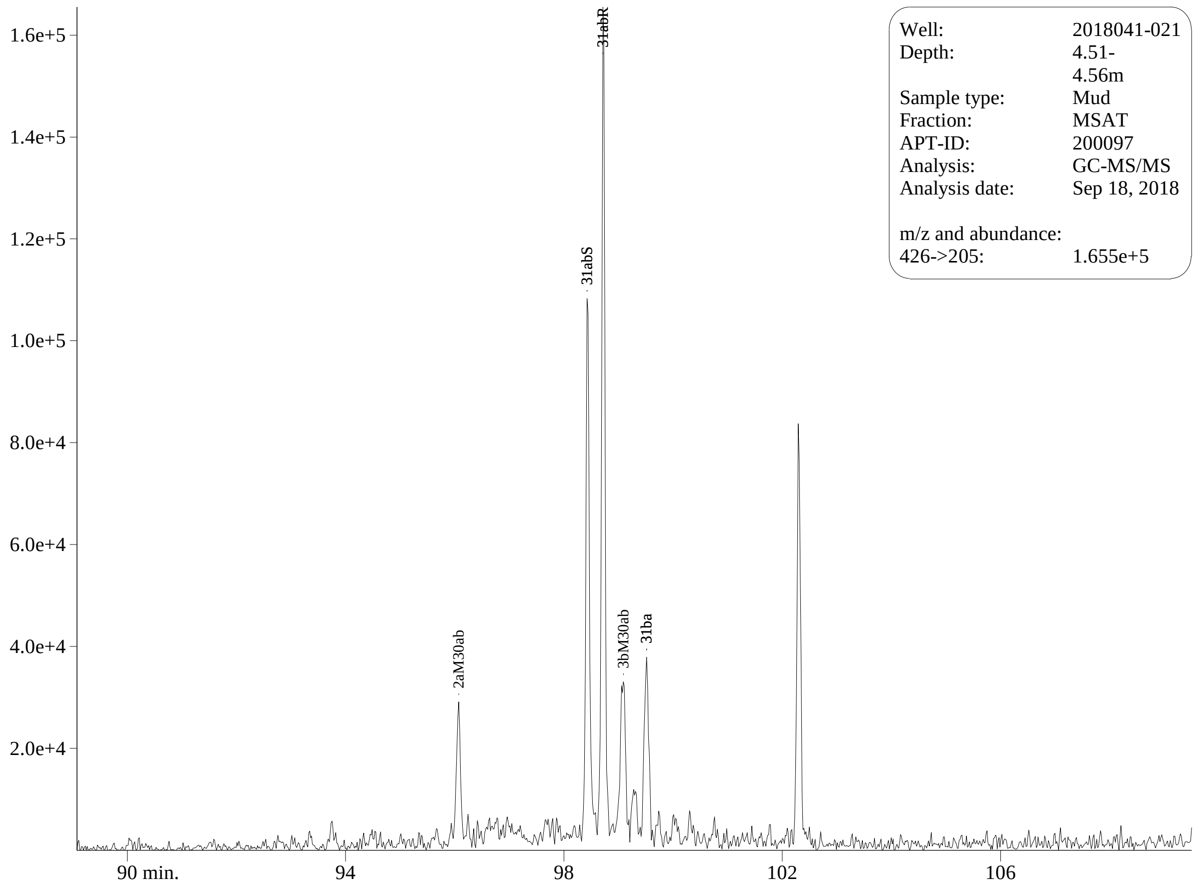
Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200097
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
400->217: 4.309e+5
29dbS
29dbR
29daR
29daS
29aaS
29bbR
29bbS
29aaR
4.0e+5
3.6e+5
3.2e+5
2.8e+5
2.4e+5
2.0e+5
1.6e+5
1.2e+5
8.0e+4
4.0e+4
86 min.
88
90
92
94
96


Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200097
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->98: 4.127e+3
4.0e+3
3.6e+3
3.2e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
74 min.
78
82
86
90
94
98

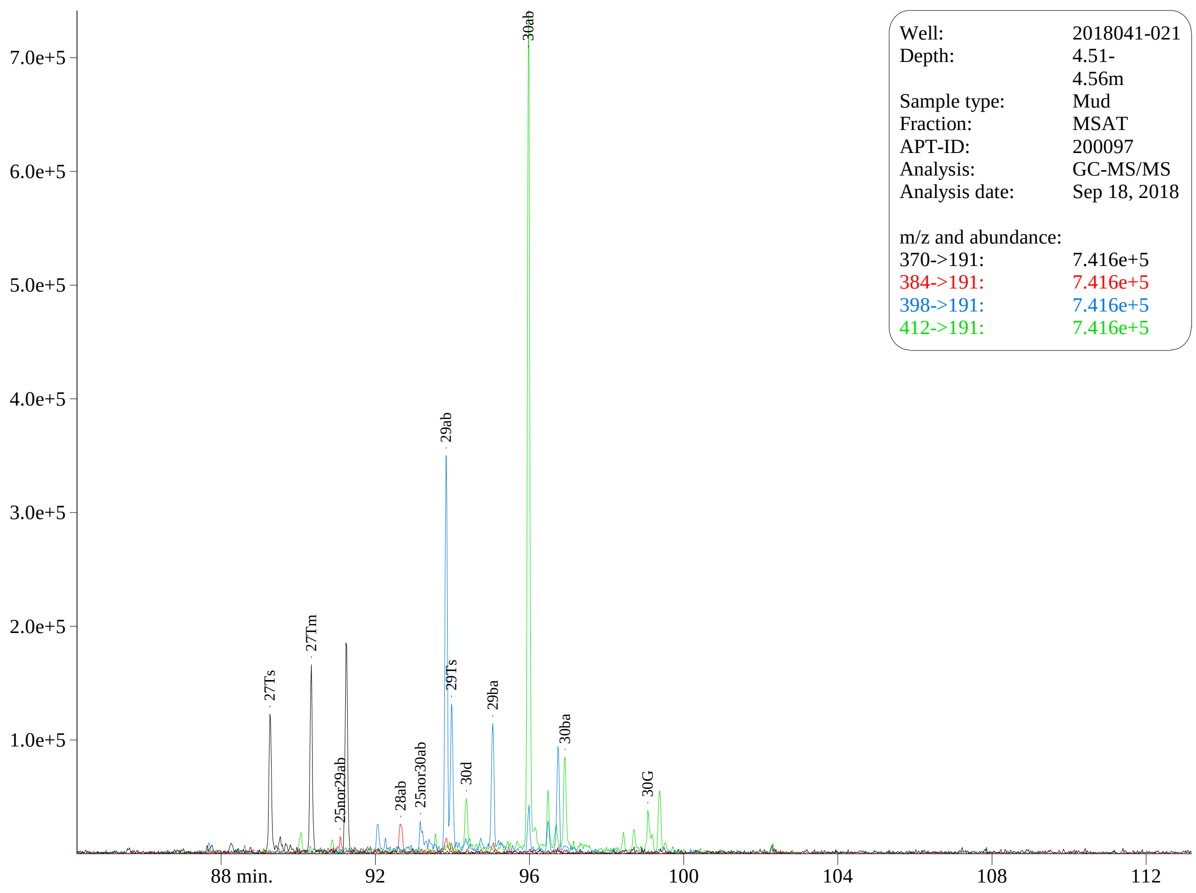

Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200097
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->217: 1.626e+4
30dbS
30dbR
30daR
30daS
30aaS
30bbR
i30bbR
30bbS
i30bbS
30aaR
2.4e+4
2.2e+4
2.0e+4
1.8e+4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
84 min.
86
88
90
92
94
96
98
100


Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200097
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->231: 5.183e+4
3b30aaR
3b30aaS
3bb30bbR
2a30aaR+4ab30bbS
4a30aaR
4a30aaS
2ab30bbS
3bb30bbS
4ab30bbR
4aSR30R
88 min.
90
92
94
96
98
100

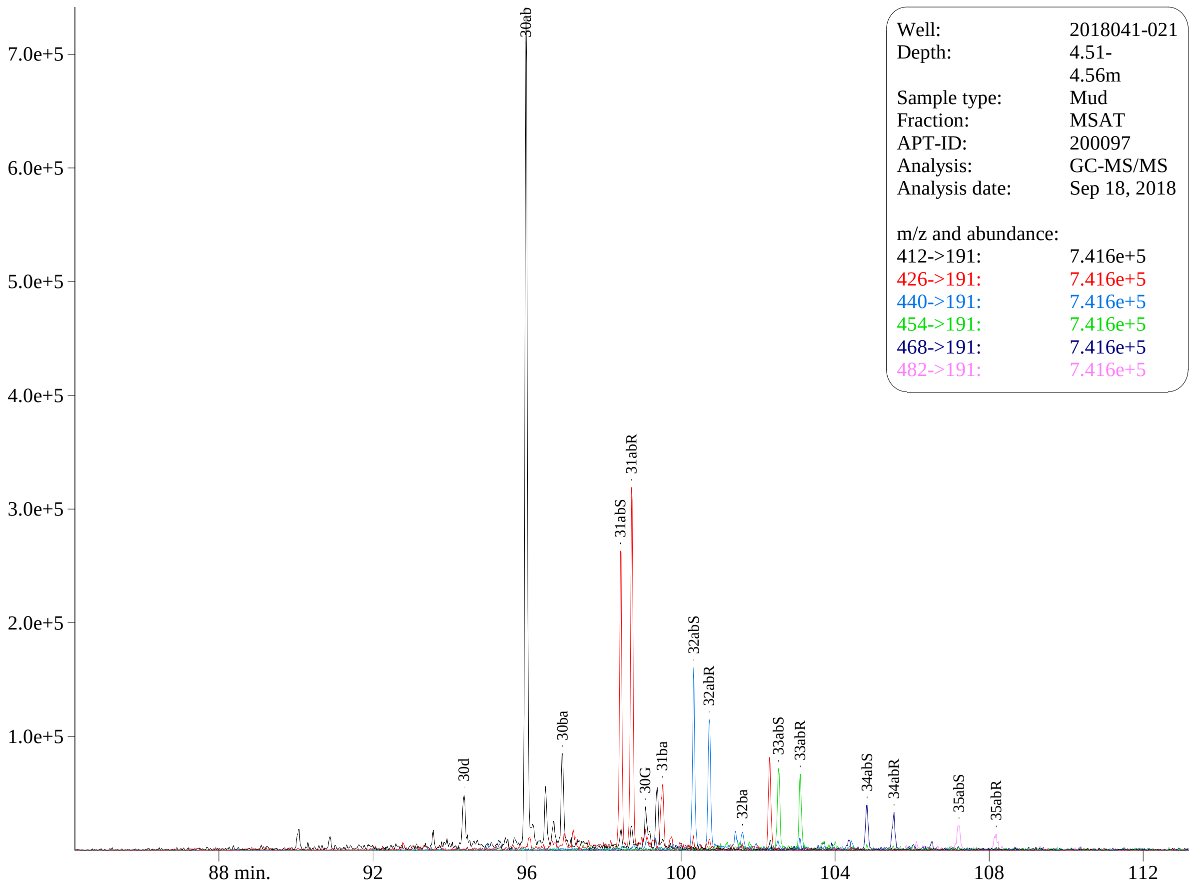

Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200097
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->259: 1.281e+4
Tb+3bPrbbS
3bPraaR
3bPraaS
88 min.
90
92
94
96
98
100

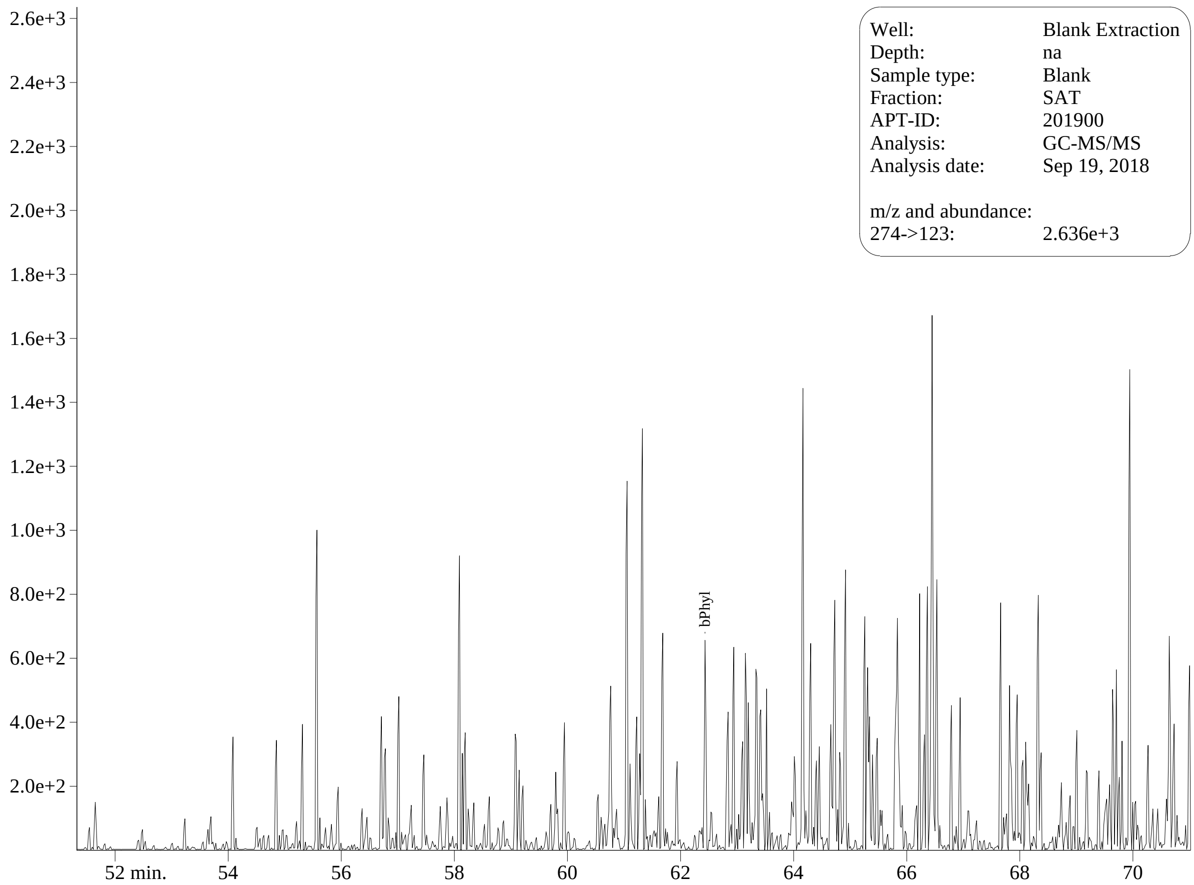


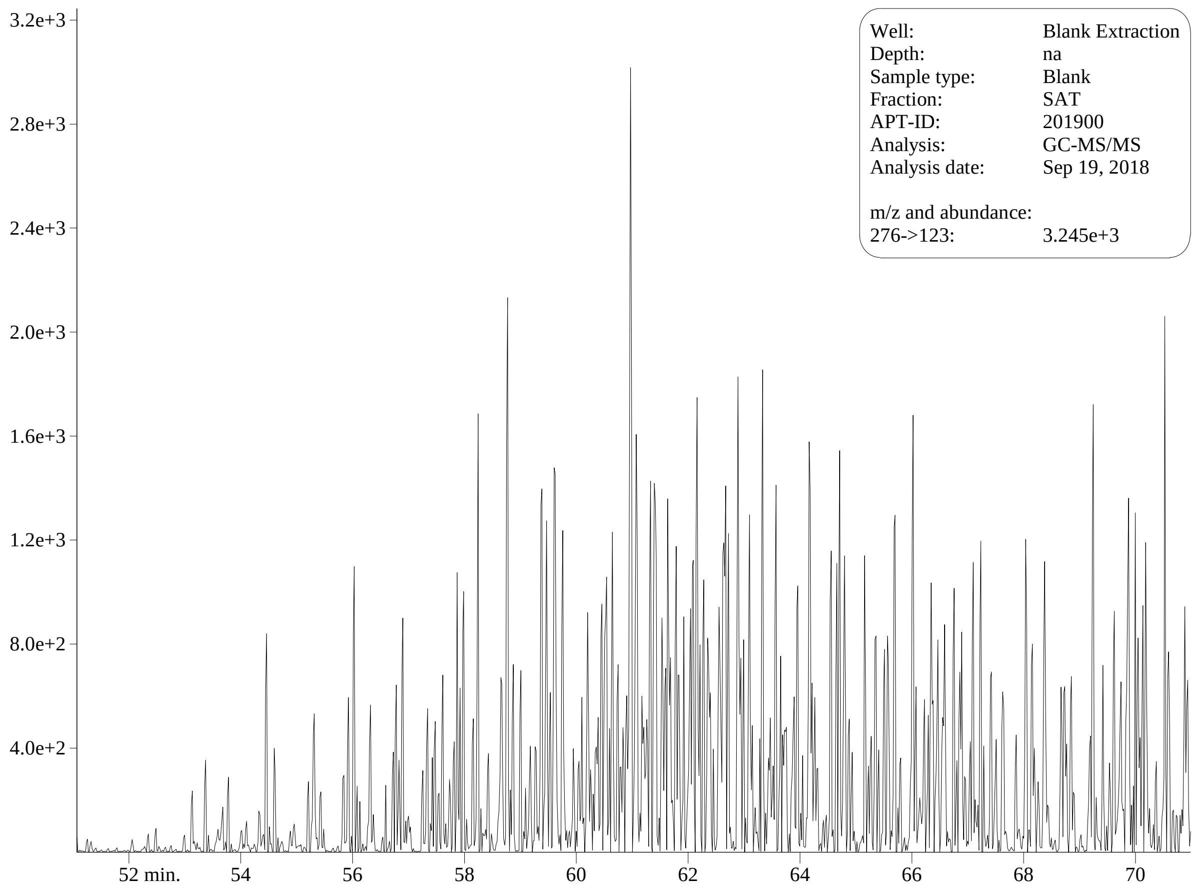
Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200097
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
426->205: 1.655e+5
31abR
31abS
2aM30ab
3bM30ab
31ba
1.6e+5
1.4e+5
1.2e+5
1.0e+5
8.0e+4
6.0e+4
4.0e+4
2.0e+4
90 min.
94
98
102
106

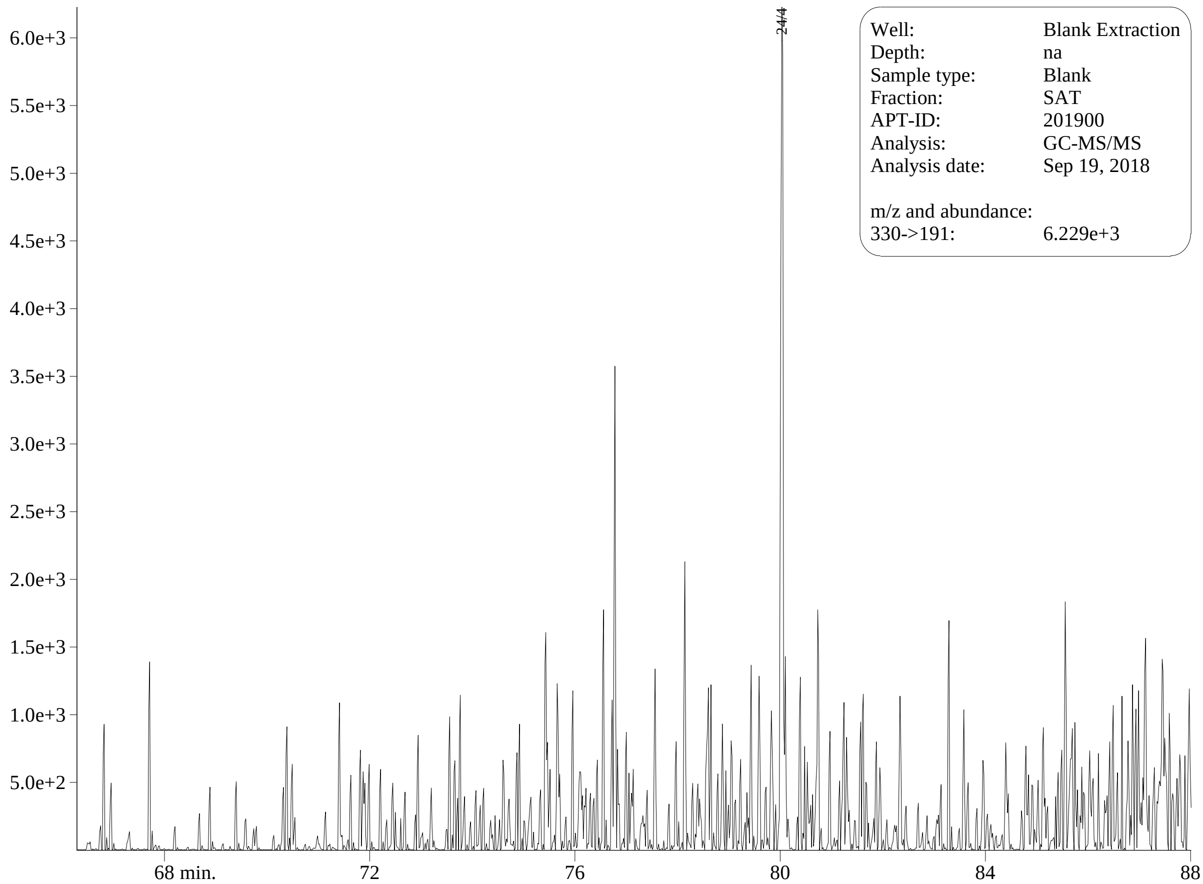


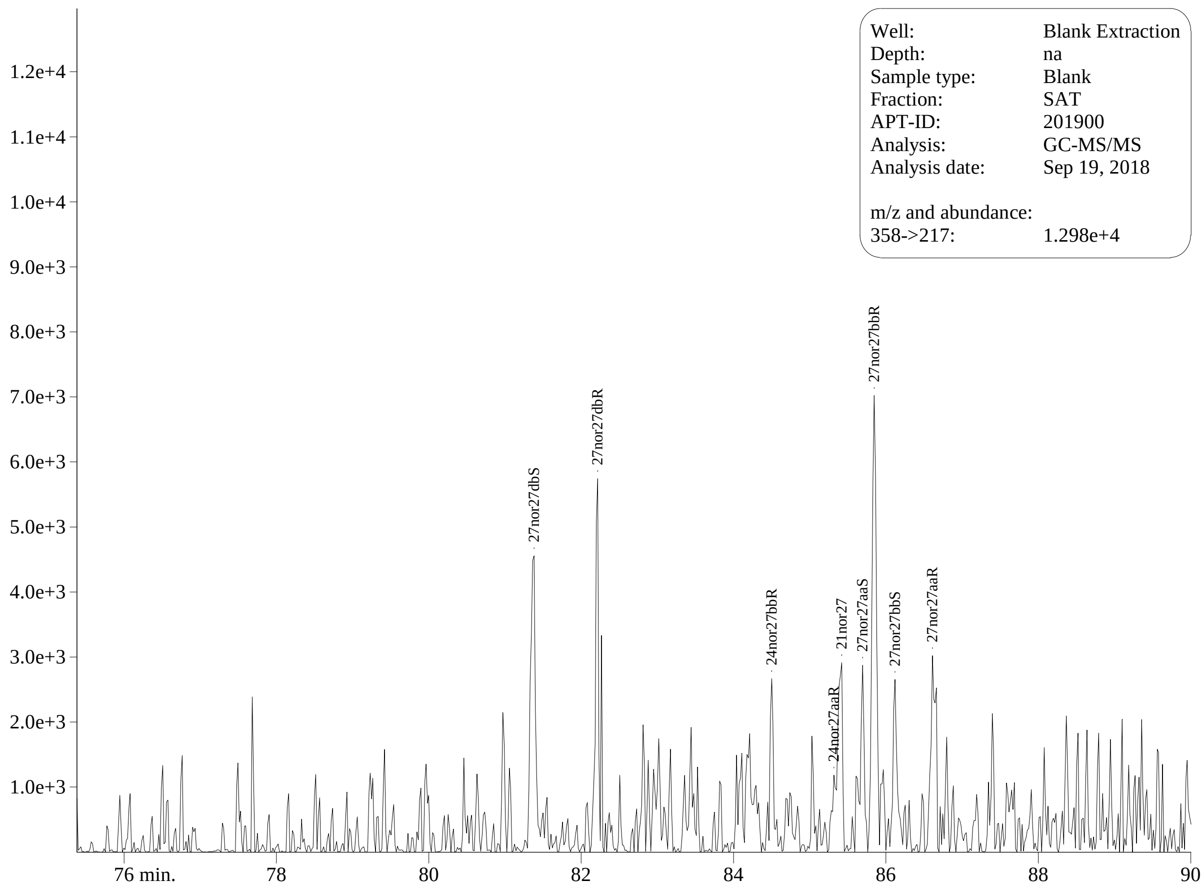
Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200097
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
370->191: 7.416e+5
384->191: 7.416e+5
398->191: 7.416e+5
412->191: 7.416e+5
30ab
29ab
27Ts
27Tm
25nor29ab
28ab
25nor30ab
29Ts
30d
29ba
30ba
30G
7.0e+5
6.0e+5
5.0e+5
4.0e+5
3.0e+5
2.0e+5
1.0e+5
88 min.
92
96
100
104
108
112

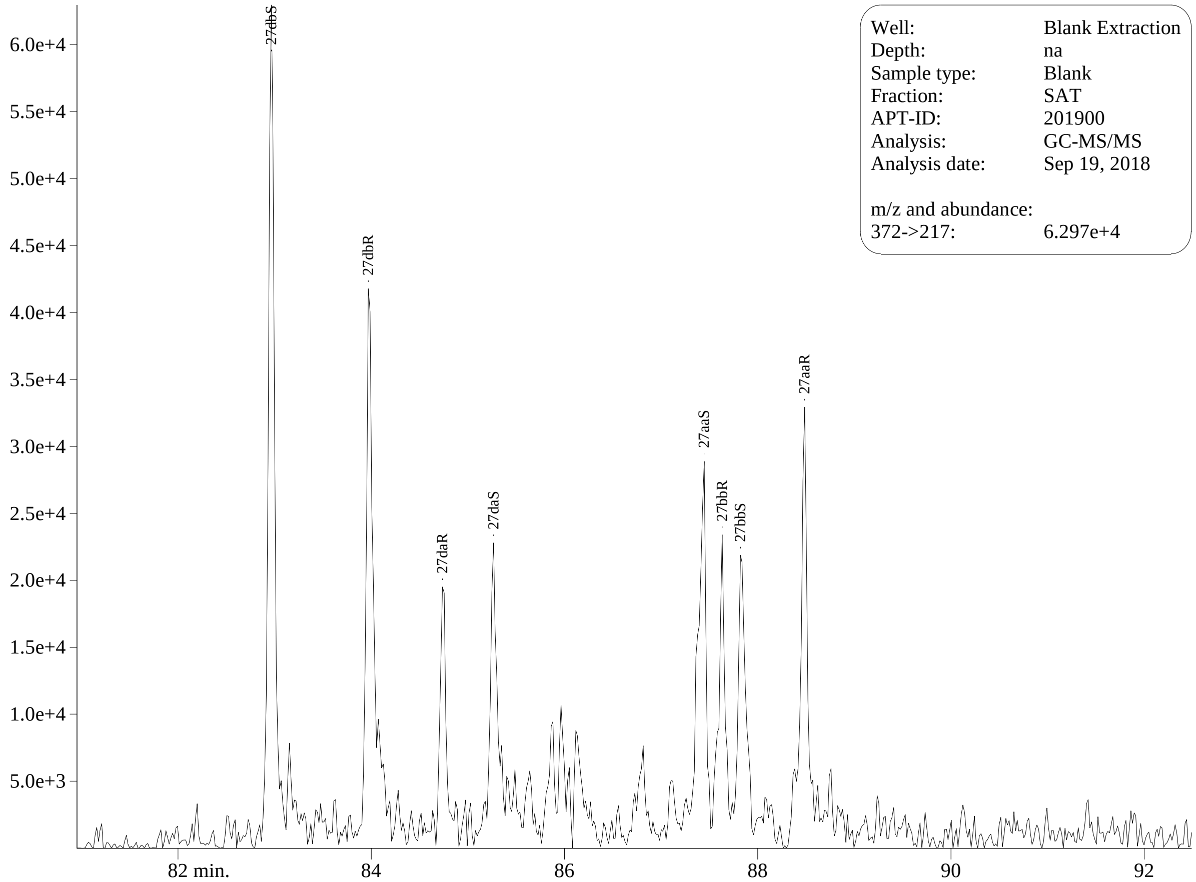

Well: 2018041-021
Depth: 4.51-4.56m
Sample type: Mud
Fraction: MSAT
APT-ID: 200097
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
412->191: 7.416e+5
426->191: 7.416e+5
440->191: 7.416e+5
454->191: 7.416e+5
468->191: 7.416e+5
482->191: 7.416e+5
30ab
31abR
31abS
32abS
32abR
30ba
33abS
33abR
31ba
30G
30d
34abS
34abR
32ba
35abS
35abR
7.0e+5
6.0e+5
5.0e+5
4.0e+5
3.0e+5
2.0e+5
1.0e+5
88 min.
92
96
100
104
108
112


Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-MS/MS
Analysis date: Sep 19, 2018
m/z and abundance:
274->123: 2.636e+3
bPhyl
2.6e+3
2.4e+3
2.2e+3
2.0e+3
1.8e+3
1.6e+3
1.4e+3
1.2e+3
1.0e+3
8.0e+2
6.0e+2
4.0e+2
2.0e+2
52 min.
54
56
58
60
62
64
66
68
70

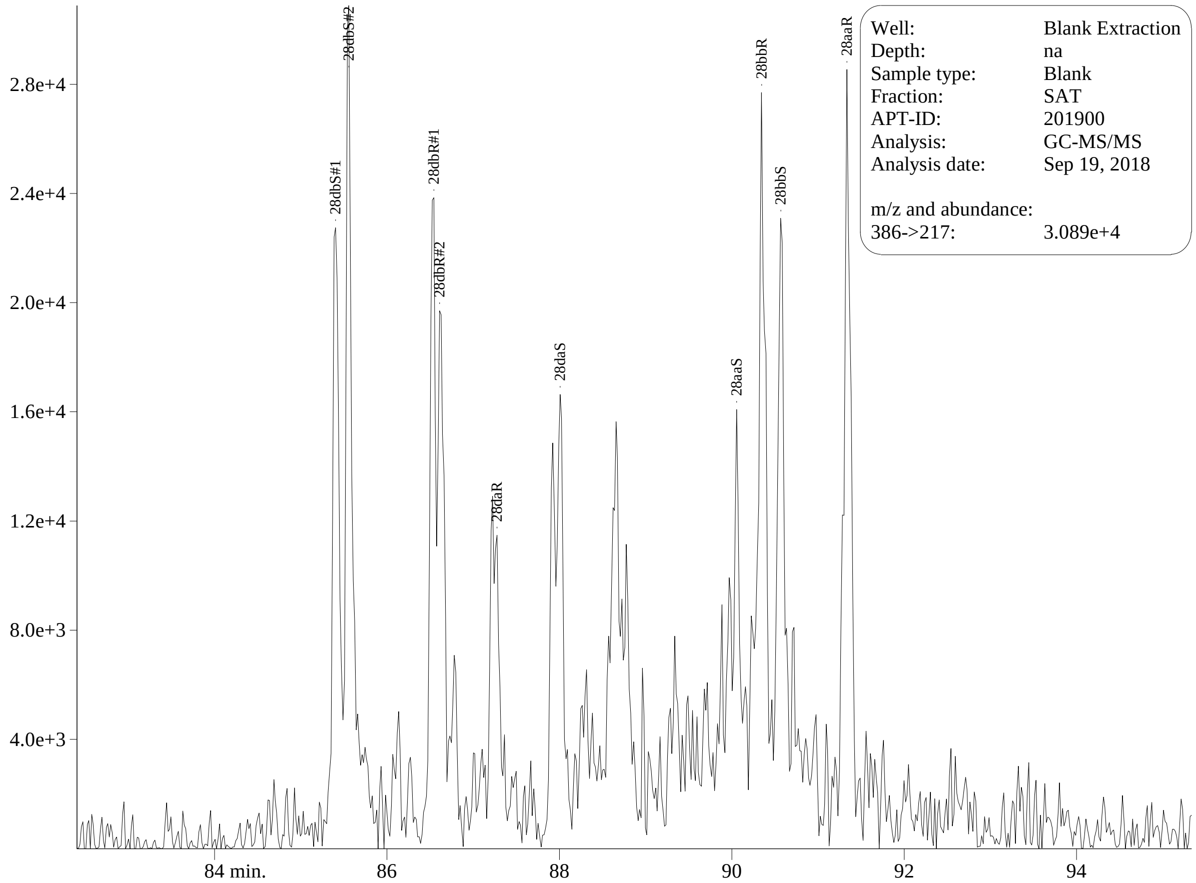

Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-MS/MS
Analysis date: Sep 19, 2018
m/z and abundance:
276->123: 3.245e+3
3.2e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
52 min.
54
56
58
60
62
64
66
68
70


6.0e+3
5.5e+3
5.0e+3
4.5e+3
4.0e+3
3.5e+3
3.0e+3
2.5e+3
2.0e+3
1.5e+3
1.0e+3
5.0e+2
68 min.
72
76
80
84
88
24/4
Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-MS/MS
Analysis date: Sep 19, 2018
m/z and abundance:
330->191: 6.229e+3

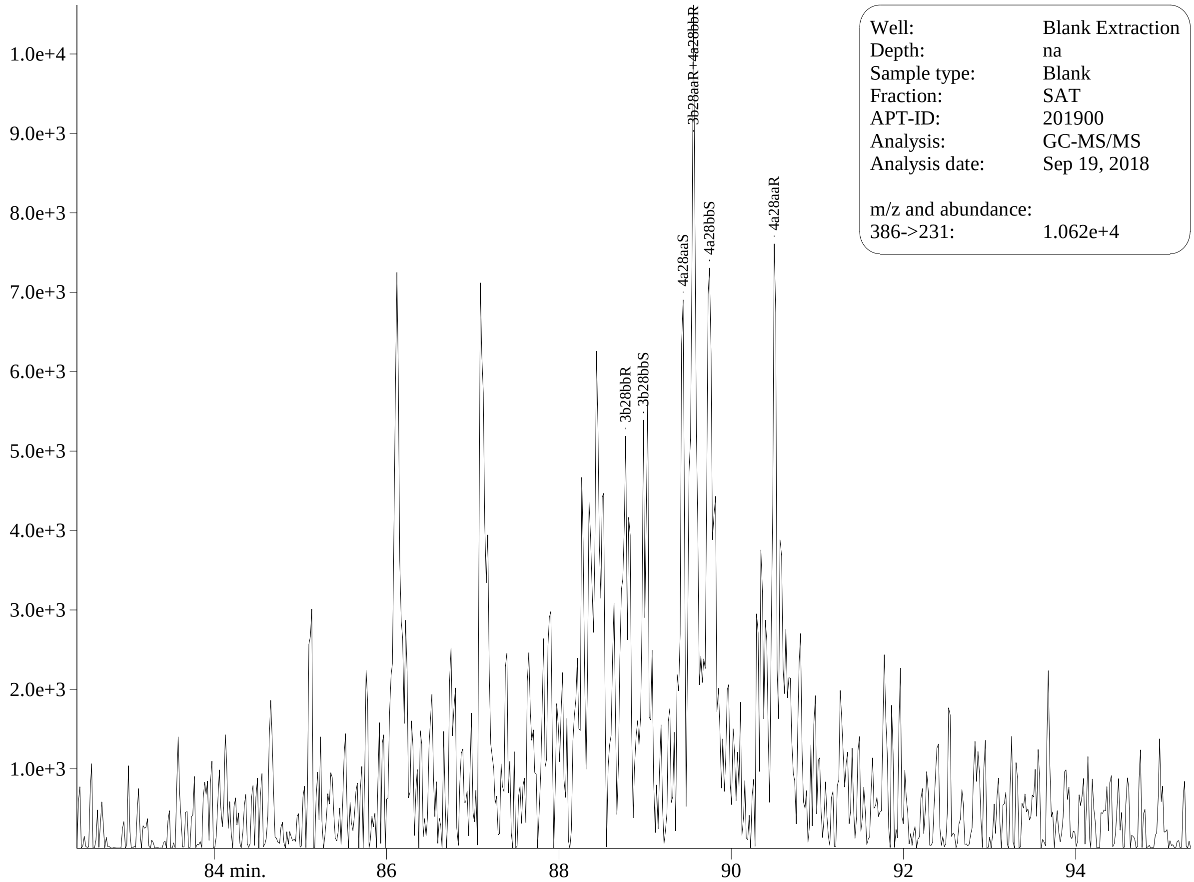

1.2e+4
1.1e+4
1.0e+4
9.0e+3
8.0e+3
7.0e+3
6.0e+3
5.0e+3
4.0e+3
3.0e+3
2.0e+3
1.0e+3
76 min.
78
80
82
84
86
88
90
27nor27dbS
27nor27dbR
24nor27bbR
24nor27aaR
21nor27
27nor27aaS
27nor27bbR
27nor27bbS
27nor27aaR
Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-MS/MS
Analysis date: Sep 19, 2018
m/z and abundance:
358->217: 1.298e+4

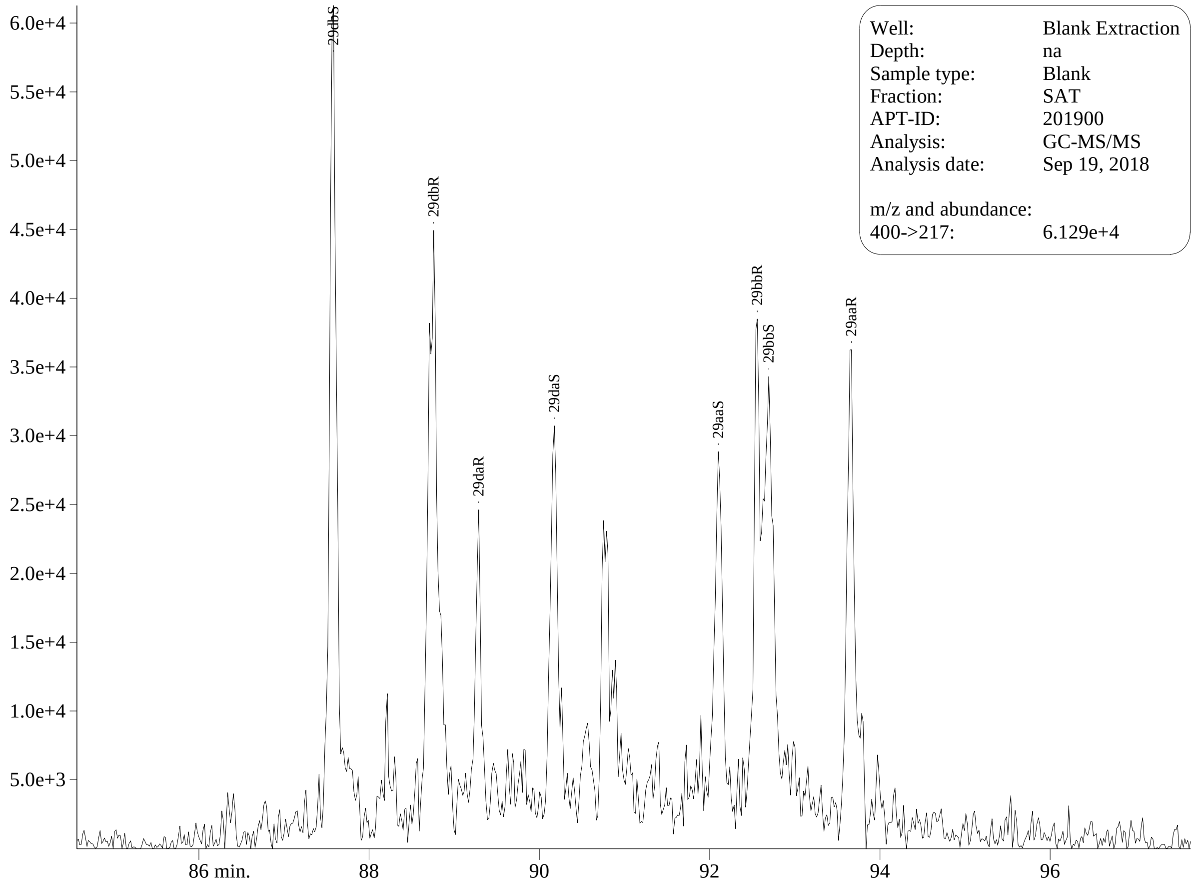


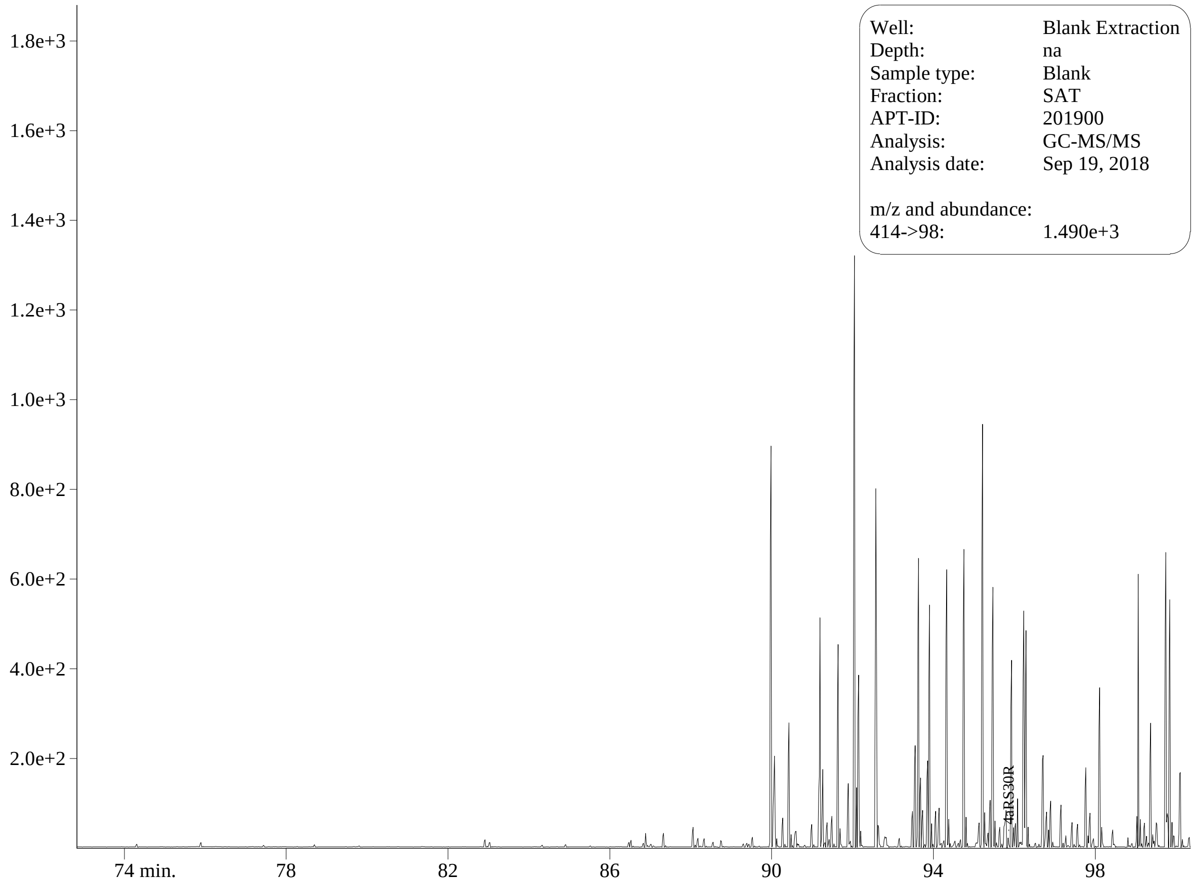
Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-MS/MS
Analysis date: Sep 19, 2018
m/z and abundance:
372->217: 6.297e+4
27dbS
27dbR
27daR
27daS
27aaS
27bbR
27bbS
27aaR
6.0e+4
5.5e+4
5.0e+4
4.5e+4
4.0e+4
3.5e+4
3.0e+4
2.5e+4
2.0e+4
1.5e+4
1.0e+4
5.0e+3
82 min.
84
86
88
90
92



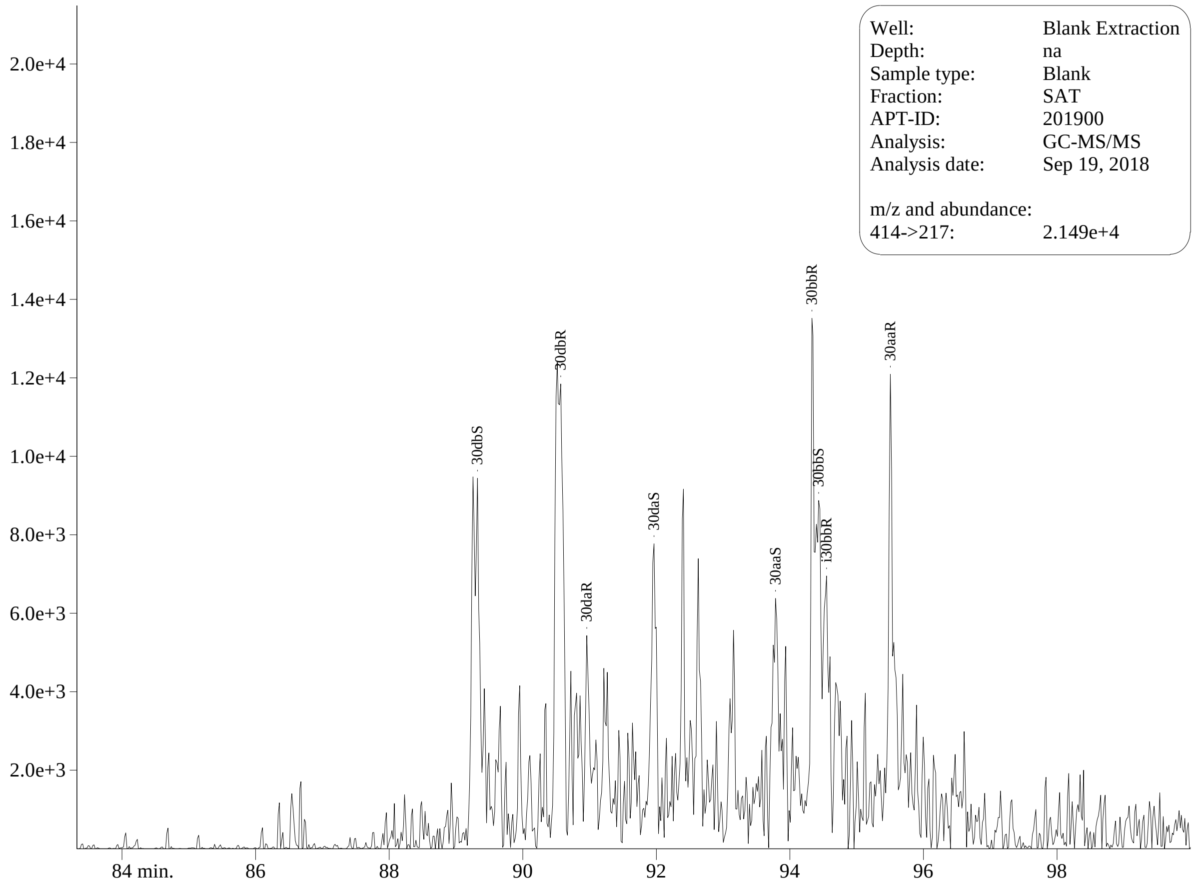
Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-MS/MS
Analysis date: Sep 19, 2018
m/z and abundance:
386->217: 3.089e+4
28dbS#1
28dbS#2
28dbR#1
28dbR#2
28daR
28daS
28aaS
28bbR
28bbS
28aaR
2.8e+4
2.4e+4
2.0e+4
1.6e+4
1.2e+4
8.0e+3
4.0e+3
84 min.
86
88
90
92
94


Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-MS/MS
Analysis date: Sep 19, 2018
m/z and abundance:
386->231: 1.062e+4
3b28aaR+4a28bbR
4a28aaS
4a28bbS
4a28aaR
3b28bbR
3b28bbS
1.0e+4
9.0e+3
8.0e+3
7.0e+3
6.0e+3
5.0e+3
4.0e+3
3.0e+3
2.0e+3
1.0e+3
84 min.
86
88
90
92
94

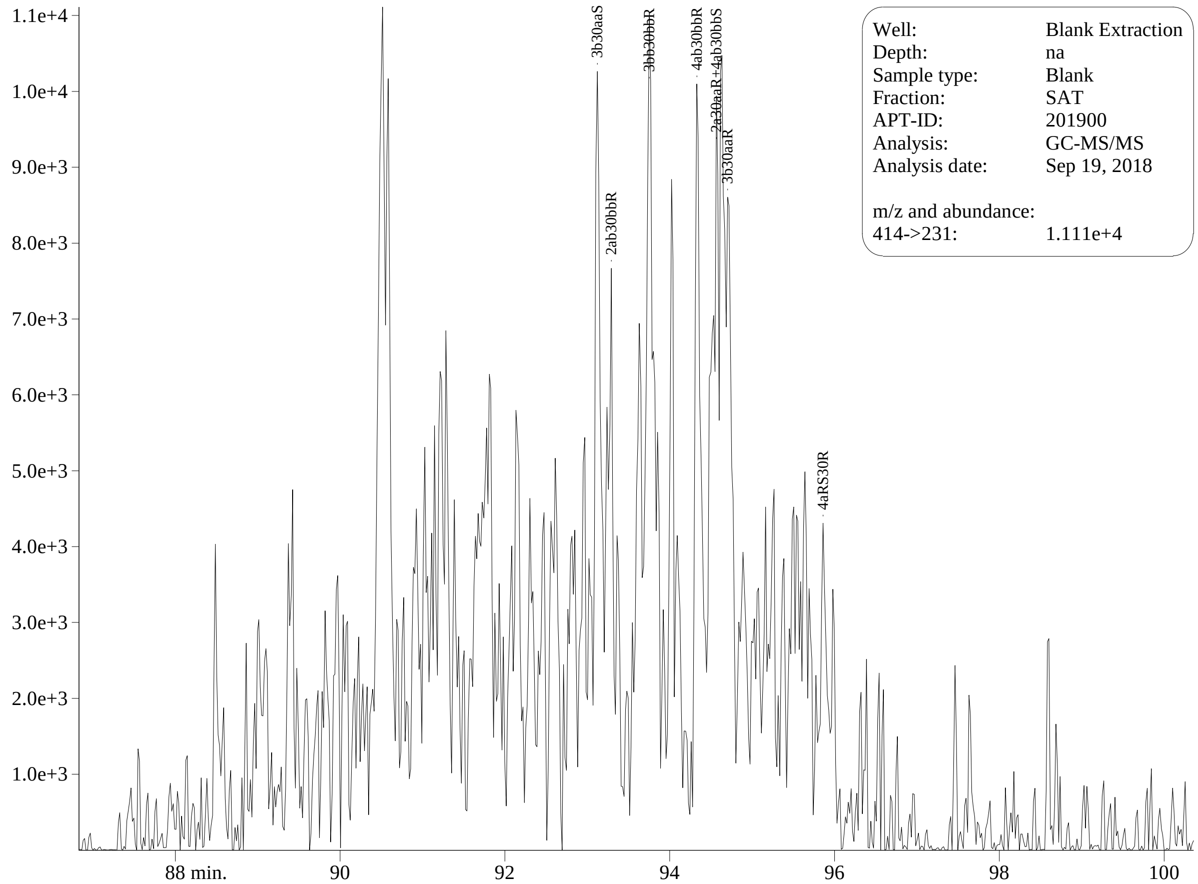

Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-MS/MS
Analysis date: Sep 19, 2018
m/z and abundance:
400->217: 6.129e+4
29dbS
29dbR
29daR
29daS
29aaS
29bbR
29bbS
29aaR
6.0e+4
5.5e+4
5.0e+4
4.5e+4
4.0e+4
3.5e+4
3.0e+4
2.5e+4
2.0e+4
1.5e+4
1.0e+4
5.0e+3
86 min.
88
90
92
94
96



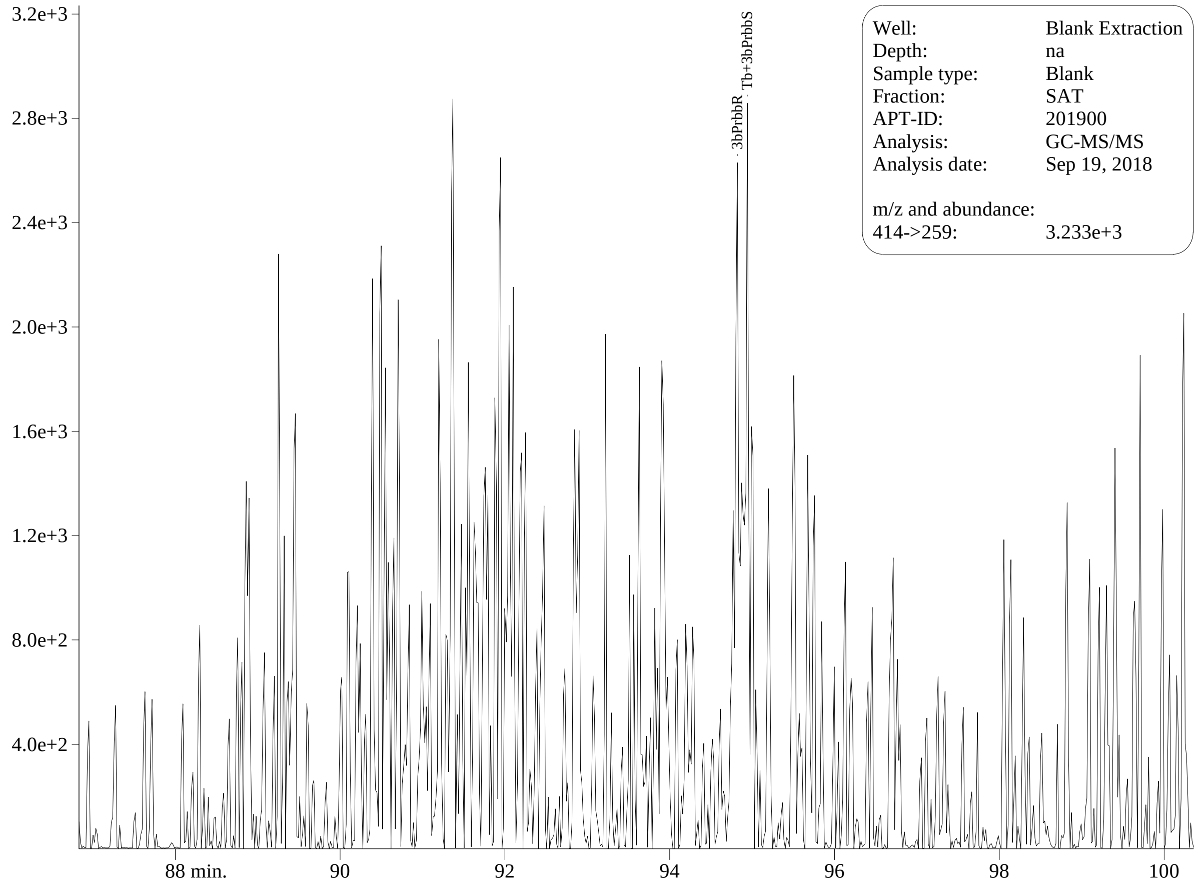
Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-MS/MS
Analysis date: Sep 19, 2018
m/z and abundance:
414->98: 1.490e+3
4aRS30R
1.8e+3
1.6e+3
1.4e+3
1.2e+3
1.0e+3
8.0e+2
6.0e+2
4.0e+2
2.0e+2
74 min.
78
82
86
90
94
98



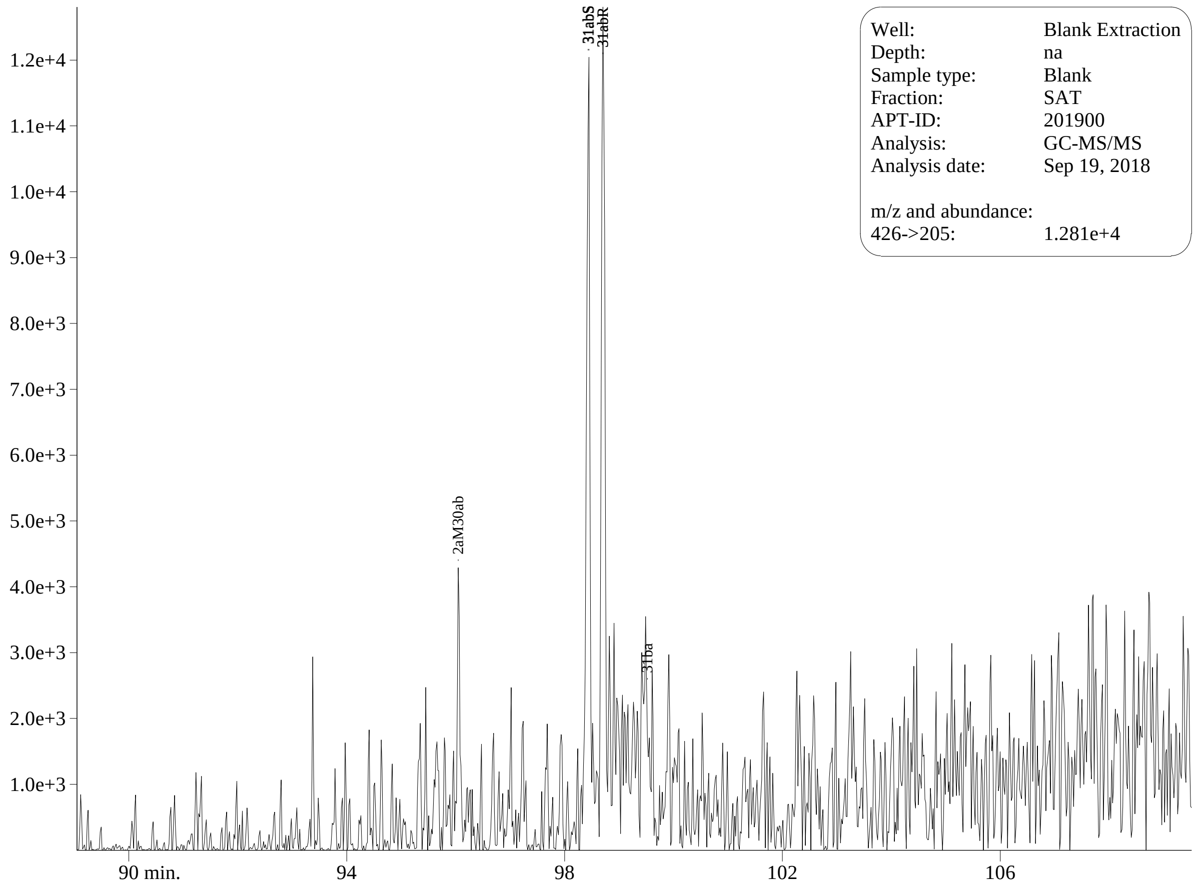
Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-MS/MS
Analysis date: Sep 19, 2018
m/z and abundance:
414->217: 2.149e+4
30dbS
30dbR
30daR
30daS
30aaS
30bbR
30bbS
i30bbR
30aaR
2.0e+4
1.8e+4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
84 min.
86
88
90
92
94
96
98

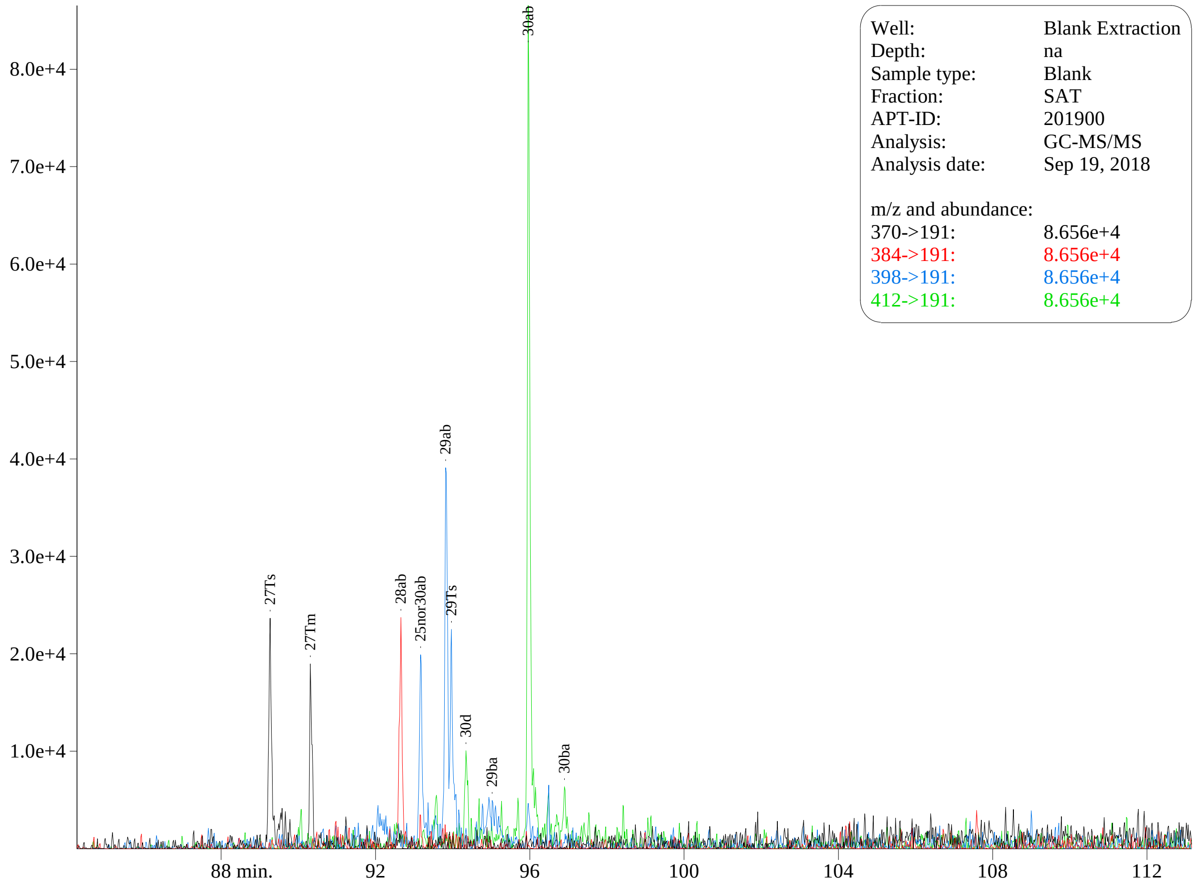


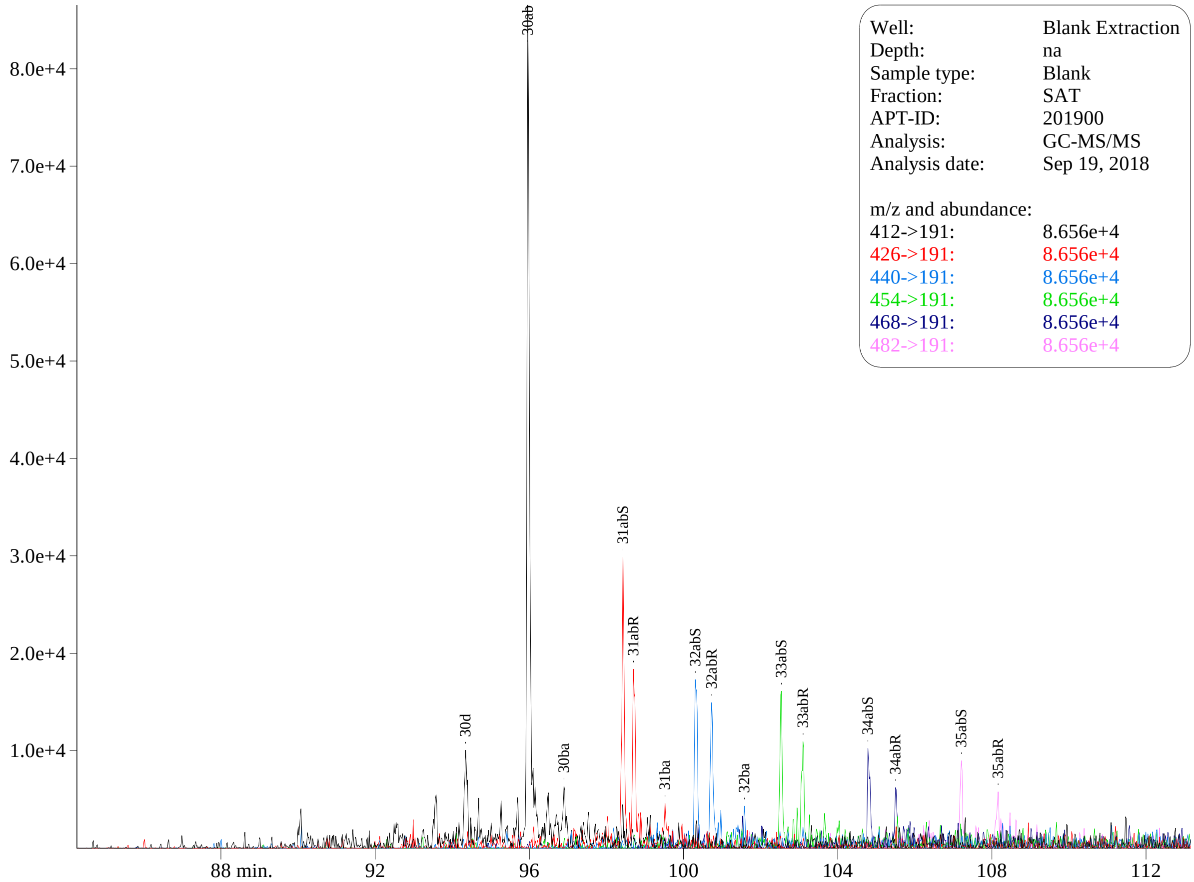
1.1e+4
1.0e+4
9.0e+3
8.0e+3
7.0e+3
6.0e+3
5.0e+3
4.0e+3
3.0e+3
2.0e+3
1.0e+3
88 min.
90
92
94
96
98
100
3b30aaS
2ab30bbR
3bb30bbR
4ab30bbR
2a30aaR+4ab30bbS
3b30aaR
4aRS30R
Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-MS/MS
Analysis date: Sep 19, 2018
m/z and abundance:
414->231: 1.111e+4



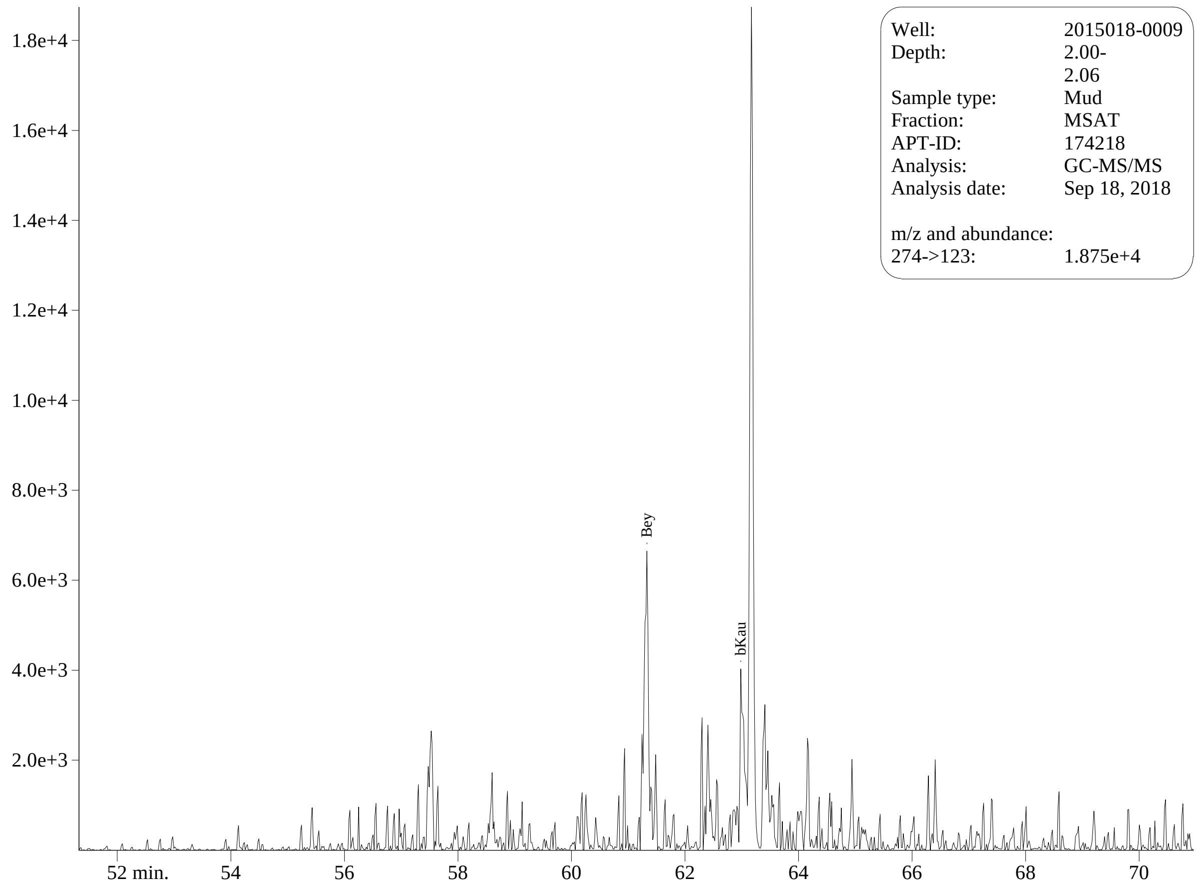
3.2e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
88 min.
90
92
94
96
98
100
3bPrbbR
Tb+3bPrbbS
Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-MS/MS
Analysis date: Sep 19, 2018
m/z and abundance:
414->259: 3.233e+3

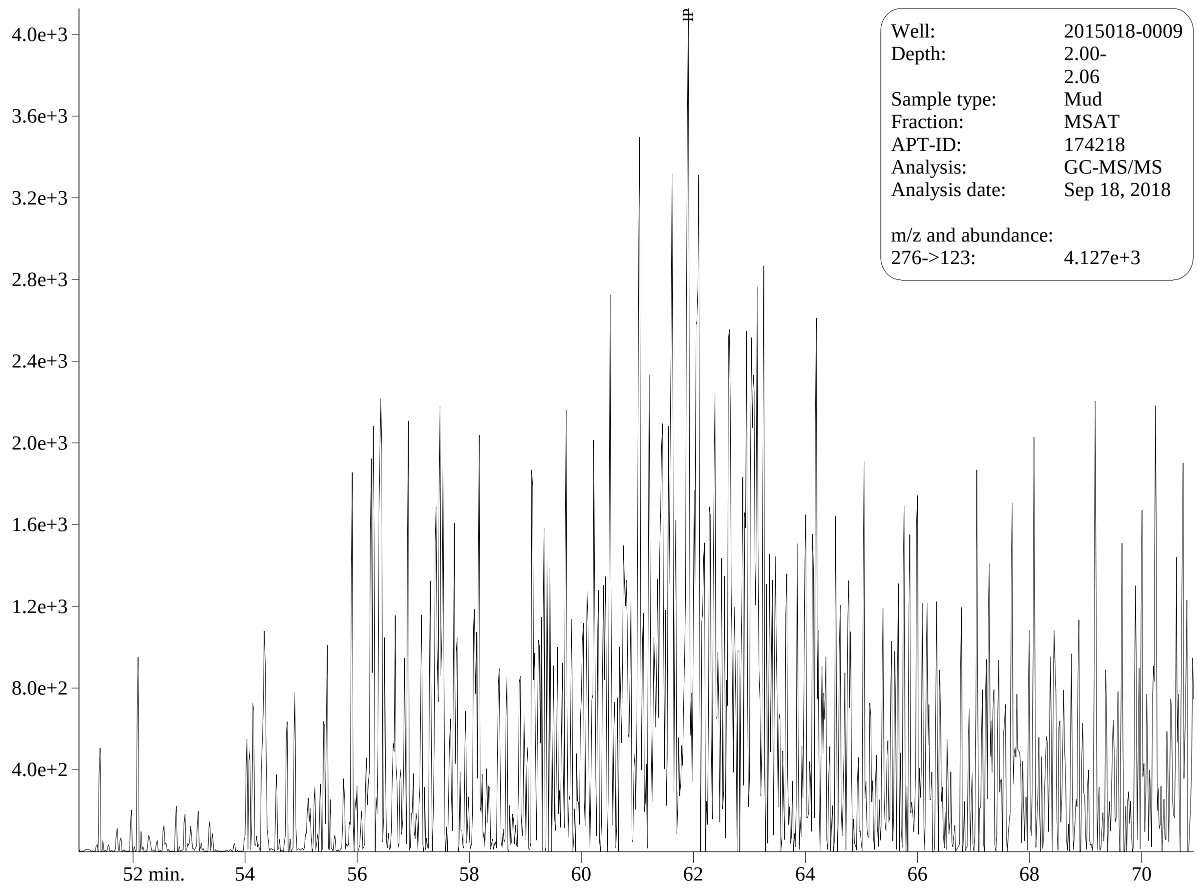

Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-MS/MS
Analysis date: Sep 19, 2018
m/z and abundance:
426->205: 1.281e+4
31abS
31abR
2aM30ab
31ba
1.2e+4
1.1e+4
1.0e+4
9.0e+3
8.0e+3
7.0e+3
6.0e+3
5.0e+3
4.0e+3
3.0e+3
2.0e+3
1.0e+3
90 min.
94
98
102
106

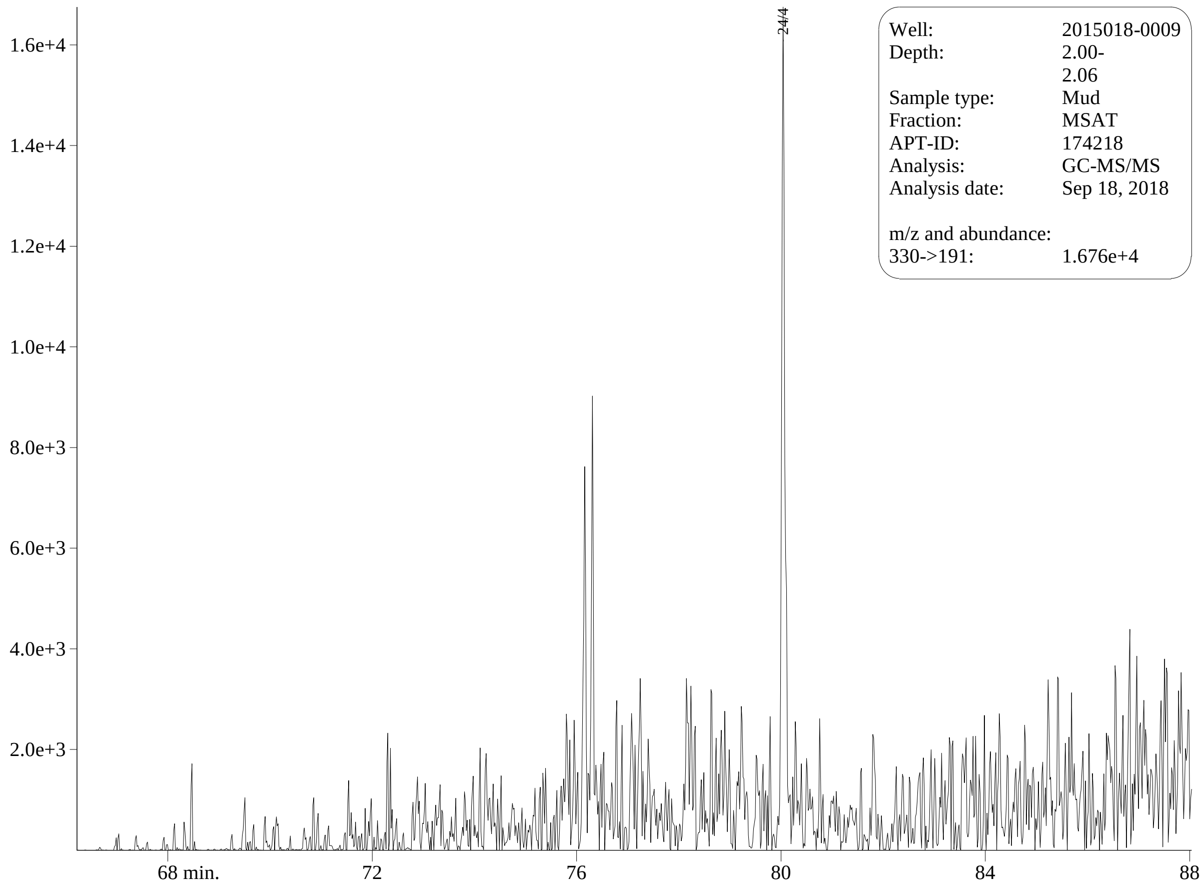

Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-MS/MS
Analysis date: Sep 19, 2018
m/z and abundance:
370->191: 8.656e+4
384->191: 8.656e+4
398->191: 8.656e+4
412->191: 8.656e+4
30ab
29ab
27Ts
27Tm
28ab
25nor30ab
29Ts
30d
29ba
30ba
8.0e+4
7.0e+4
6.0e+4
5.0e+4
4.0e+4
3.0e+4
2.0e+4
1.0e+4
88 min.
92
96
100
104
108
112



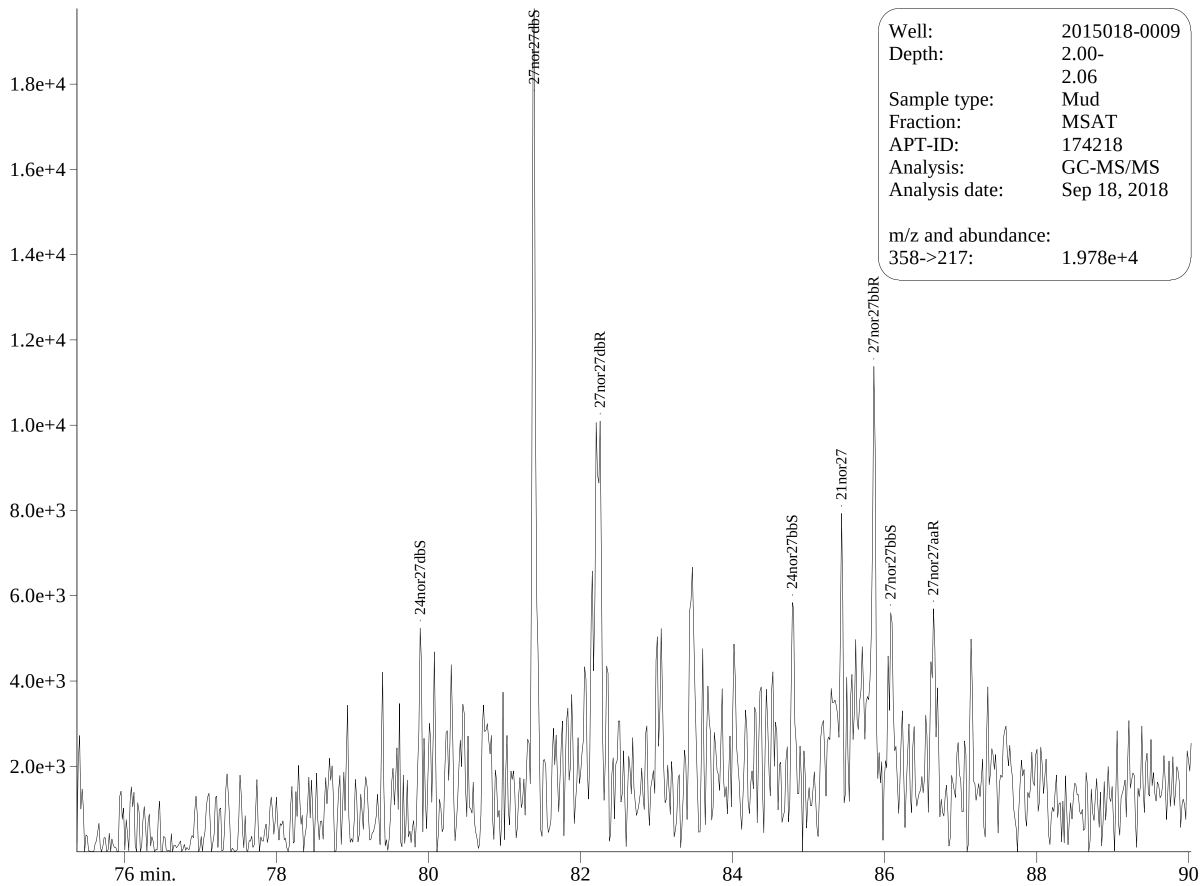
Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-MS/MS
Analysis date: Sep 19, 2018
m/z and abundance:
412->191: 8.656e+4
426->191: 8.656e+4
440->191: 8.656e+4
454->191: 8.656e+4
468->191: 8.656e+4
482->191: 8.656e+4
8.0e+4
7.0e+4
6.0e+4
5.0e+4
4.0e+4
3.0e+4
2.0e+4
1.0e+4
88 min.
92
96
100
104
108
112
30ab
30d
30ba
31abS
31abR
31ba
32abS
32abR
32ba
33abS
33abR
34abS
34abR
35abS
35abR


Well: 2015018-0009
Depth: 2.00-2.06
Sample type: Mud
Fraction: MSAT
APT-ID: 174218
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
274->123: 1.875e+4
Bey
bKau
1.8e+4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
52 min.
54
56
58
60
62
64
66
68
70

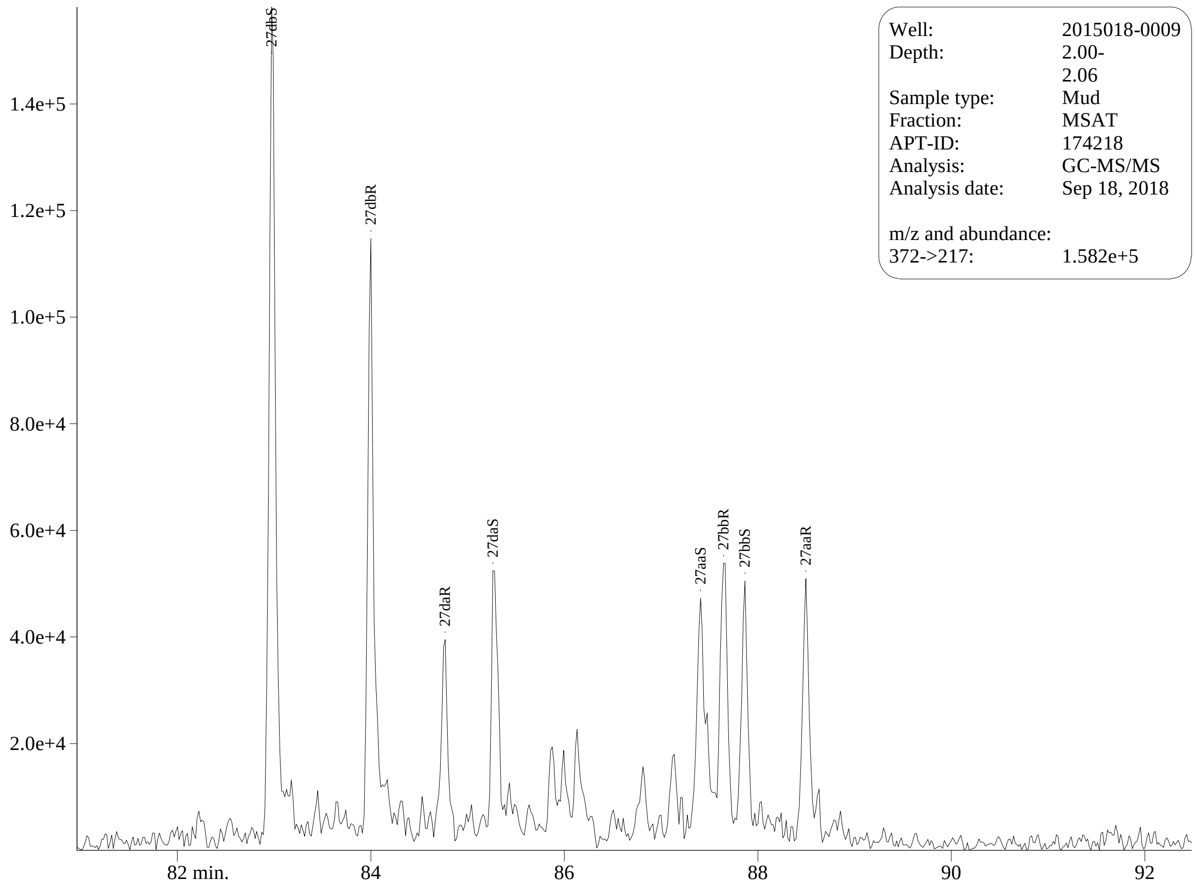

Well: 2015018-0009
Depth: 2.00-2.06
Sample type: Mud
Fraction: MSAT
APT-ID: 174218
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
276->123: 4.127e+3
4.0e+3
3.6e+3
3.2e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
52 min.
54
56
58
60
62
64
66
68
70



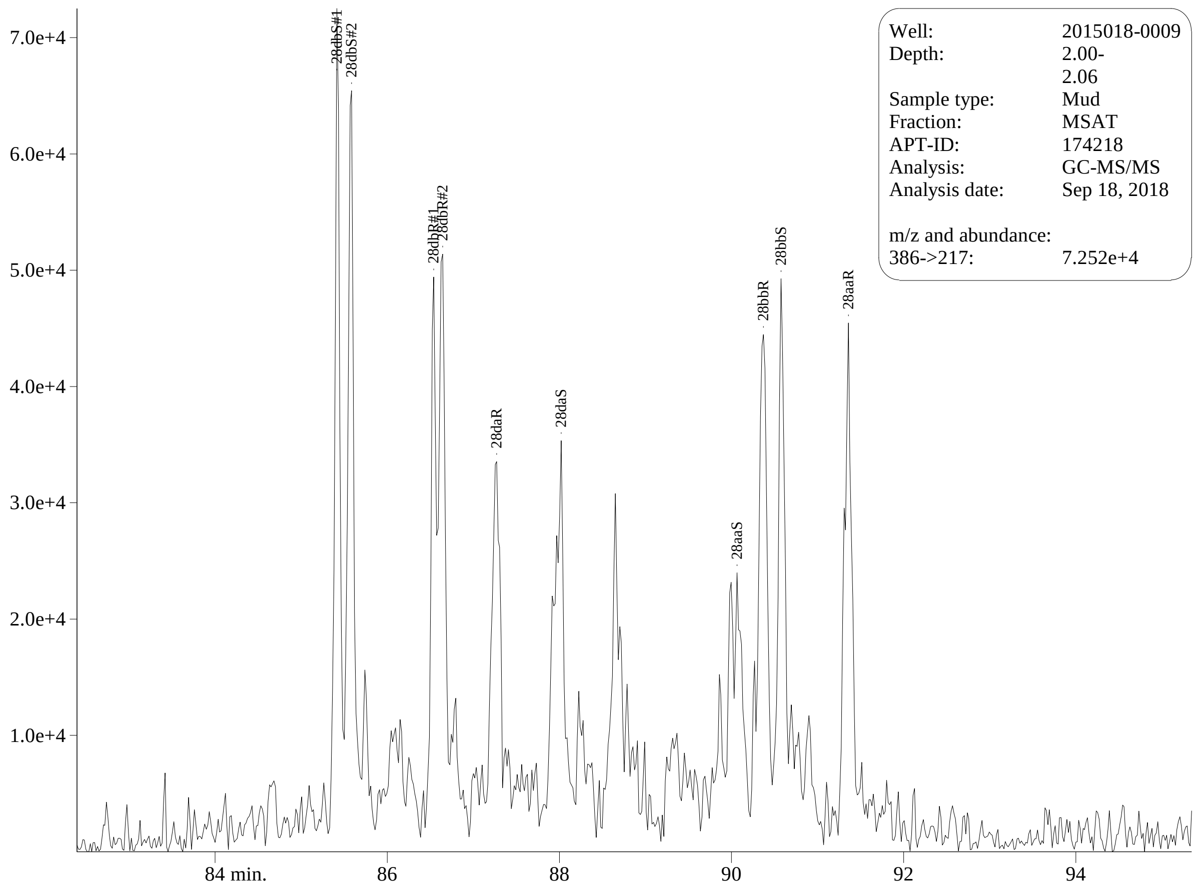
24/4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
68 min.
72
76
80
84
88
Well: 2015018-0009
Depth: 2.00-2.06
Sample type: Mud
Fraction: MSAT
APT-ID: 174218
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
330->191: 1.676e+4



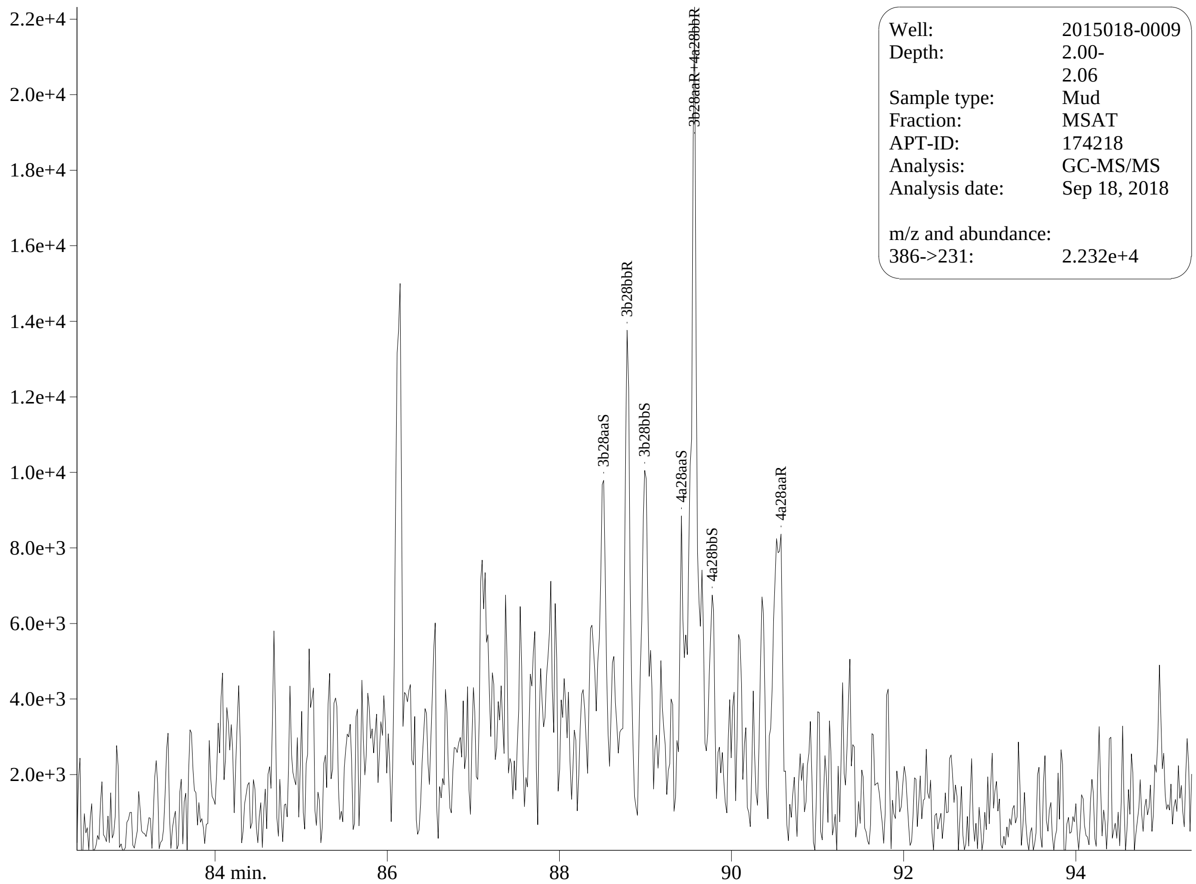
27nor27dbS
27nor27dbR
27nor27bbR
21nor27
24nor27dbS
24nor27bbS
27nor27bbS
27nor27aaR
1.8e+4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
76 min.
78
80
82
84
86
88
90
Well: 2015018-0009
Depth: 2.00-2.06
Sample type: Mud
Fraction: MSAT
APT-ID: 174218
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
358->217: 1.978e+4



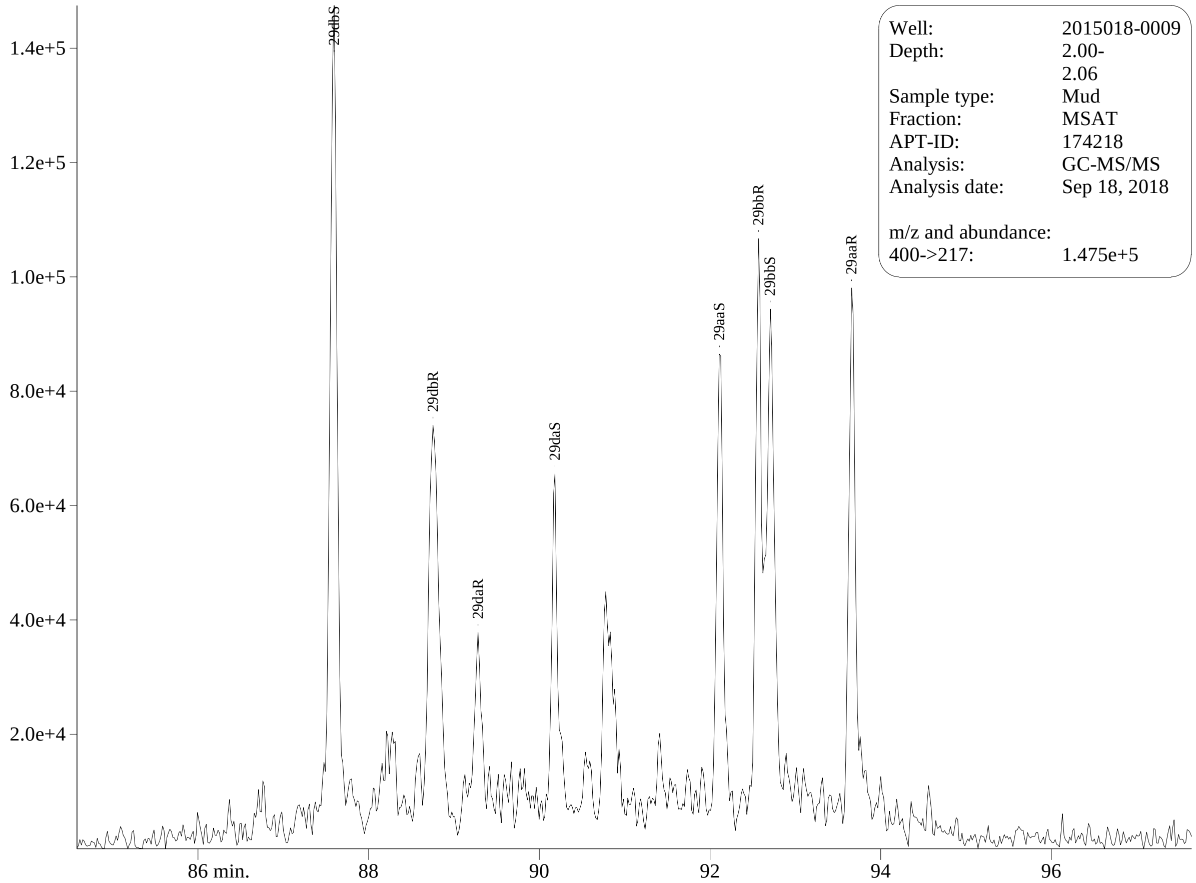
Well: 2015018-0009
Depth: 2.00-2.06
Sample type: Mud
Fraction: MSAT
APT-ID: 174218
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
372->217: 1.582e+5
27dbS
27dbR
27daR
27daS
27aaS
27bbR
27bbS
27aaR
1.4e+5
1.2e+5
1.0e+5
8.0e+4
6.0e+4
4.0e+4
2.0e+4
82 min.
84
86
88
90
92



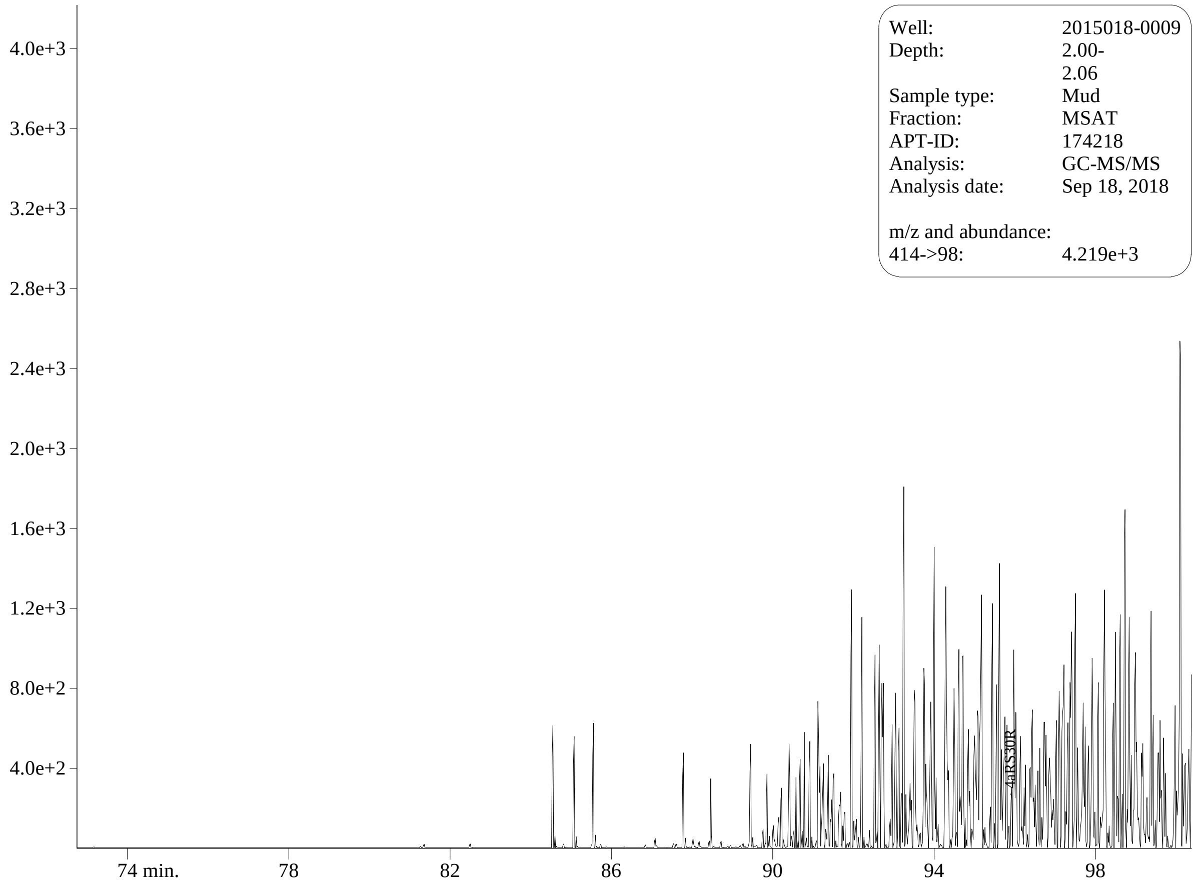
Well: 2015018-0009
Depth: 2.00-2.06
Sample type: Mud
Fraction: MSAT
APT-ID: 174218
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
386->217: 7.252e+4
28dbS#1
28dbS#2
28dbR#1
28dbR#2
28daR
28daS
28aaS
28bbR
28bbS
28aaR
7.0e+4
6.0e+4
5.0e+4
4.0e+4
3.0e+4
2.0e+4
1.0e+4
84 min.
86
88
90
92
94

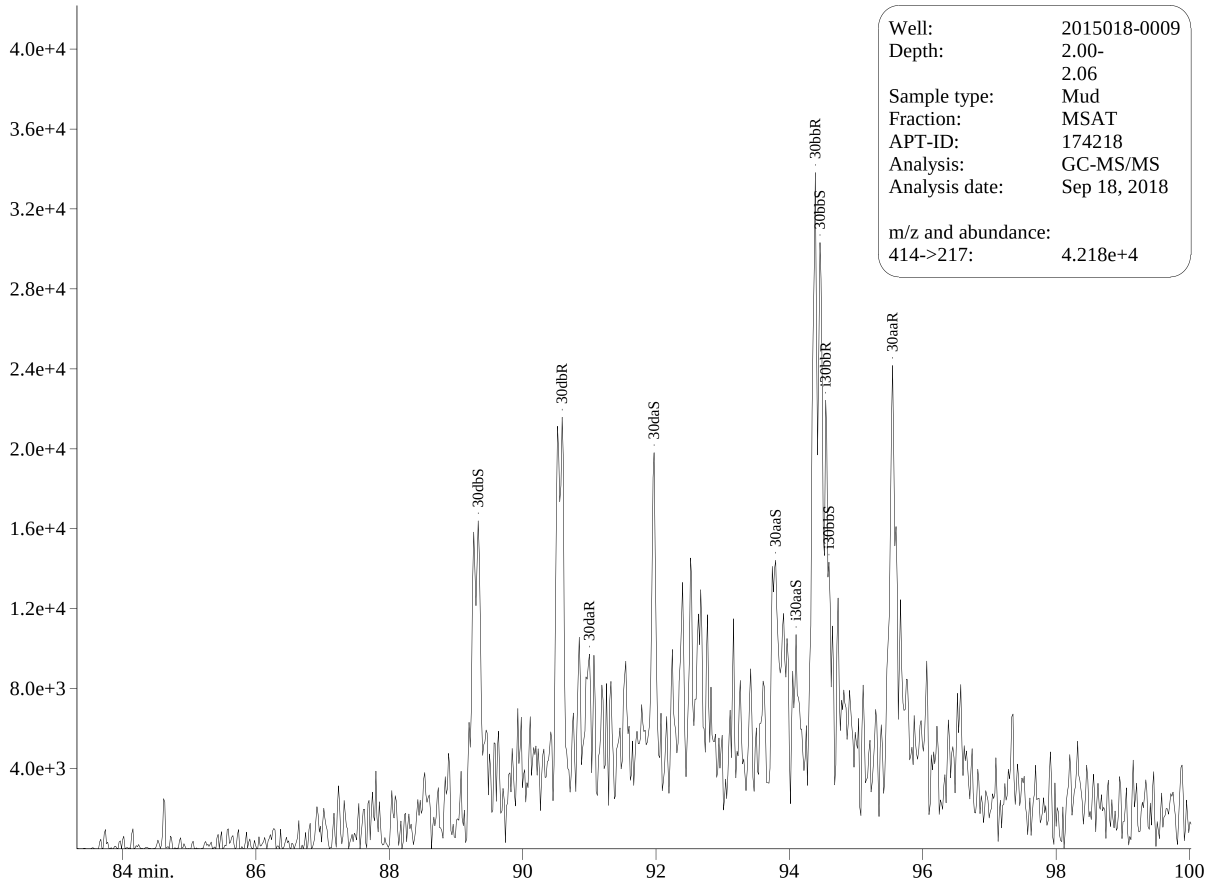


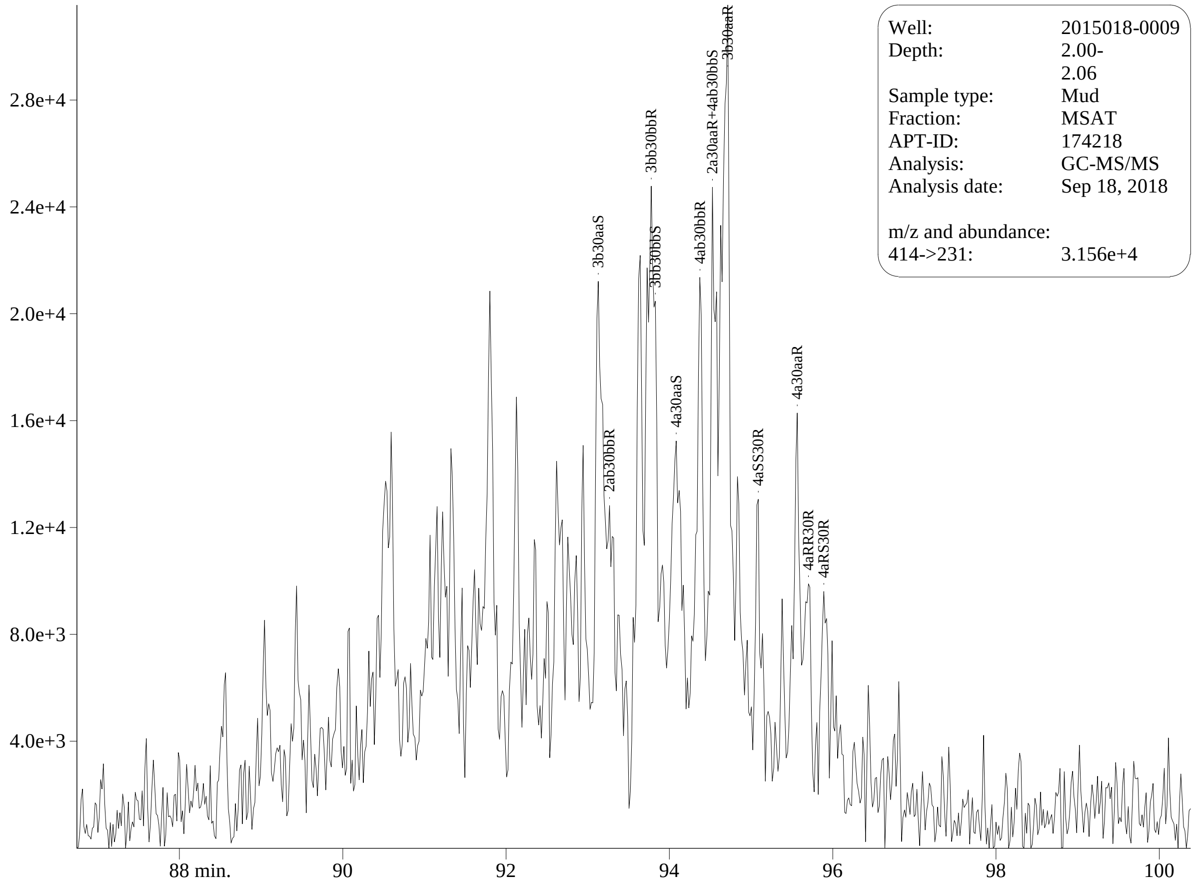
2.2e+4
2.0e+4
1.8e+4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
84 min.
86
88
90
92
94
3b28aaS
3b28bbR
3b28bbS
4a28aaS
3b28aaR+4a28bbR
4a28bbS
4a28aaR
Well: 2015018-0009
Depth: 2.00-2.06
Sample type: Mud
Fraction: MSAT
APT-ID: 174218
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
386->231: 2.232e+4

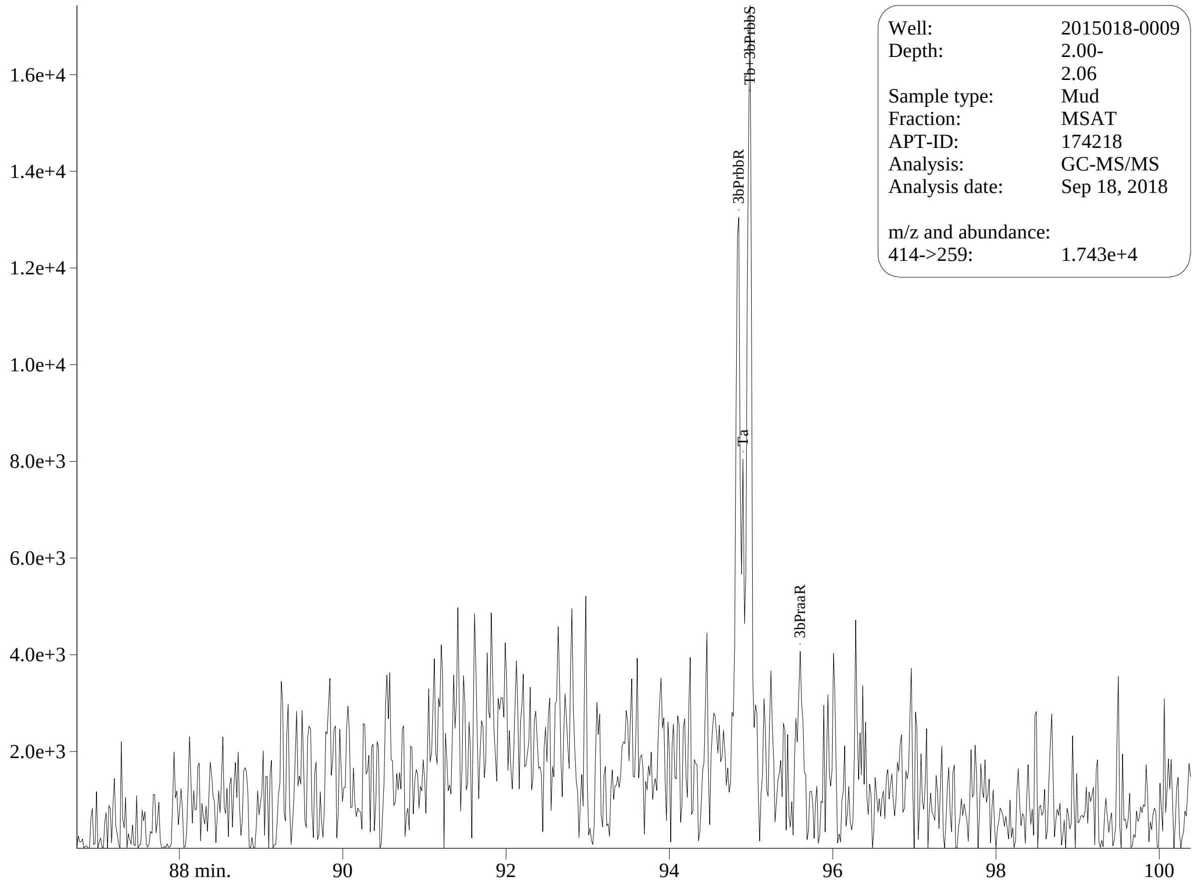


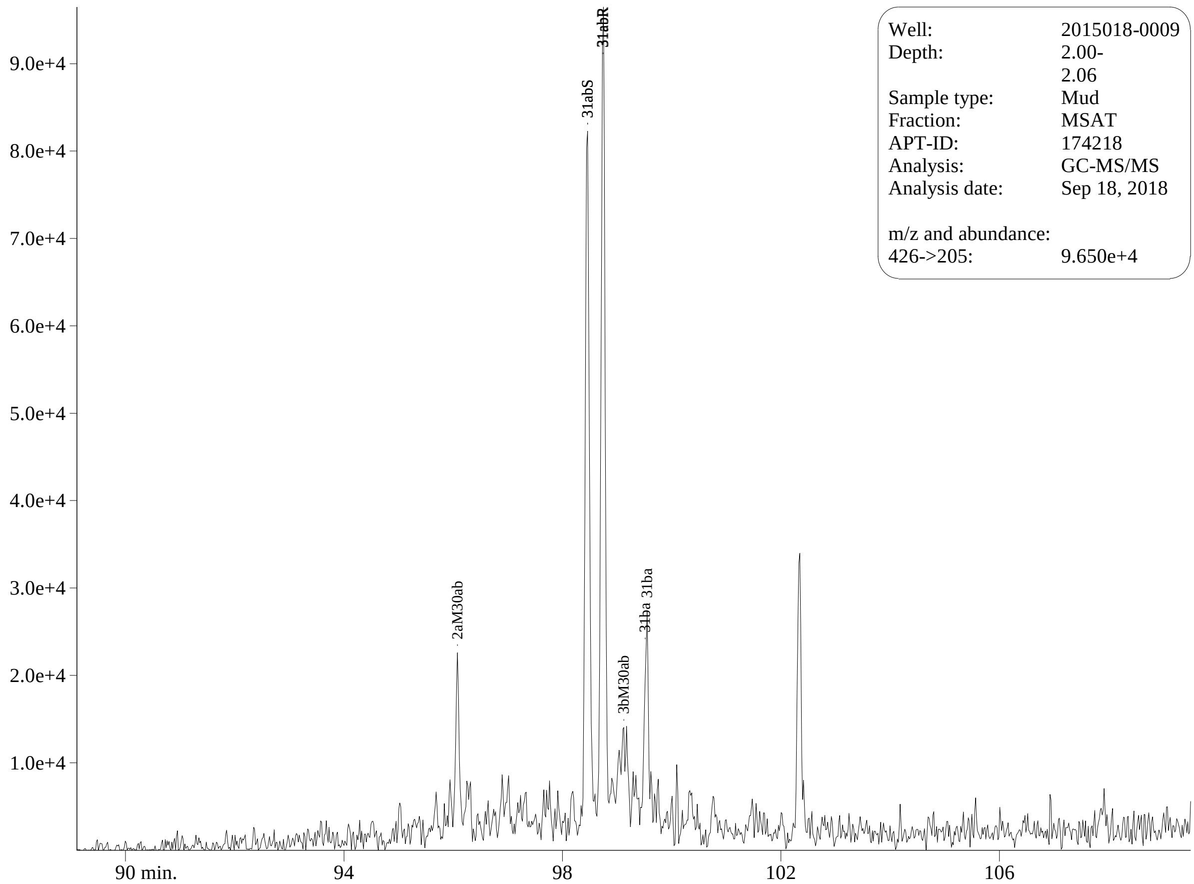
1.4e+5
1.2e+5
1.0e+5
8.0e+4
6.0e+4
4.0e+4
2.0e+4
86 min.
88
90
92
94
96
29dbS
29dbR
29daR
29daS
29aaS
29bbR
29bbS
29aaR
Well: 2015018-0009
Depth: 2.00-2.06
Sample type: Mud
Fraction: MSAT
APT-ID: 174218
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
400->217: 1.475e+5

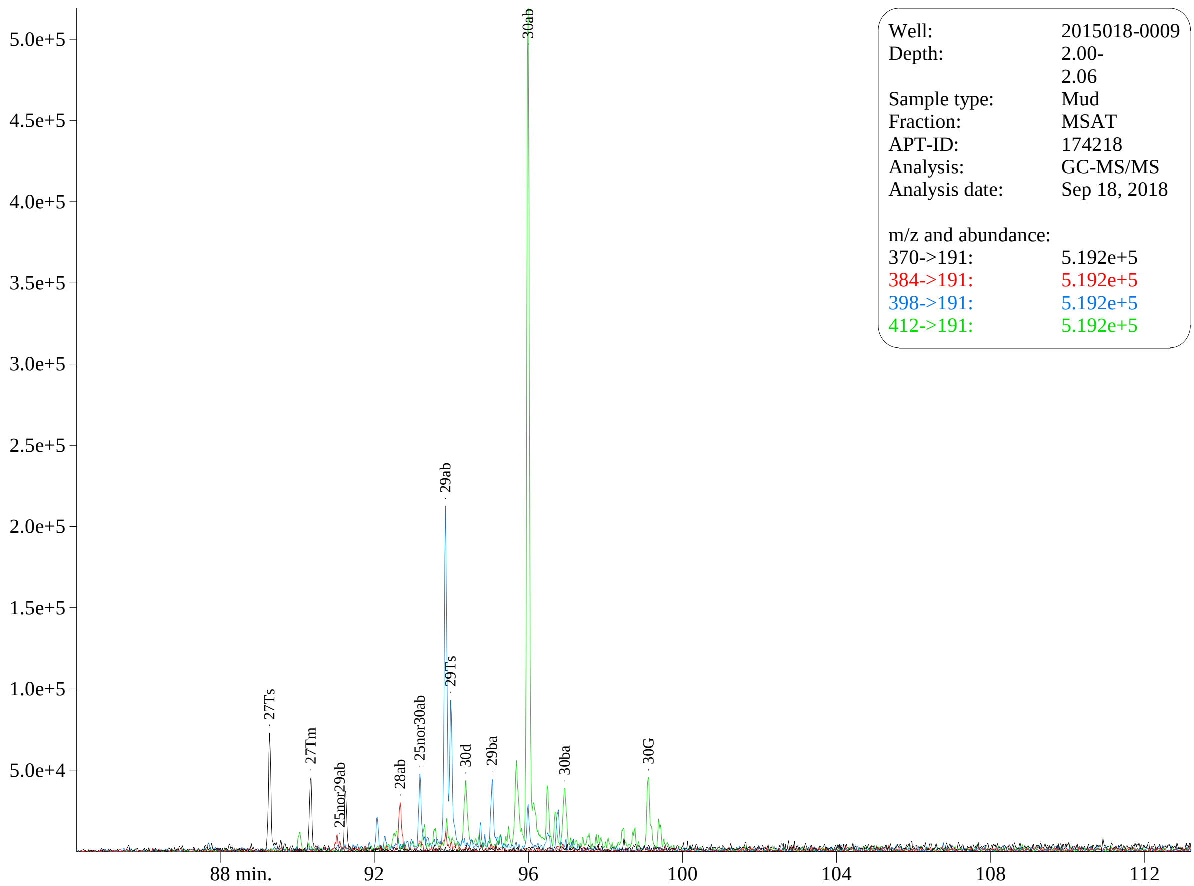

Well: 2015018-0009
Depth: 2.00-2.06
Sample type: Mud
Fraction: MSAT
APT-ID: 174218
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->98: 4.219e+3
4aRS30R
74 min.
78
82
86
90
94
98
4.0e+3
3.6e+3
3.2e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2

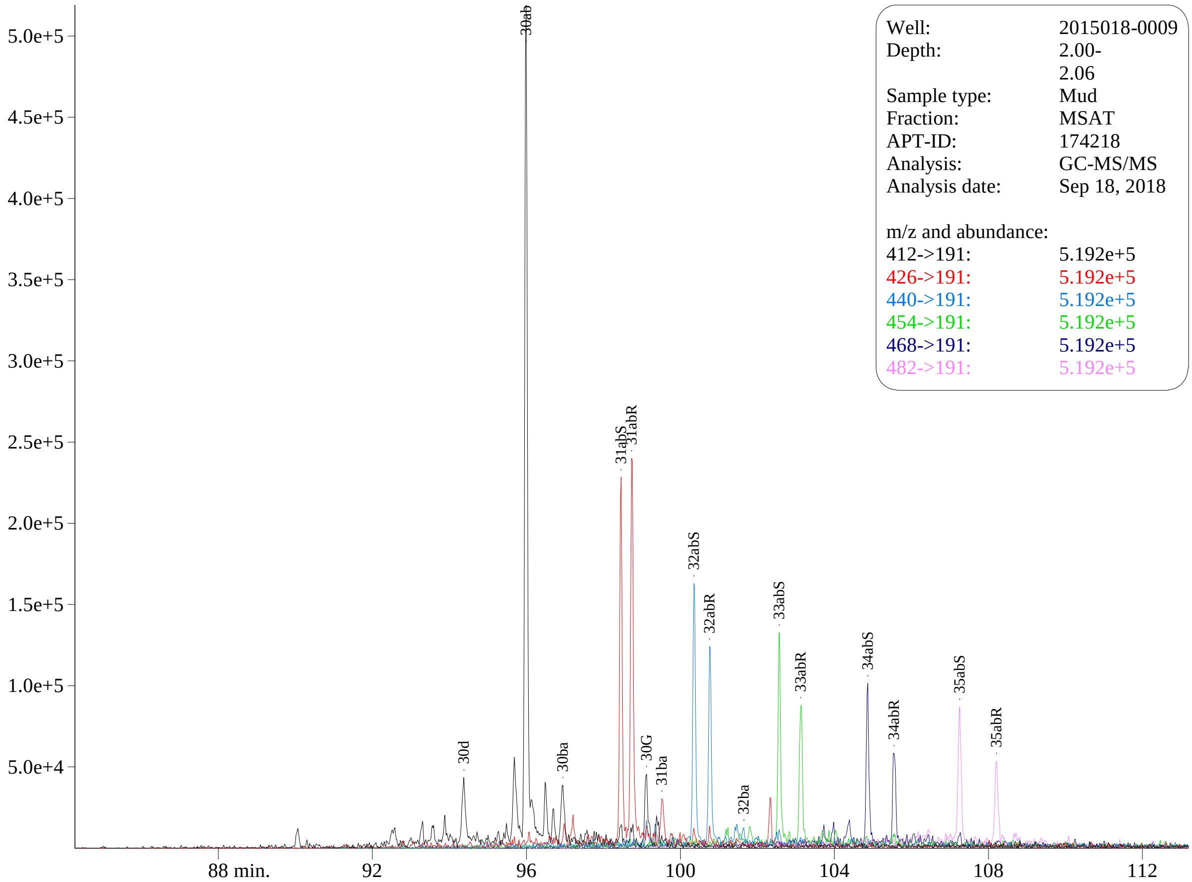

Well: 2015018-0009
Depth: 2.00-2.06
Sample type: Mud
Fraction: MSAT
APT-ID: 174218
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->217: 4.218e+4
30dbS
30dbR
30daR
30daS
30aaS
i30aaS
30bbR
30bbS
i30bbR
i30bbS
30aaR
84 min.
86
88
90
92
94
96
98
100
4.0e+4
3.6e+4
3.2e+4
2.8e+4
2.4e+4
2.0e+4
1.6e+4
1.2e+4
8.0e+3
4.0e+3

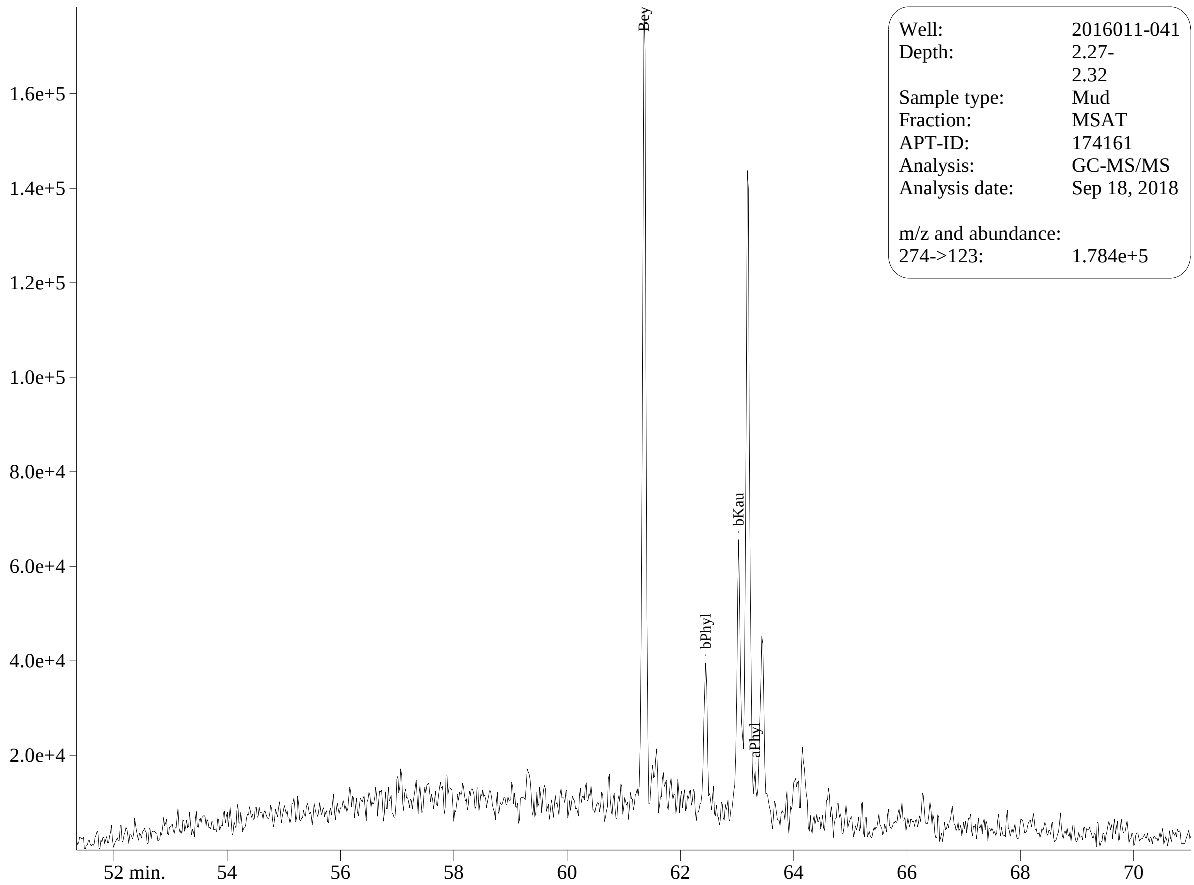

Well: 2015018-0009
Depth: 2.00-2.06
Sample type: Mud
Fraction: MSAT
APT-ID: 174218
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->231: 3.156e+4
3b30aaS
2ab30bbR
3bb30bbR
3bb30bbS
4a30aaS
4ab30bbR
2a30aaR+4ab30bbS
3b30aaR
4aSS30R
4a30aaR
4aRR30R
4aRS30R
2.8e+4
2.4e+4
2.0e+4
1.6e+4
1.2e+4
8.0e+3
4.0e+3
88 min.
90
92
94
96
98
100

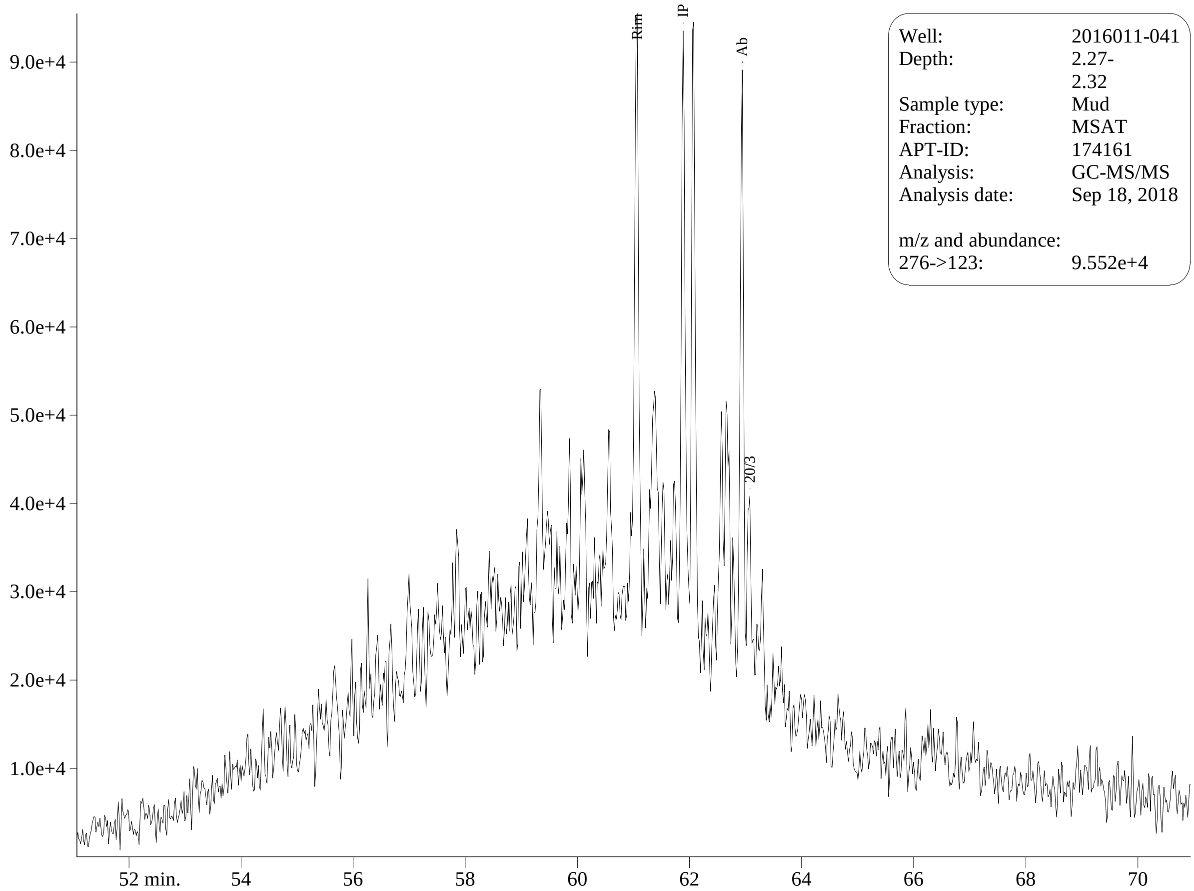

Well: 2015018-0009
Depth: 2.00-2.06
Sample type: Mud
Fraction: MSAT
APT-ID: 174218
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->259: 1.743e+4
Tb+3bPrbbS
3bPrbbR
Ta
3bPraaR
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
88 min.
90
92
94
96
98
100

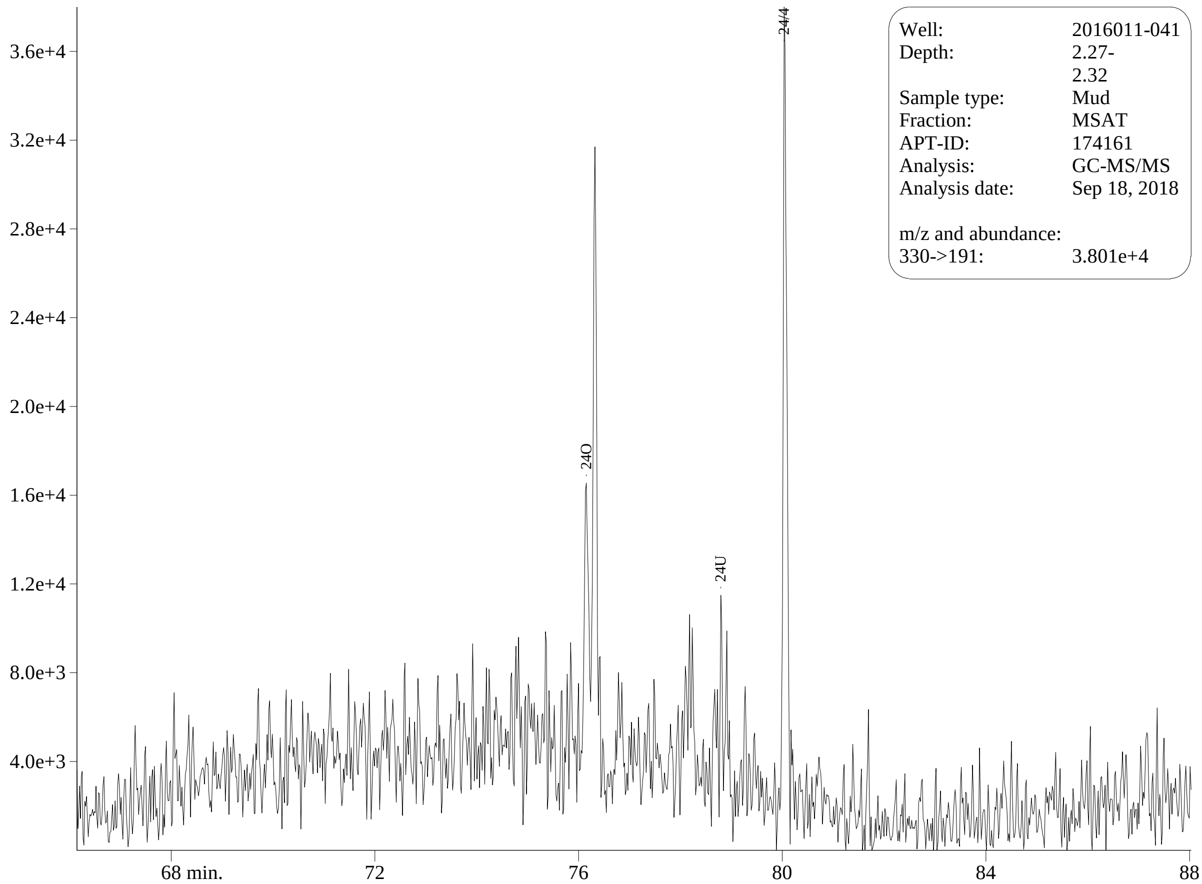

Well: 2015018-0009
Depth: 2.00-2.06
Sample type: Mud
Fraction: MSAT
APT-ID: 174218
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
426->205: 9.650e+4
31abS
31abR
2aM30ab
3bM30ab
31ba 31ba
90 min.
94
98
102
106
9.0e+4
8.0e+4
7.0e+4
6.0e+4
5.0e+4
4.0e+4
3.0e+4
2.0e+4
1.0e+4


Well: 2015018-0009
Depth: 2.00-2.06
Sample type: Mud
Fraction: MSAT
APT-ID: 174218
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
370->191: 5.192e+5
384->191: 5.192e+5
398->191: 5.192e+5
412->191: 5.192e+5
30ab
29ab
29Ts
27Ts
27Tm
25nor29ab
28ab
25nor30ab
30d
29ba
30ba
30G
88 min.
92
96
100
104
108
112
5.0e+5
4.5e+5
4.0e+5
3.5e+5
3.0e+5
2.5e+5
2.0e+5
1.5e+5
1.0e+5
5.0e+4

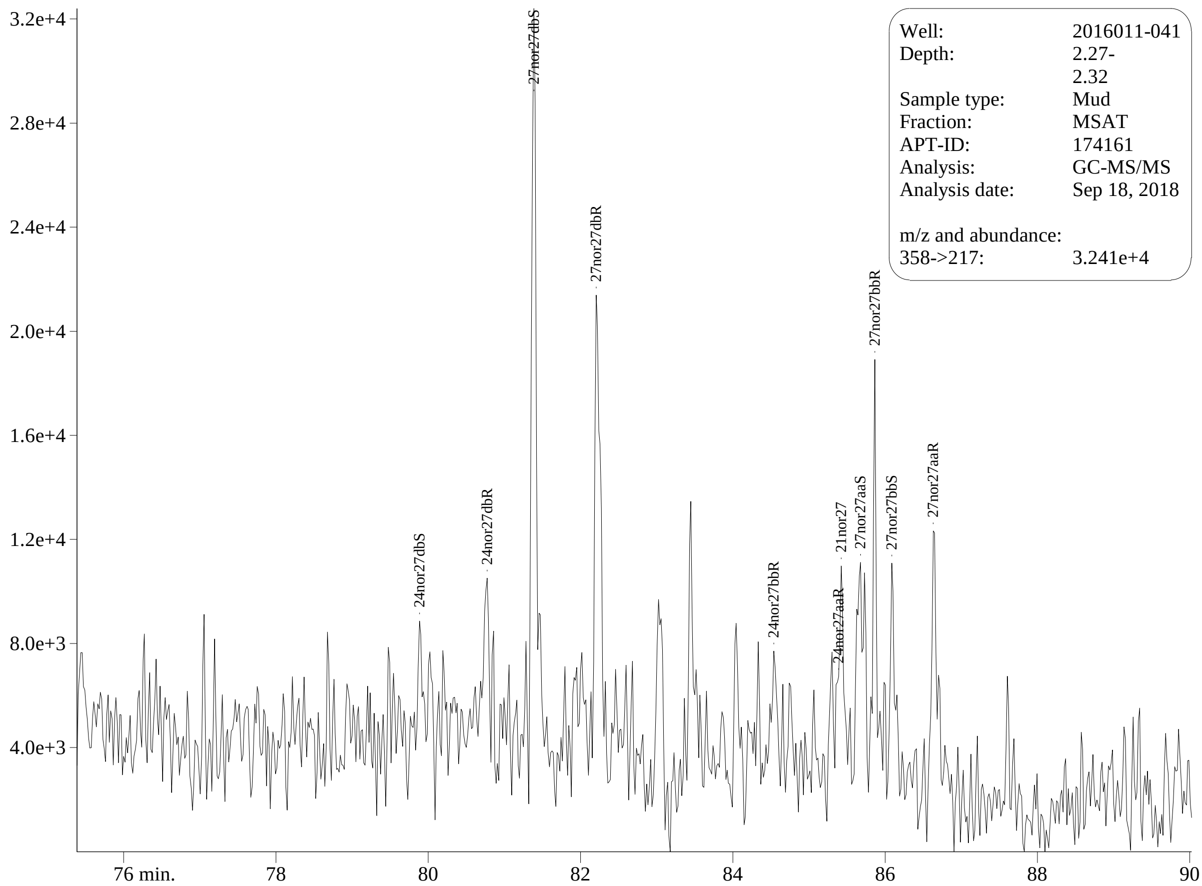

5.0e+5
4.5e+5
4.0e+5
3.5e+5
3.0e+5
2.5e+5
2.0e+5
1.5e+5
1.0e+5
5.0e+4
88 min.
92
96
100
104
108
112
30ab
31abS
31abR
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR
30d
30ba
30G
31ba
32ba
Well: 2015018-0009
Depth: 2.00-2.06
Sample type: Mud
Fraction: MSAT
APT-ID: 174218
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
412->191: 5.192e+5
426->191: 5.192e+5
440->191: 5.192e+5
454->191: 5.192e+5
468->191: 5.192e+5
482->191: 5.192e+5


Bey
bPhyl
bKau
aPhyl
1.6e+5
1.4e+5
1.2e+5
1.0e+5
8.0e+4
6.0e+4
4.0e+4
2.0e+4
52 min.
54
56
58
60
62
64
66
68
70
Well: 2016011-041
Depth: 2.27-2.32
Sample type: Mud
Fraction: MSAT
APT-ID: 174161
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
274->123: 1.784e+5

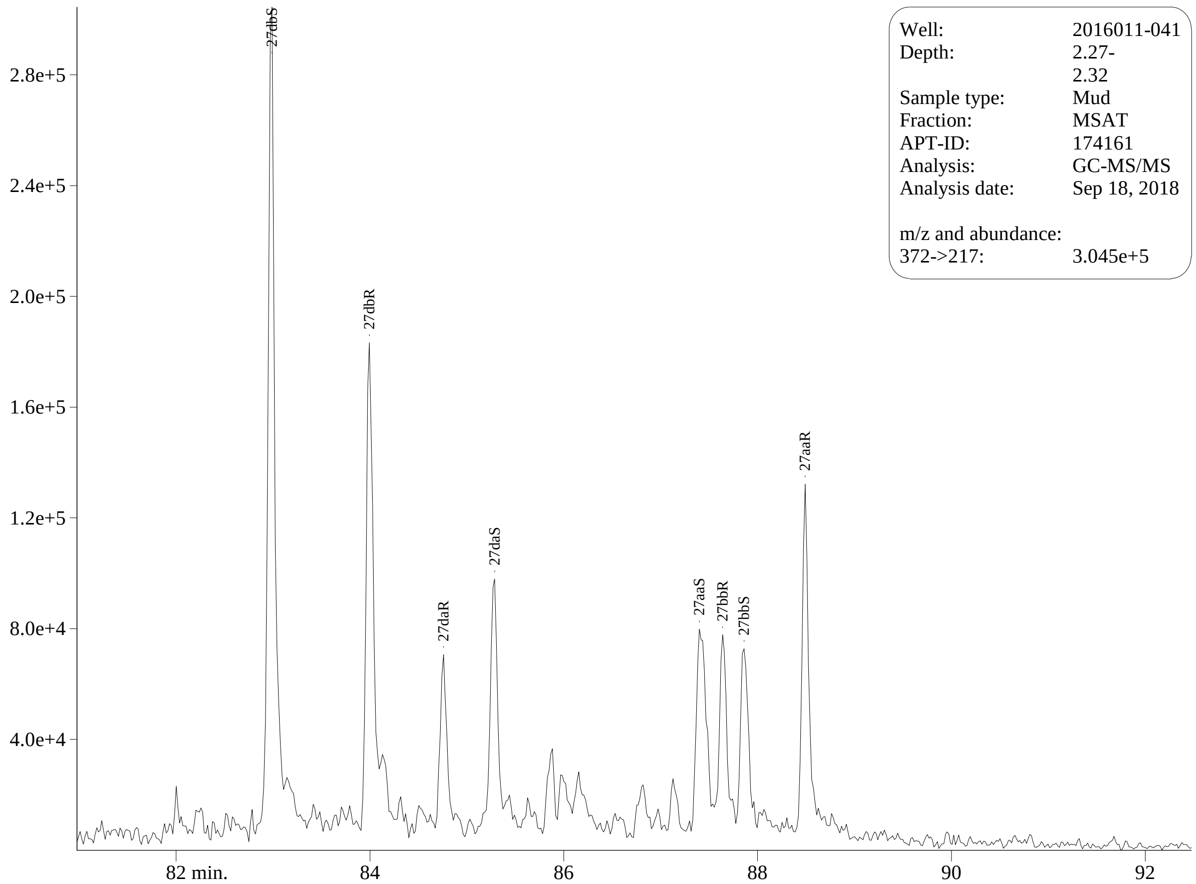

Rim
IP
Ab
20/3
9.0e+4
8.0e+4
7.0e+4
6.0e+4
5.0e+4
4.0e+4
3.0e+4
2.0e+4
1.0e+4
52 min.
54
56
58
60
62
64
66
68
70
Well: 2016011-041
Depth: 2.27-2.32
Sample type: Mud
Fraction: MSAT
APT-ID: 174161
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
276->123: 9.552e+4

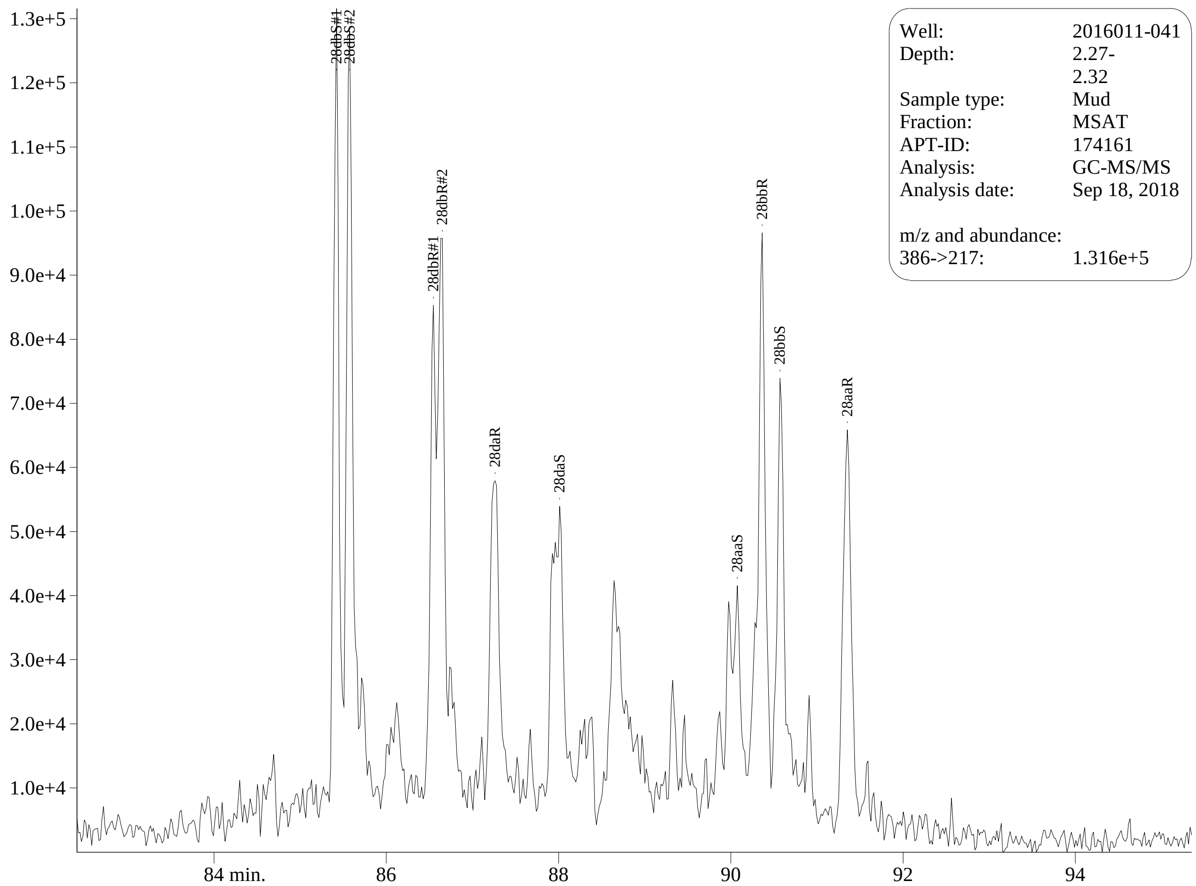


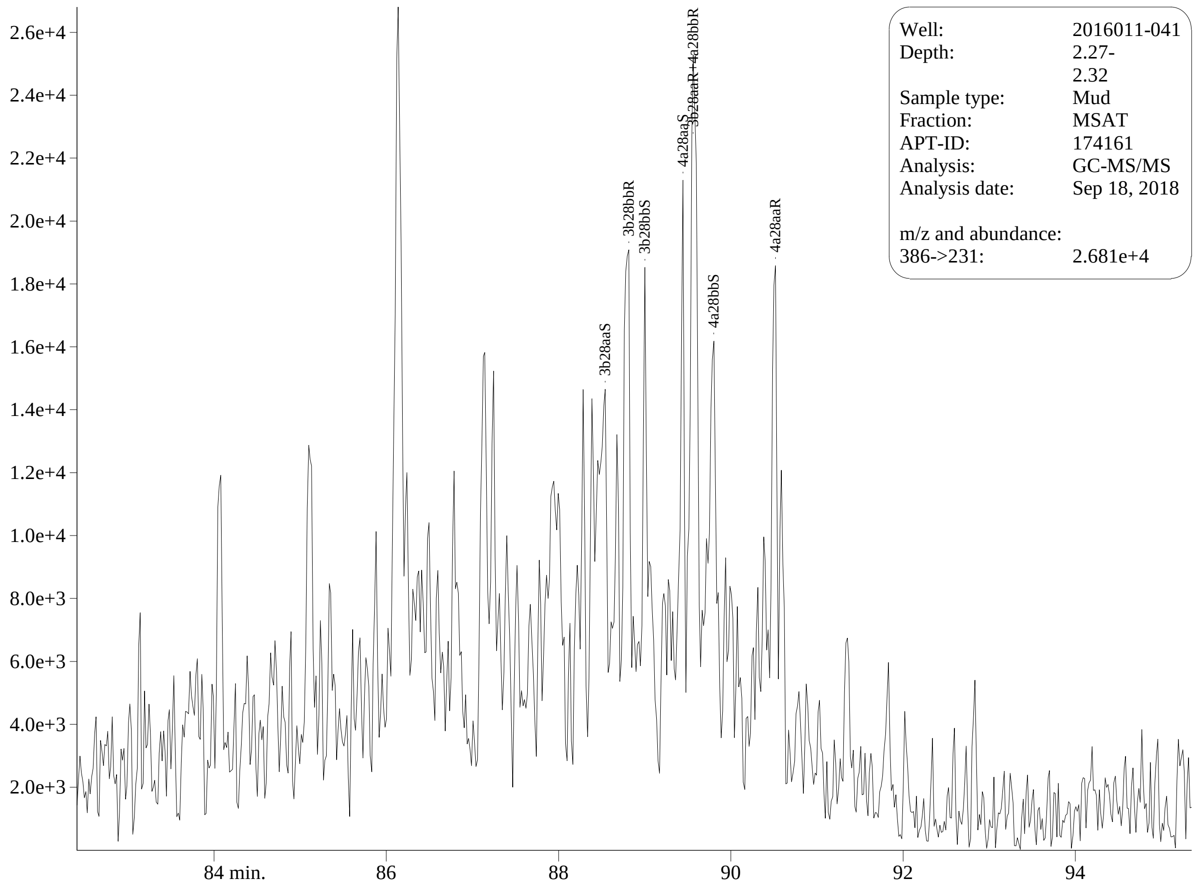
3.6e+4
3.2e+4
2.8e+4
2.4e+4
2.0e+4
1.6e+4
1.2e+4
8.0e+3
4.0e+3
68 min.
72
76
80
84
88
24O
24U
24/4
Well: 2016011-041
Depth: 2.27-2.32
Sample type: Mud
Fraction: MSAT
APT-ID: 174161
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
330->191: 3.801e+4



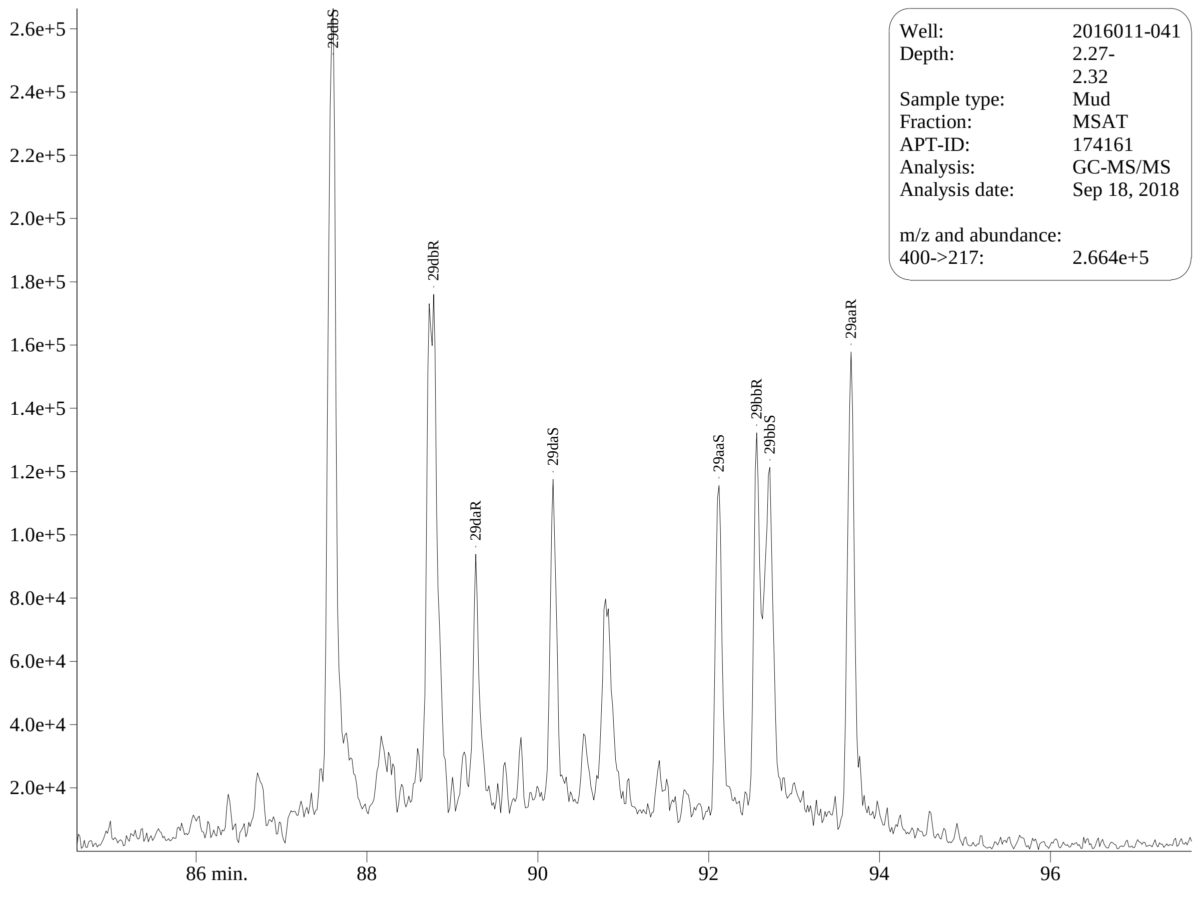
3.2e+4
2.8e+4
2.4e+4
2.0e+4
1.6e+4
1.2e+4
8.0e+3
4.0e+3
76 min.
78
80
82
84
86
88
90
24nor27dbS
24nor27dbR
27nor27dbS
27nor27dbR
24nor27bbR
24nor27aaR
21nor27
27nor27aaS
27nor27bbR
27nor27bbS
27nor27aaR
Well: 2016011-041
Depth: 2.27-2.32
Sample type: Mud
Fraction: MSAT
APT-ID: 174161
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
358->217: 3.241e+4


27dbS
27dbR
27daR
27daS
27aaS
27bbR
27bbS
27aaR
2.8e+5
2.4e+5
2.0e+5
1.6e+5
1.2e+5
8.0e+4
4.0e+4
82 min.
84
86
88
90
92
Well: 2016011-041
Depth: 2.27-2.32
Sample type: Mud
Fraction: MSAT
APT-ID: 174161
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
372->217: 3.045e+5

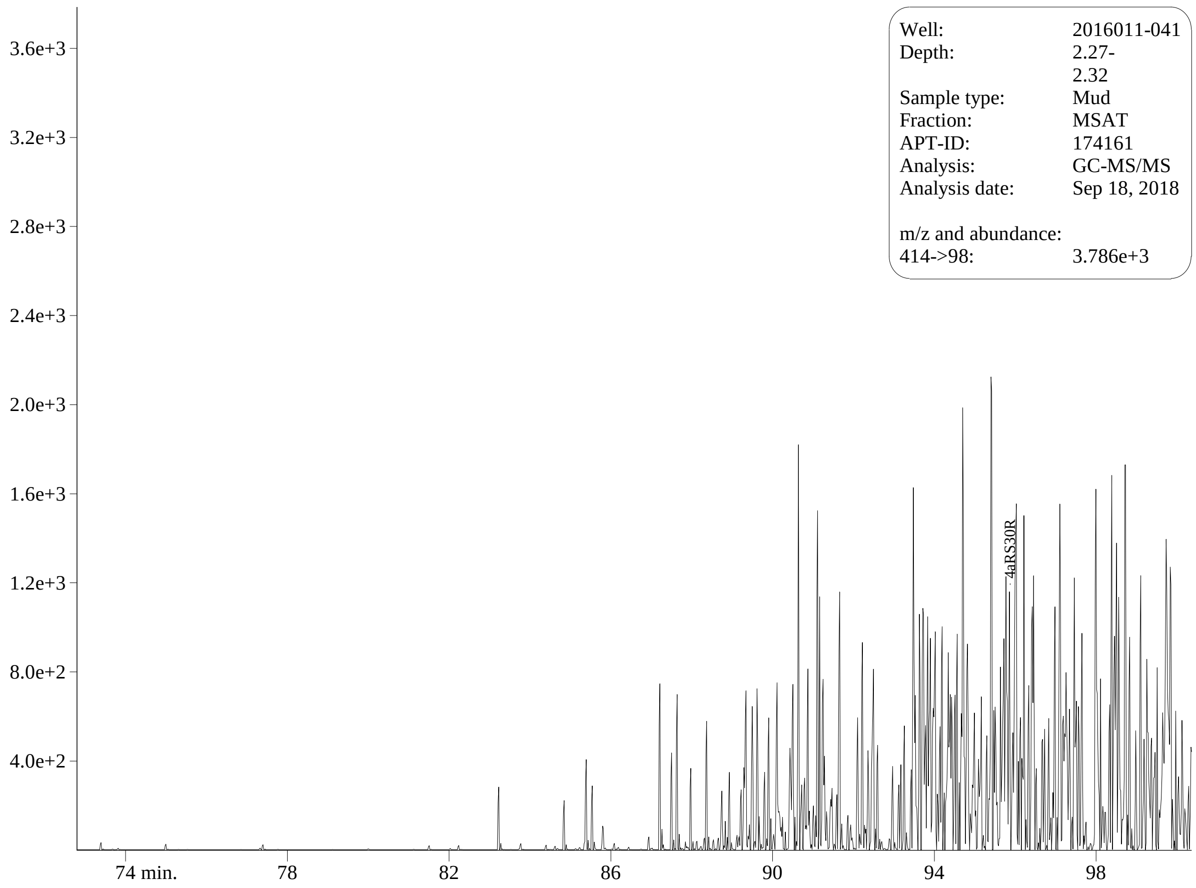

28dbS#1
28dbS#2
28dbR#1
28dbR#2
28daR
28daS
28aaS
28bbR
28bbS
28aaR
1.3e+5
1.2e+5
1.1e+5
1.0e+5
9.0e+4
8.0e+4
7.0e+4
6.0e+4
5.0e+4
4.0e+4
3.0e+4
2.0e+4
1.0e+4
84 min.
86
88
90
92
94
Well: 2016011-041
Depth: 2.27-2.32
Sample type: Mud
Fraction: MSAT
APT-ID: 174161
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
386->217: 1.316e+5

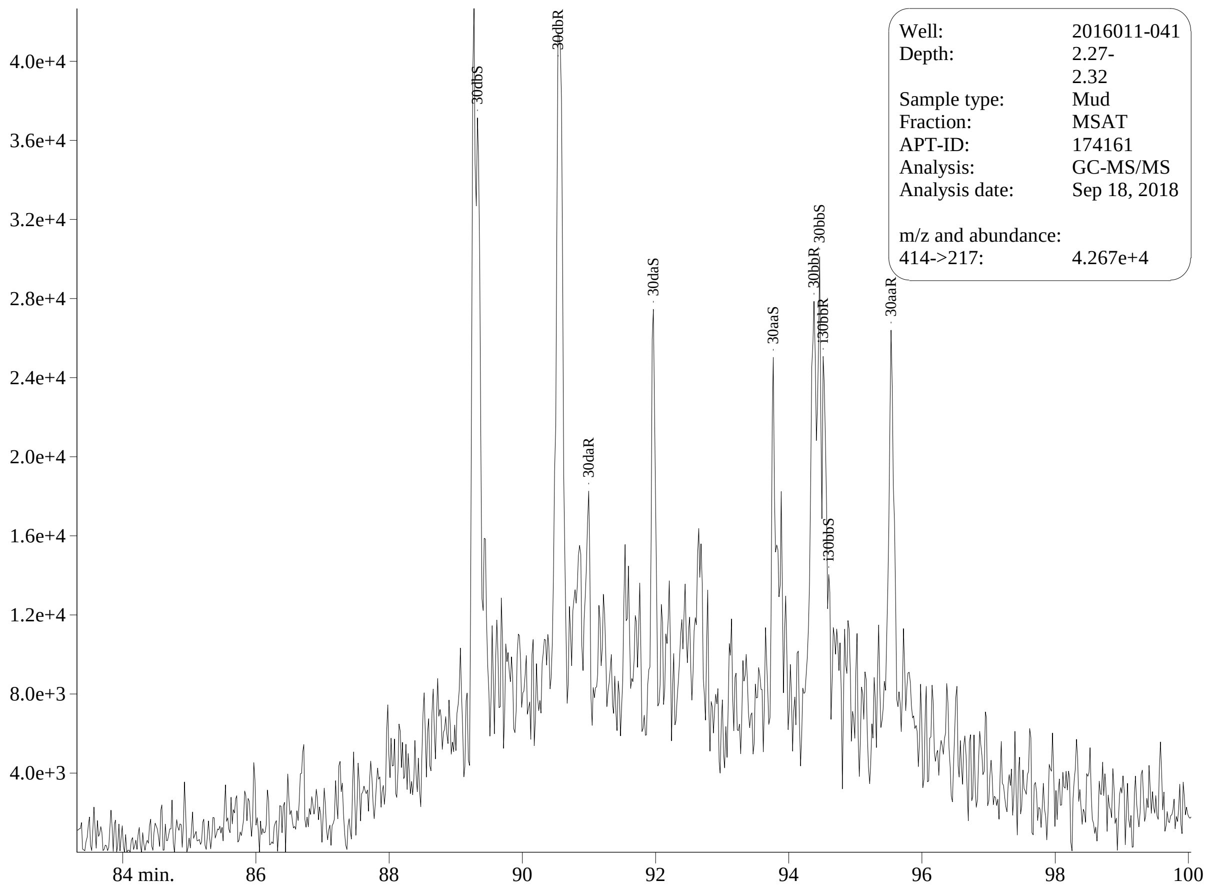


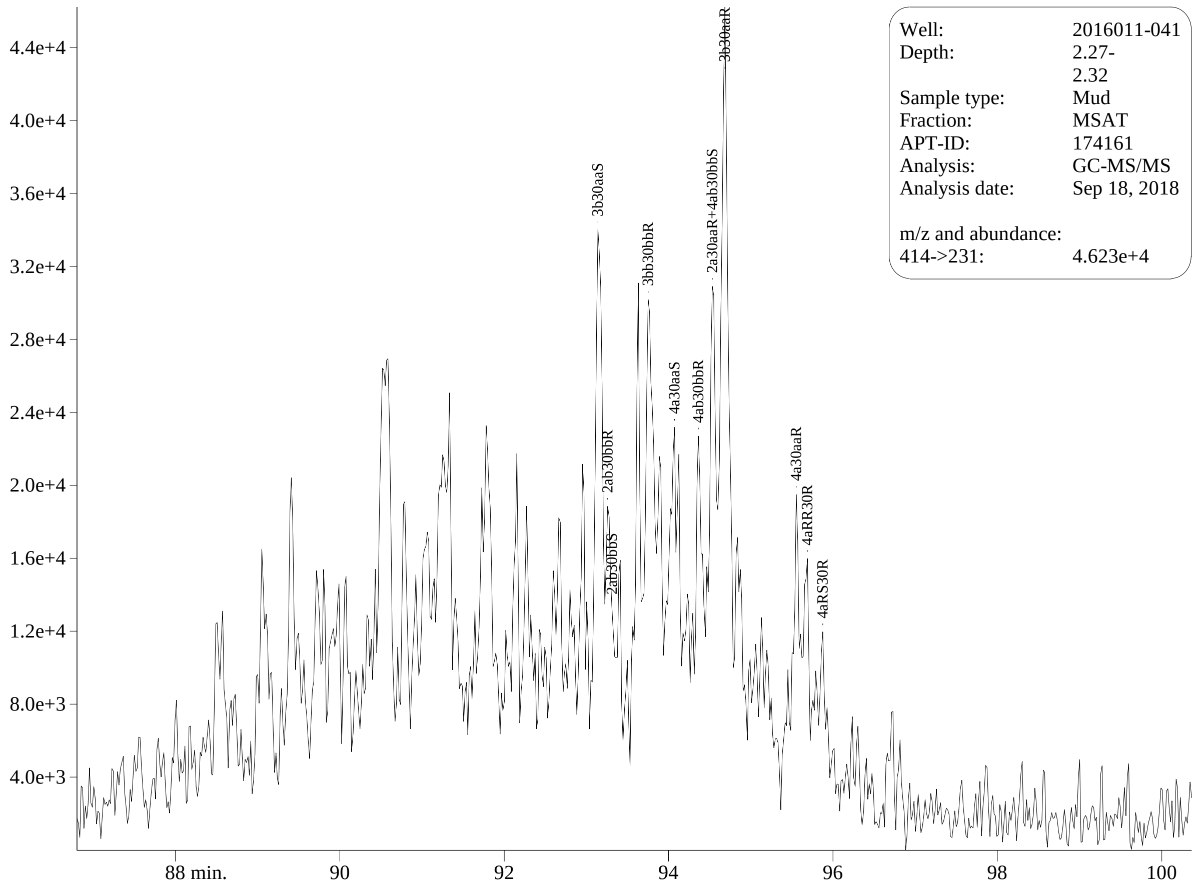
Well: 2016011-041
Depth: 2.27-2.32
Sample type: Mud
Fraction: MSAT
APT-ID: 174161
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
386->231: 2.681e+4
3b28aaS
3b28bbR
3b28bbS
4a28aaS
3b28aaR+4a28bbR
4a28bbS
4a28aaR
84 min.
86
88
90
92
94

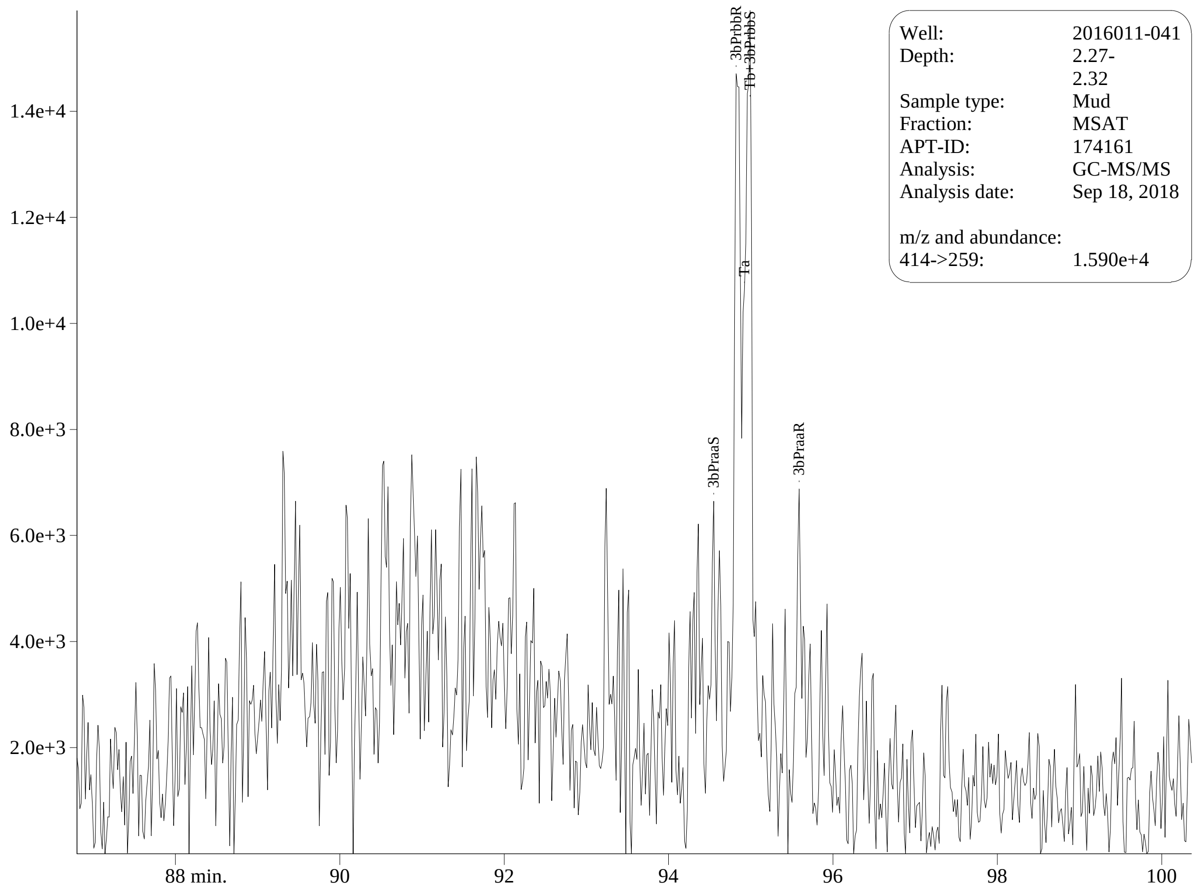


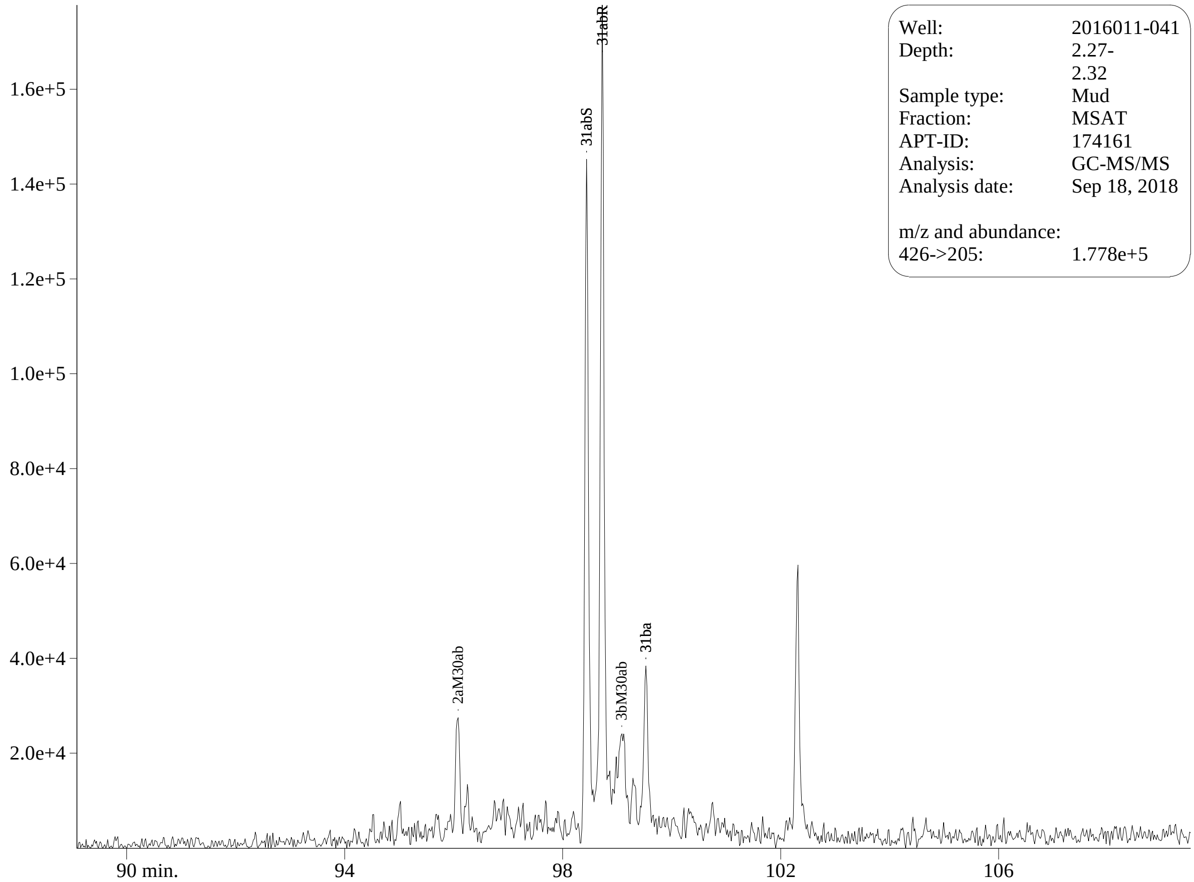
Well: 2016011-041
Depth: 2.27-2.32
Sample type: Mud
Fraction: MSAT
APT-ID: 174161
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
400->217: 2.664e+5
29dbS
29dbR
29daR
29daS
29aaS
29bbR
29bbS
29aaR
86 min.
88
90
92
94
96

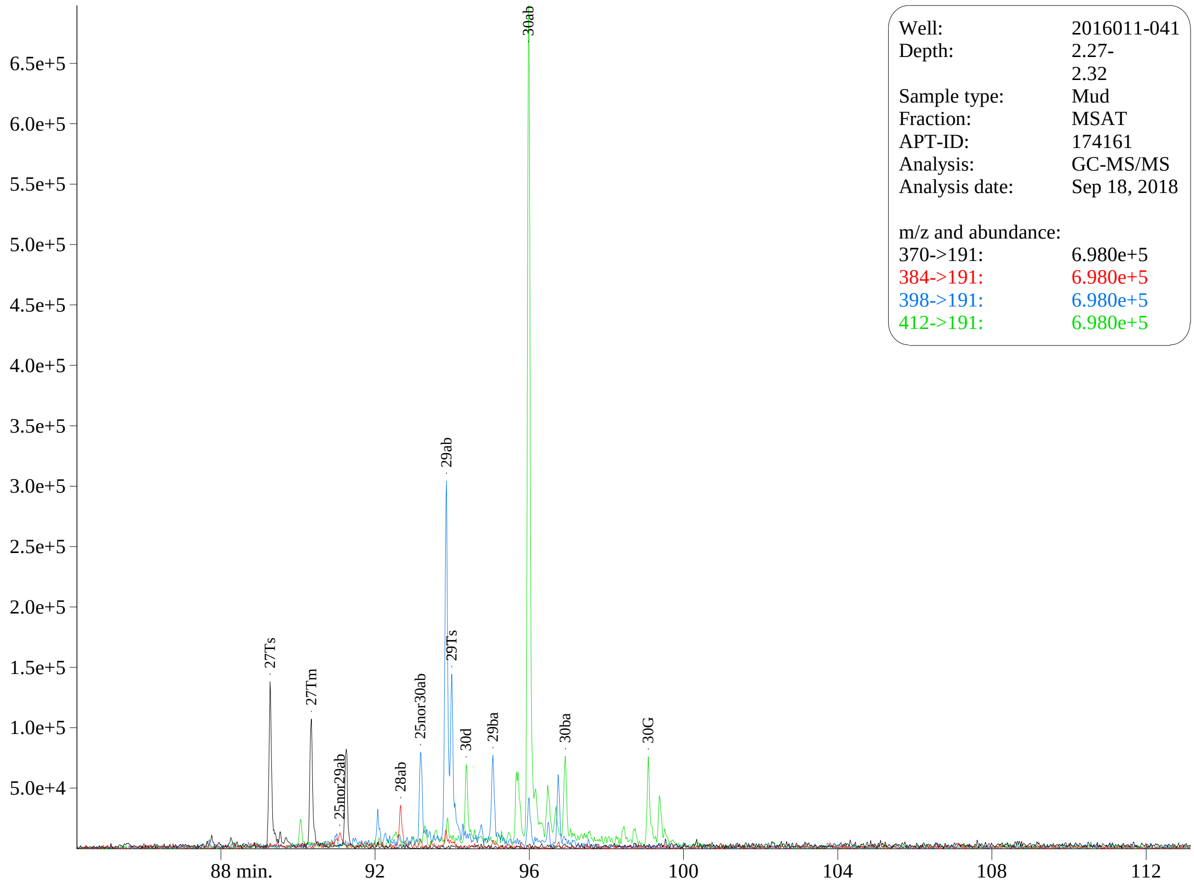

Well: 2016011-041
Depth: 2.27-2.32
Sample type: Mud
Fraction: MSAT
APT-ID: 174161
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->98: 3.786e+3
4aRS30R
74 min.
78
82
86
90
94
98
3.6e+3
3.2e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2

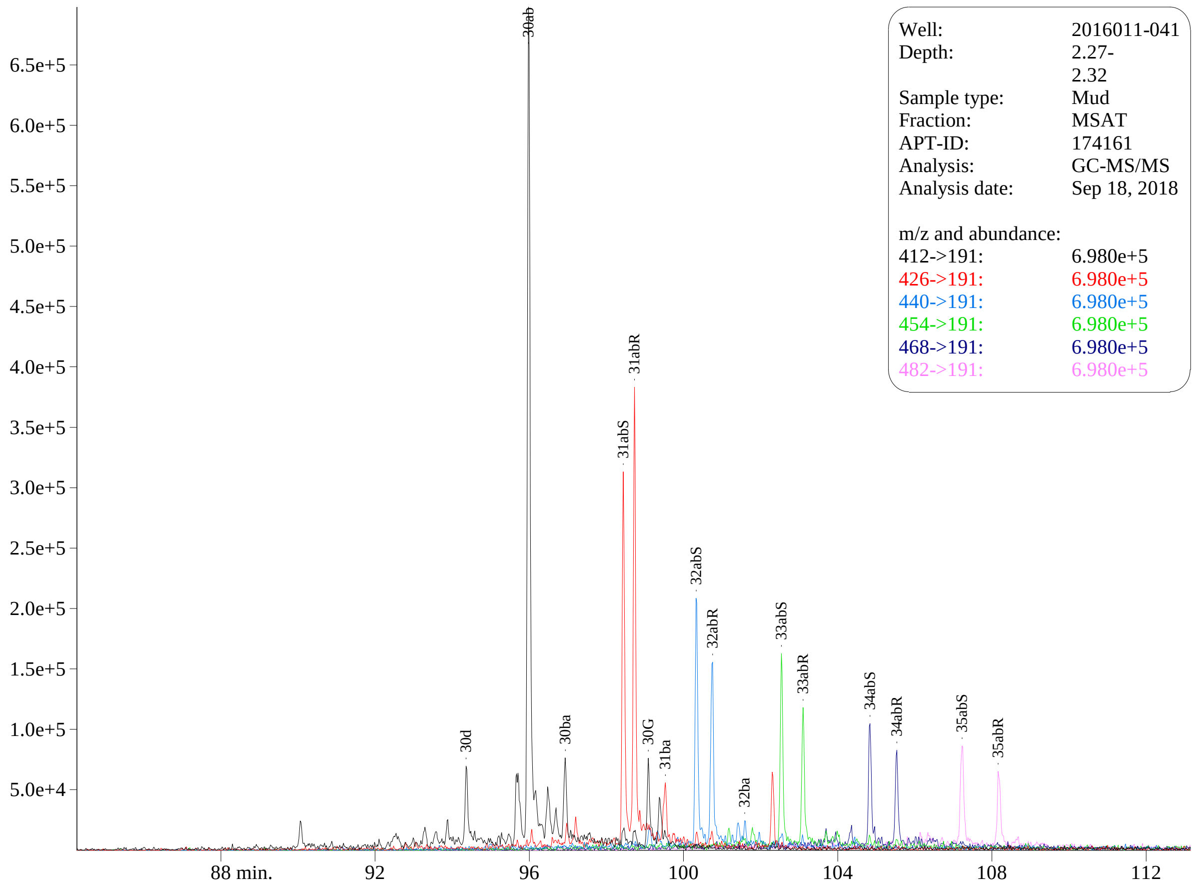

Well: 2016011-041
Depth: 2.27-2.32
Sample type: Mud
Fraction: MSAT
APT-ID: 174161
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->217: 4.267e+4
30dbS
30dbR
30daR
30daS
30aaS
30bbR
30bbS
i30bbR
i30bbS
30aaR
84 min.
86
88
90
92
94
96
98
100
4.0e+4
3.6e+4
3.2e+4
2.8e+4
2.4e+4
2.0e+4
1.6e+4
1.2e+4
8.0e+3
4.0e+3


4.4e+4
4.0e+4
3.6e+4
3.2e+4
2.8e+4
2.4e+4
2.0e+4
1.6e+4
1.2e+4
8.0e+3
4.0e+3
88 min.
90
92
94
96
98
100
3b30aaR
3b30aaS
3bb30bbR
2a30aaR+4ab30bbS
4a30aaS
4ab30bbR
2ab30bbR
2ab30bbS
4a30aaR
4aRR30R
4aRS30R
Well: 2016011-041
Depth: 2.27-2.32
Sample type: Mud
Fraction: MSAT
APT-ID: 174161
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->231: 4.623e+4

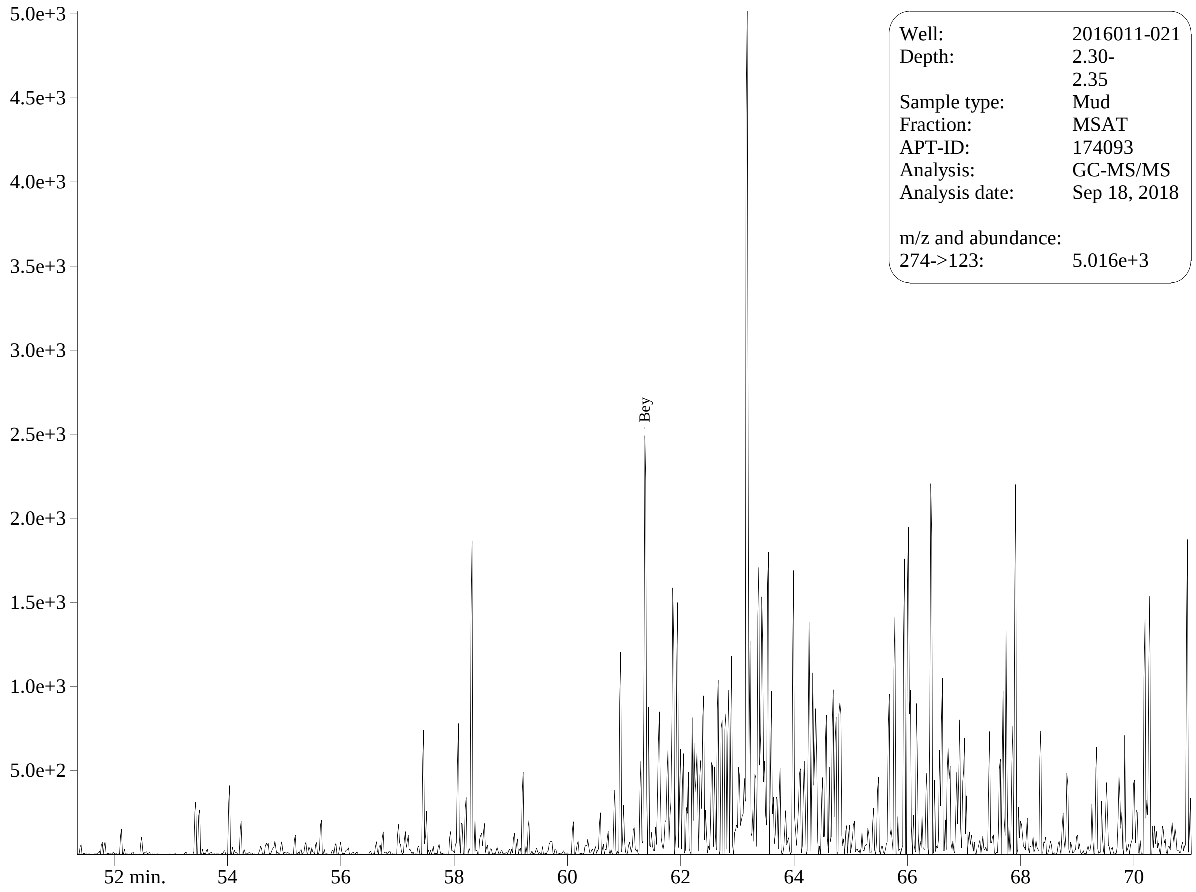

1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
88 min.
90
92
94
96
98
100
3bPrbbR
Tb+3bPrbbS
Ta
3bPraaS
3bPraaR
Well: 2016011-041
Depth: 2.27-2.32
Sample type: Mud
Fraction: MSAT
APT-ID: 174161
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->259: 1.590e+4


Well: 2016011-041
Depth: 2.27-2.32
Sample type: Mud
Fraction: MSAT
APT-ID: 174161
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
426->205: 1.778e+5
31abR
31abS
2aM30ab
3bM30ab
31ba
90 min.
94
98
102
106

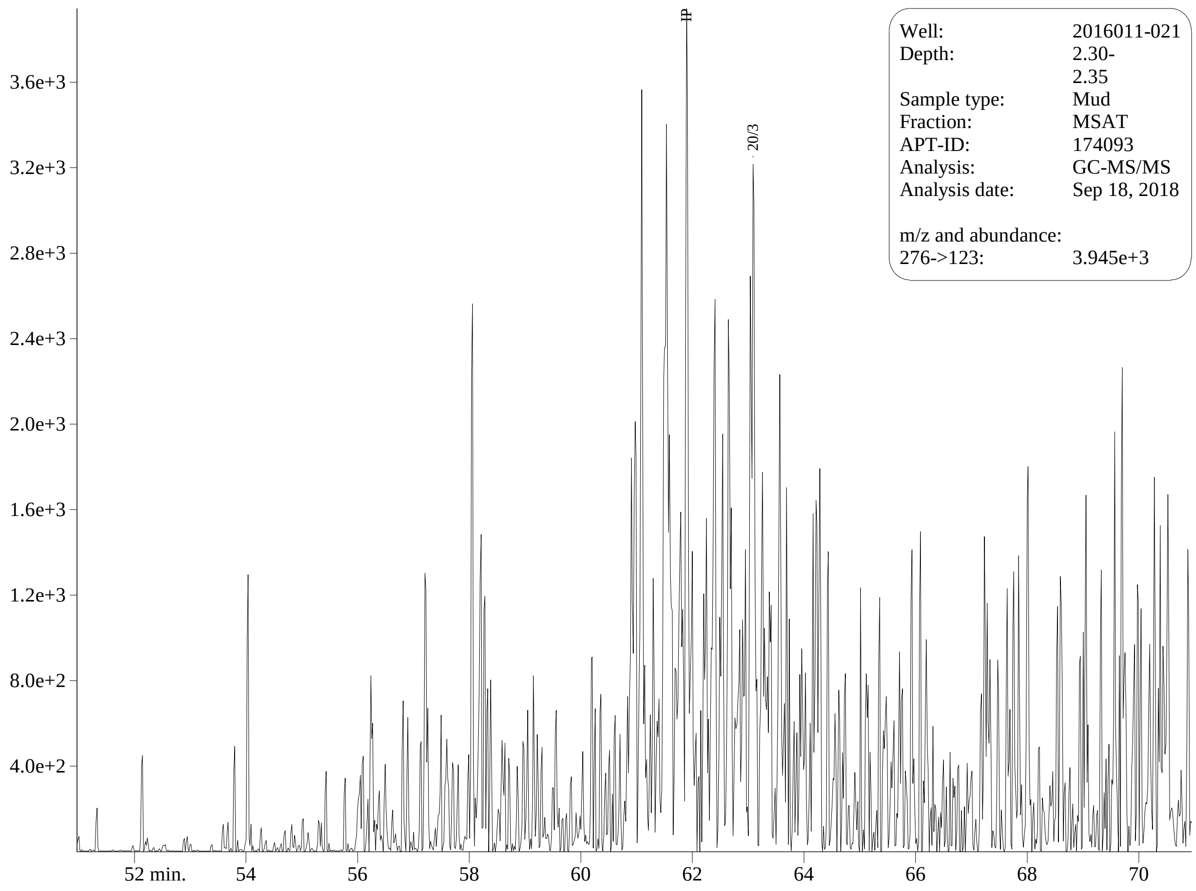

Well: 2016011-041
Depth: 2.27-2.32
Sample type: Mud
Fraction: MSAT
APT-ID: 174161
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
370->191: 6.980e+5
384->191: 6.980e+5
398->191: 6.980e+5
412->191: 6.980e+5
30ab
29ab
27Ts
27Tm
25nor29ab
28ab
25nor30ab
29Ts
30d
29ba
30ba
30G
88 min.
92
96
100
104
108
112



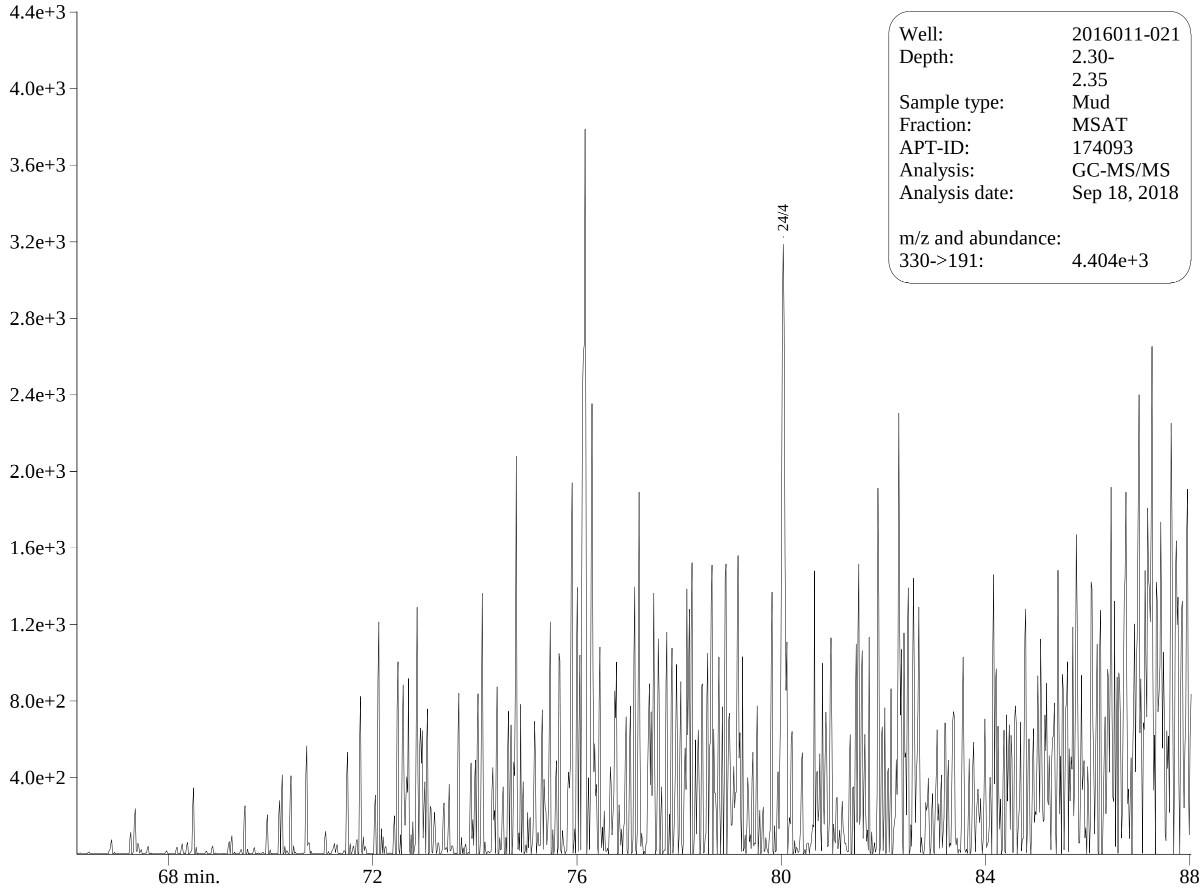
Well: 2016011-041
Depth: 2.27-2.32
Sample type: Mud
Fraction: MSAT
APT-ID: 174161
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
412->191: 6.980e+5
426->191: 6.980e+5
440->191: 6.980e+5
454->191: 6.980e+5
468->191: 6.980e+5
482->191: 6.980e+5
30ab
31abS
31abR
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR
30d
30ba
30G
31ba
32ba
88 min.
92
96
100
104
108
112



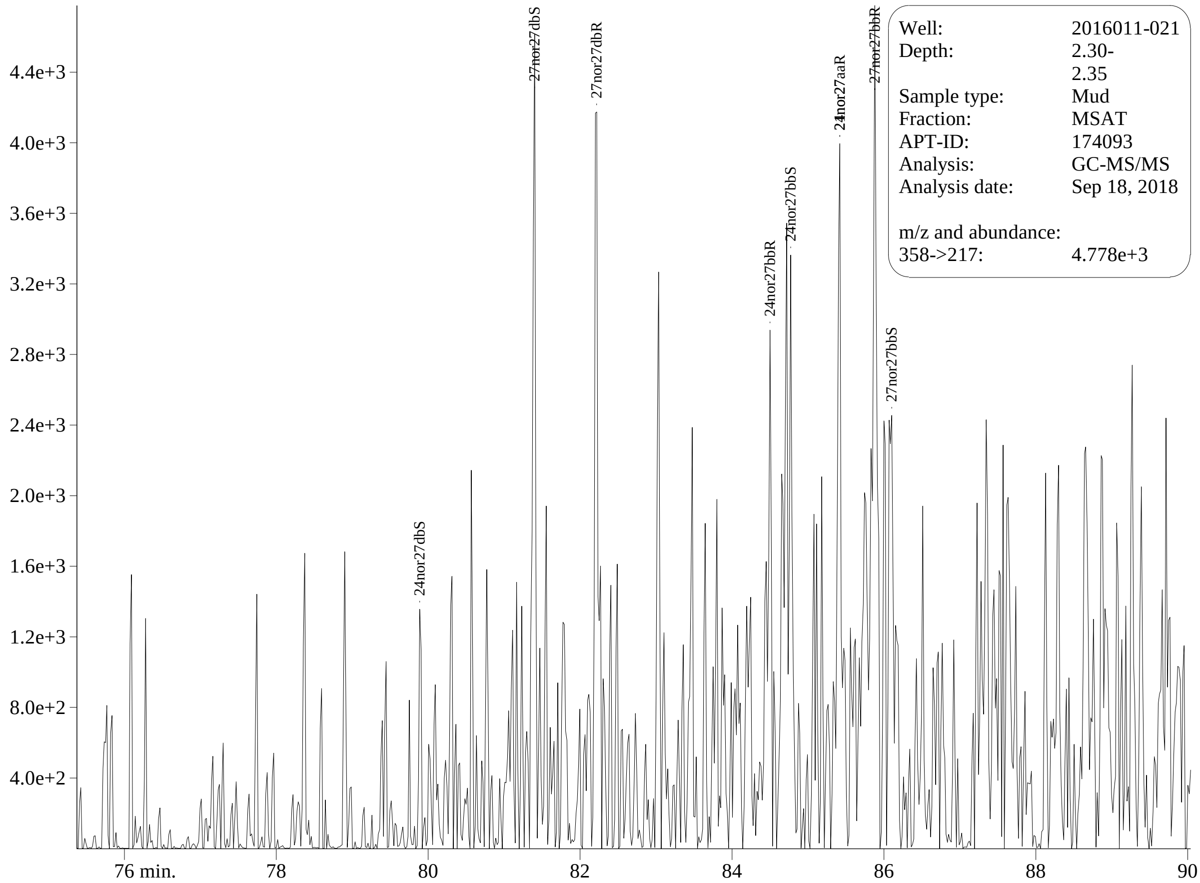
5.0e+3
4.5e+3
4.0e+3
3.5e+3
3.0e+3
2.5e+3
2.0e+3
1.5e+3
1.0e+3
5.0e+2
Bey
52 min.
54
56
58
60
62
64
66
68
70
Well: 2016011-021
Depth: 2.30-2.35
Sample type: Mud
Fraction: MSAT
APT-ID: 174093
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
274->123: 5.016e+3



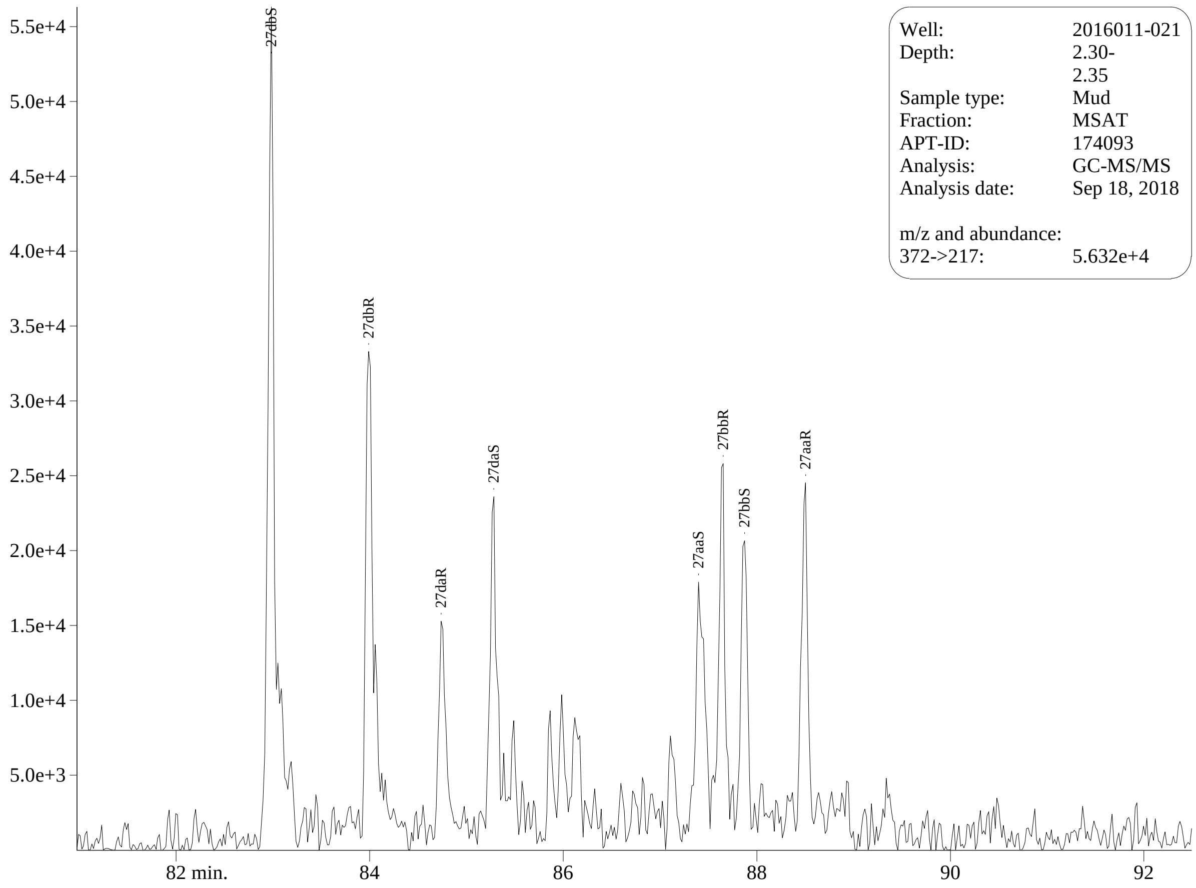
3.6e+3
3.2e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
IP
20/3
52 min.
54
56
58
60
62
64
66
68
70
Well: 2016011-021
Depth: 2.30-2.35
Sample type: Mud
Fraction: MSAT
APT-ID: 174093
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
276->123: 3.945e+3



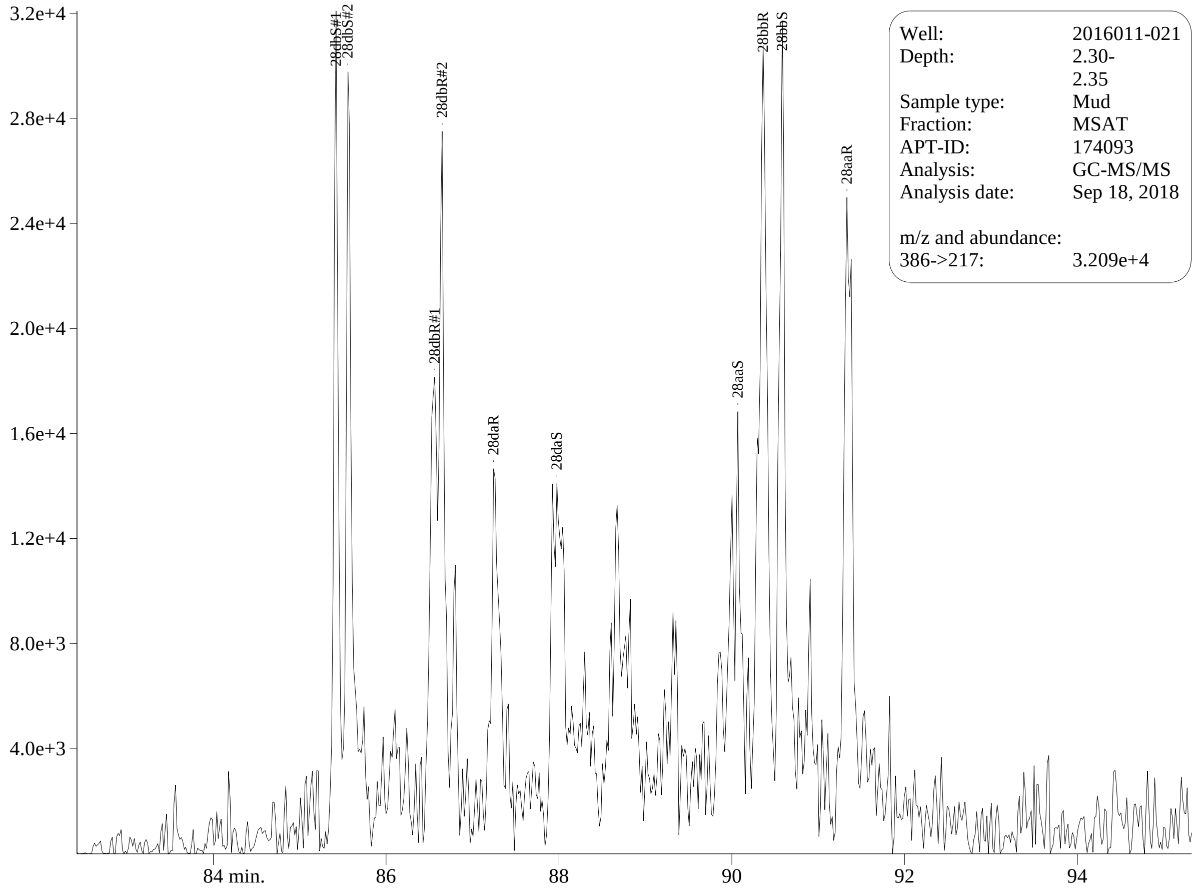
Well: 2016011-021
Depth: 2.30-2.35
Sample type: Mud
Fraction: MSAT
APT-ID: 174093
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
330->191: 4.404e+3
24/4
4.4e+3
4.0e+3
3.6e+3
3.2e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
68 min.
72
76
80
84
88



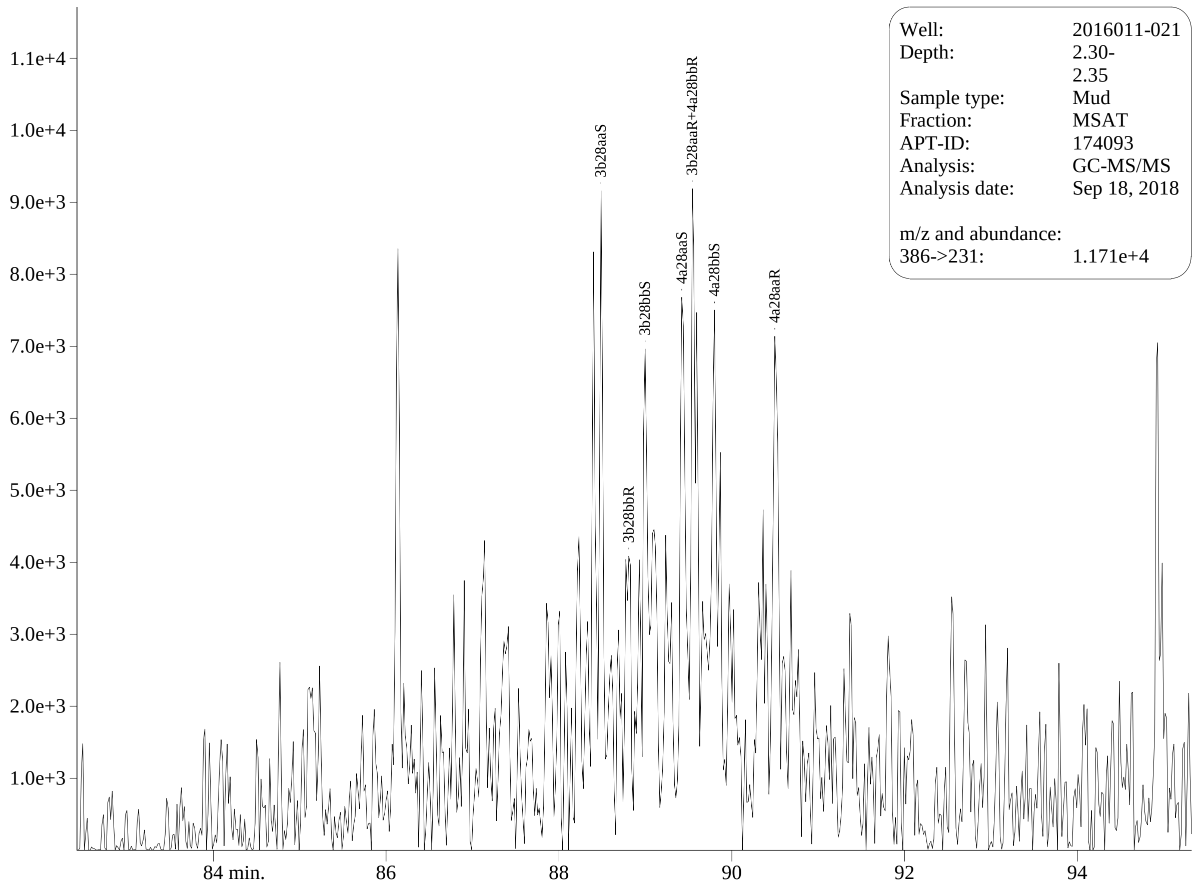
Well: 2016011-021
Depth: 2.30-2.35
Sample type: Mud
Fraction: MSAT
APT-ID: 174093
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
358->217: 4.778e+3
24nor27dbS
27nor27dbS
27nor27dbR
24nor27bbR
24nor27bbS
24nor27aaR
27nor27bbR
27nor27bbS
4.4e+3
4.0e+3
3.6e+3
3.2e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
76 min.
78
80
82
84
86
88
90

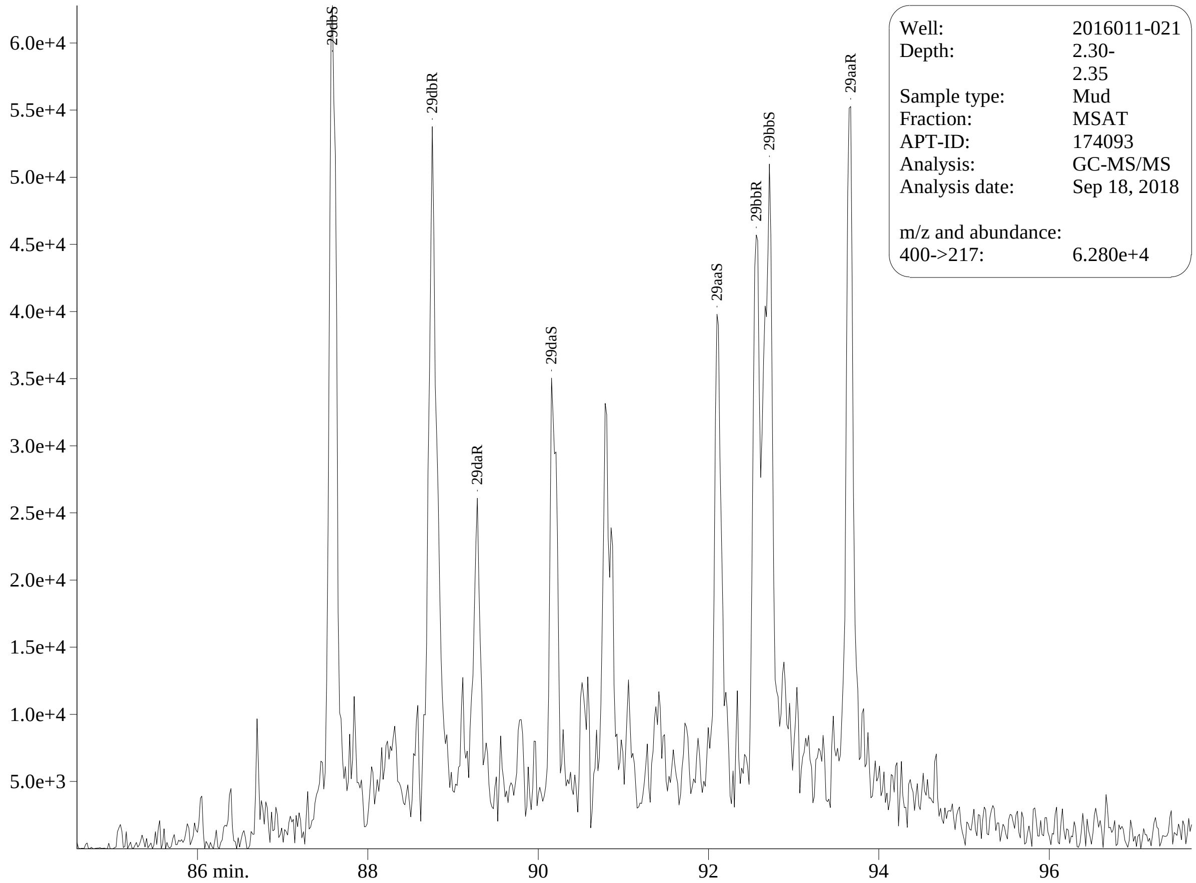


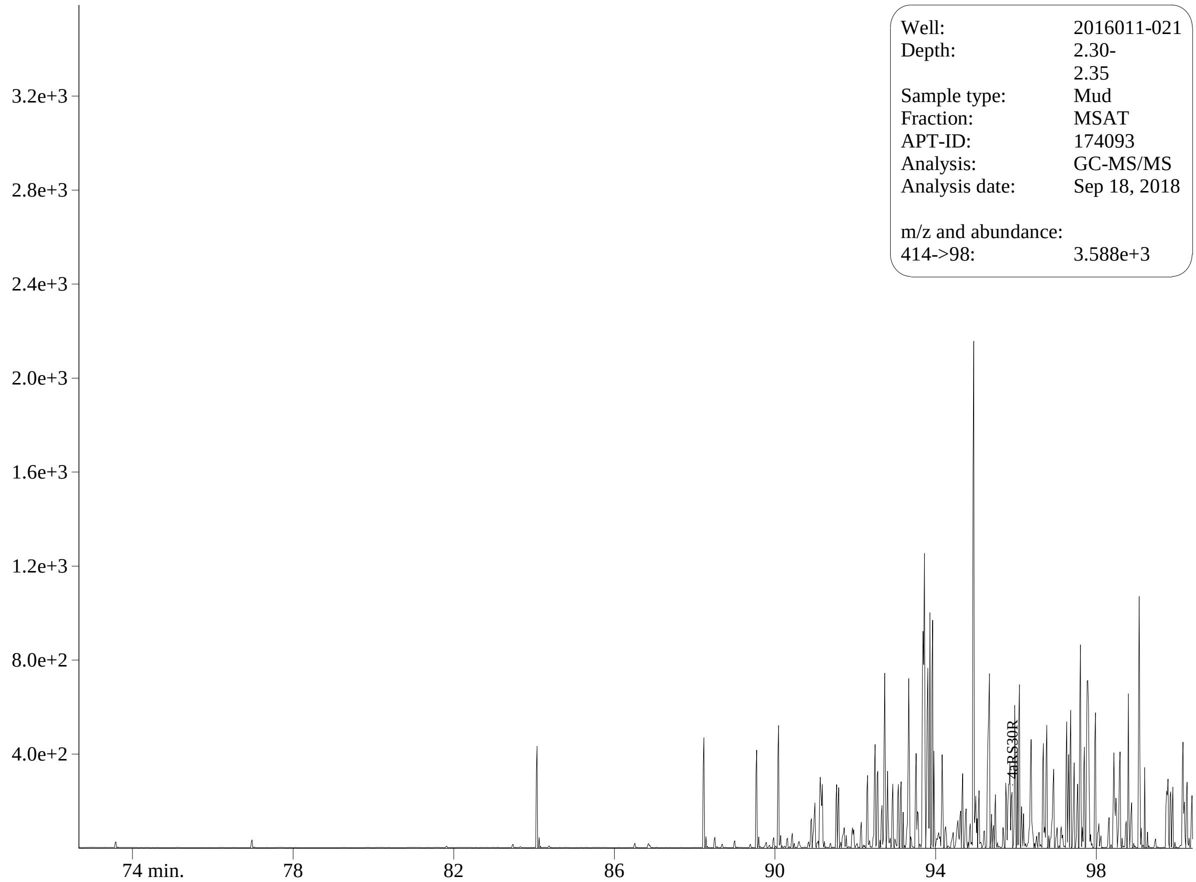
5.5e+4
5.0e+4
4.5e+4
4.0e+4
3.5e+4
3.0e+4
2.5e+4
2.0e+4
1.5e+4
1.0e+4
5.0e+3
27dbS
27dbR
27daR
27daS
27aaS
27bbR
27bbS
27aaR
82 min.
84
86
88
90
92
Well: 2016011-021
Depth: 2.30-2.35
Sample type: Mud
Fraction: MSAT
APT-ID: 174093
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
372->217: 5.632e+4

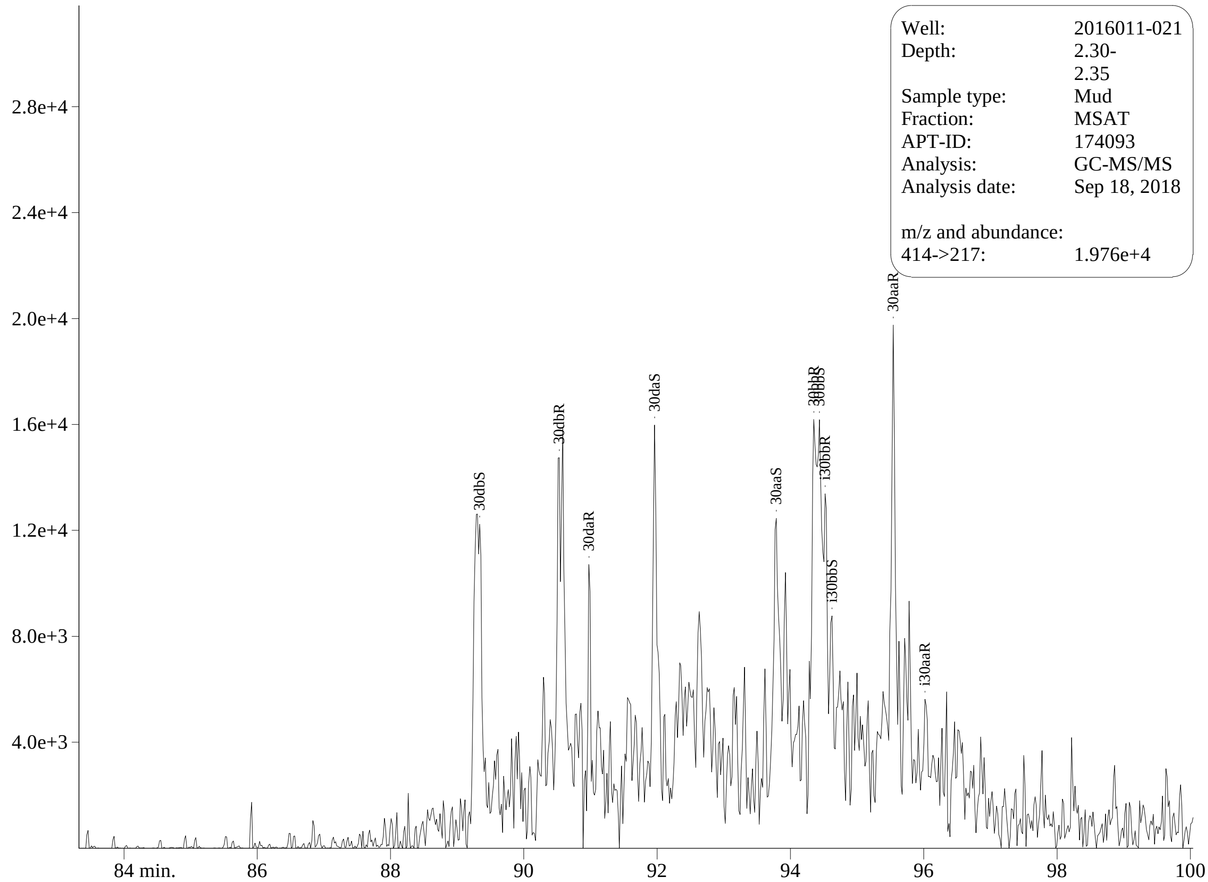


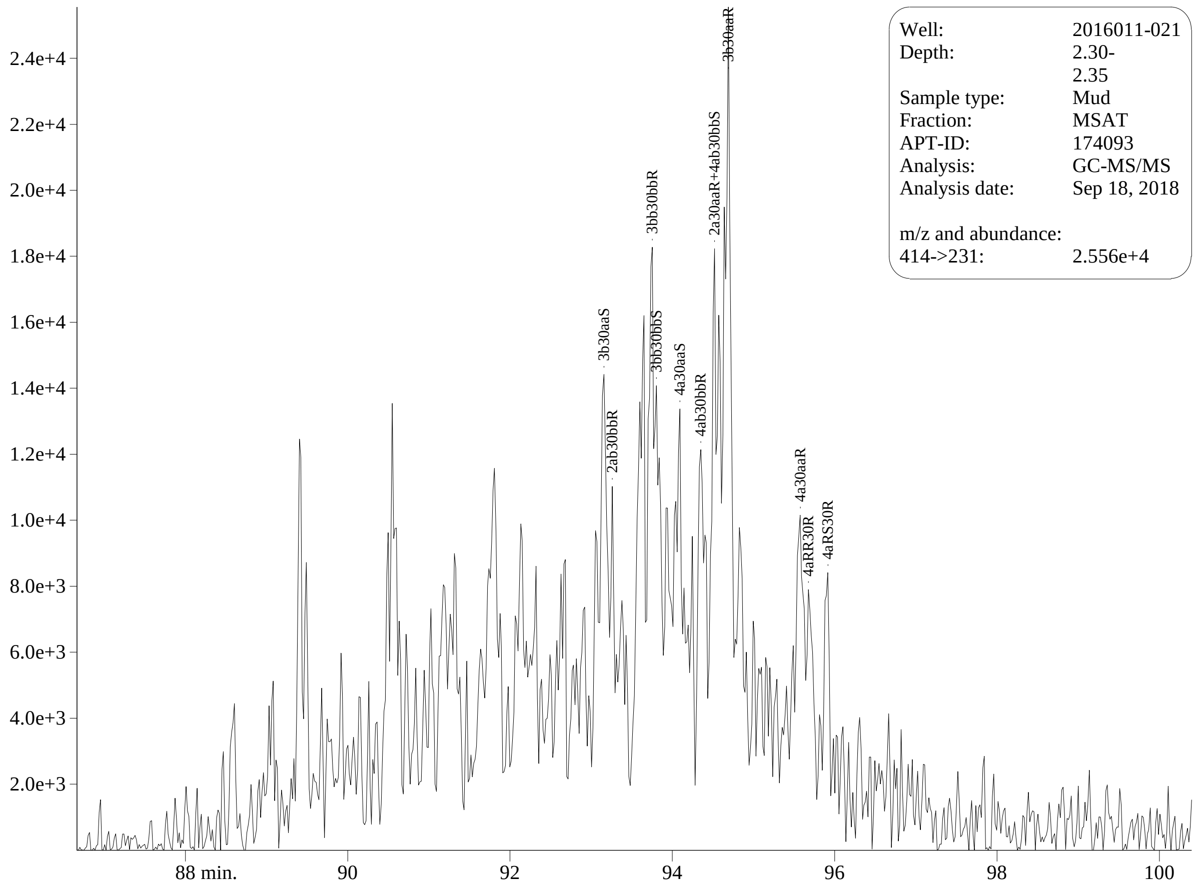
3.2e+4
2.8e+4
2.4e+4
2.0e+4
1.6e+4
1.2e+4
8.0e+3
4.0e+3
28dbS#1
28dbS#2
28dbR#2
28dbR#1
28daR
28daS
28aaS
28bbR
28bbS
28aaR
84 min.
86
88
90
92
94
Well: 2016011-021
Depth: 2.30-2.35
Sample type: Mud
Fraction: MSAT
APT-ID: 174093
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
386->217: 3.209e+4


Well: 2016011-021
Depth: 2.30-2.35
Sample type: Mud
Fraction: MSAT
APT-ID: 174093
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
386->231: 1.171e+4
3b28aaS
3b28aaR+4a28bbR
4a28aaS
4a28bbS
3b28bbS
4a28aaR
3b28bbR
1.1e+4
1.0e+4
9.0e+3
8.0e+3
7.0e+3
6.0e+3
5.0e+3
4.0e+3
3.0e+3
2.0e+3
1.0e+3
84 min.
86
88
90
92
94

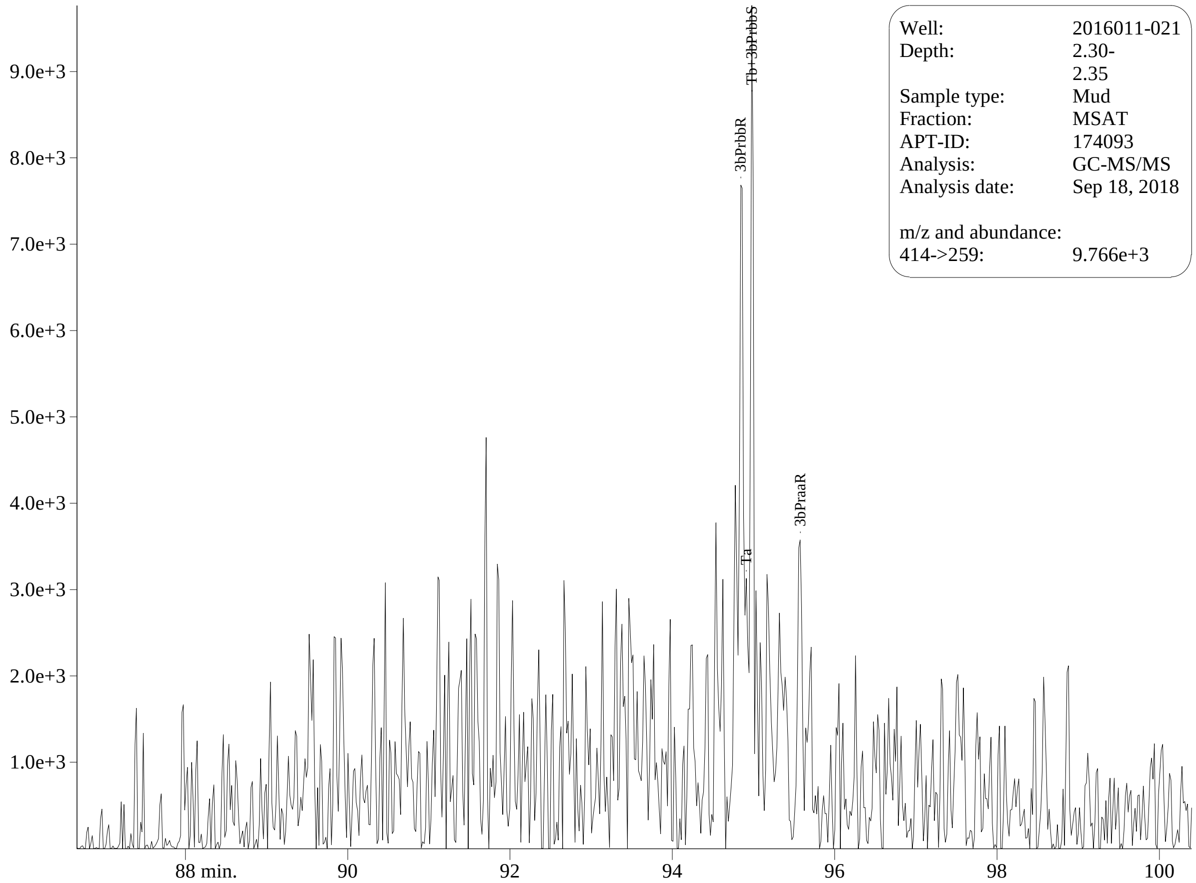

Well: 2016011-021
Depth: 2.30-2.35
Sample type: Mud
Fraction: MSAT
APT-ID: 174093
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
400->217: 6.280e+4
29dbS
29dbR
29daR
29daS
29aaS
29bbR
29bbS
29aaR
6.0e+4
5.5e+4
5.0e+4
4.5e+4
4.0e+4
3.5e+4
3.0e+4
2.5e+4
2.0e+4
1.5e+4
1.0e+4
5.0e+3
86 min.
88
90
92
94
96


Well: 2016011-021
Depth: 2.30-2.35
Sample type: Mud
Fraction: MSAT
APT-ID: 174093
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->98: 3.588e+3
4aRS30R
3.2e+3
2.8e+3
2.4e+3
2.0e+3
1.6e+3
1.2e+3
8.0e+2
4.0e+2
74 min.
78
82
86
90
94
98

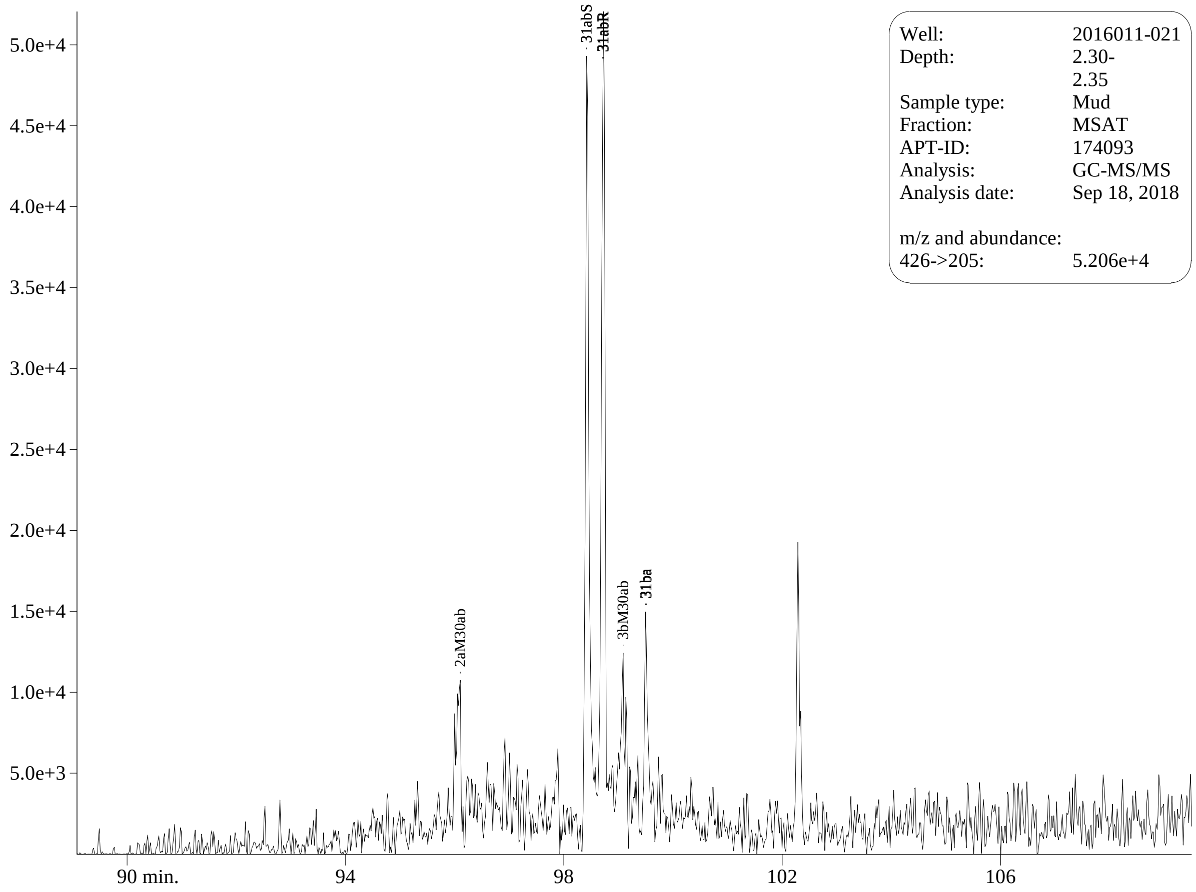

Well: 2016011-021
Depth: 2.30-2.35
Sample type: Mud
Fraction: MSAT
APT-ID: 174093
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->217: 1.976e+4
30dbS
30dbR
30daR
30daS
30aaS
30bbR
30bbS
i30bbR
i30bbS
30aaR
i30aaR
2.8e+4
2.4e+4
2.0e+4
1.6e+4
1.2e+4
8.0e+3
4.0e+3
84 min.
86
88
90
92
94
96
98
100

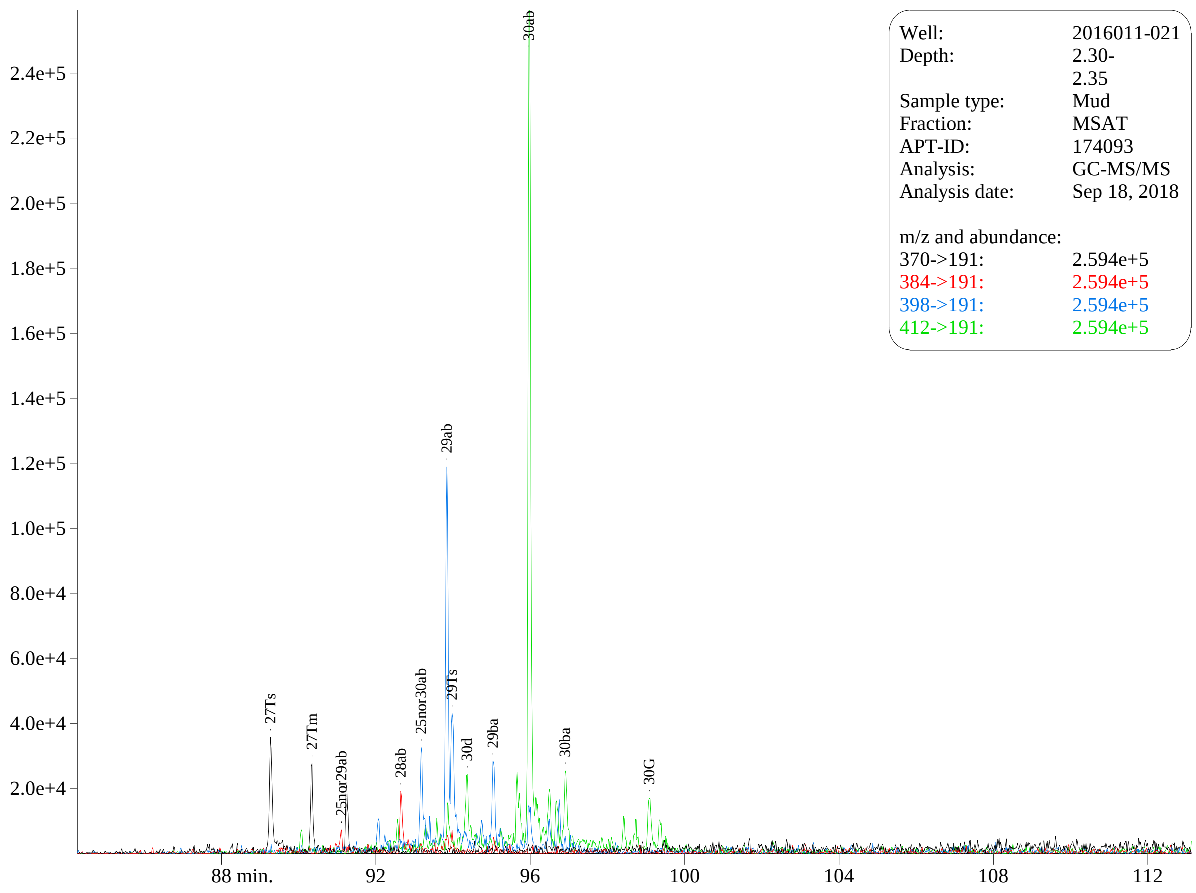


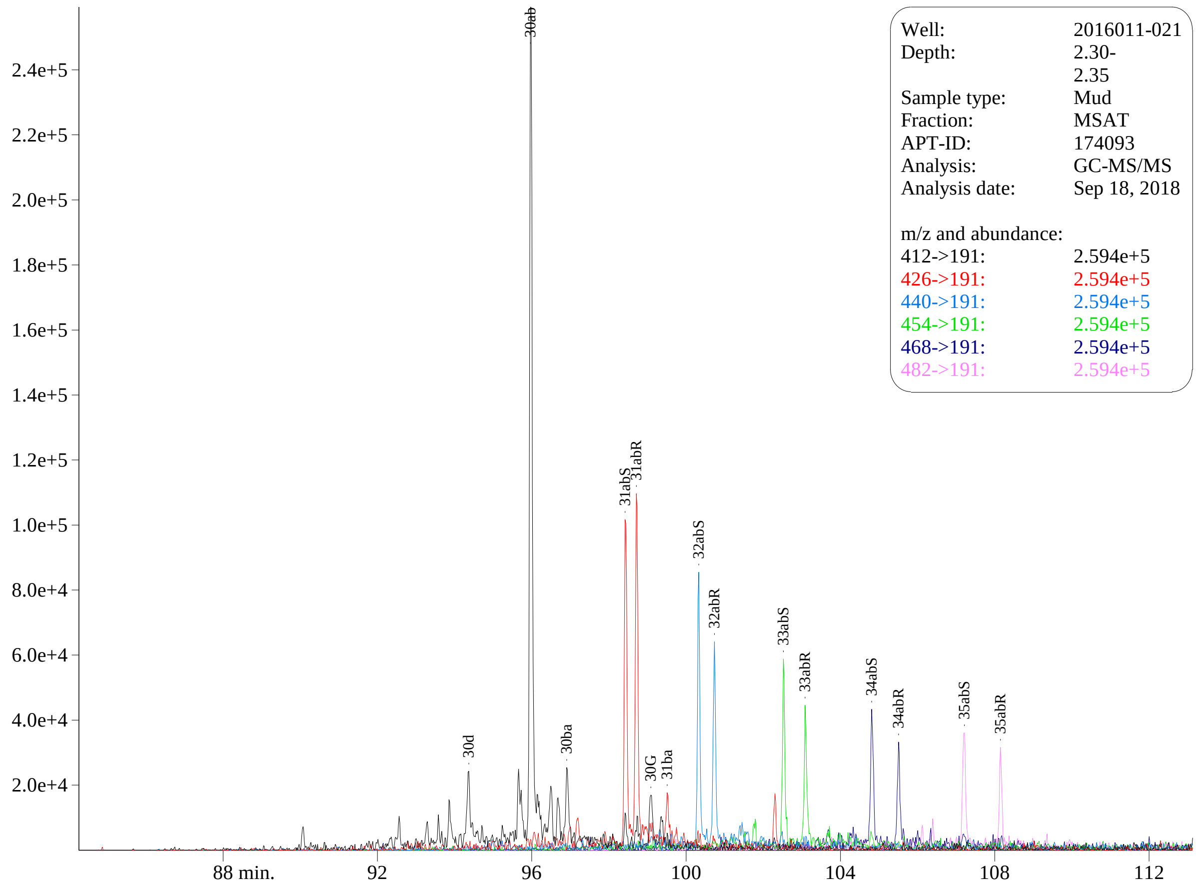
Well: 2016011-021
Depth: 2.30-2.35
Sample type: Mud
Fraction: MSAT
APT-ID: 174093
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->231: 2.556e+4
3b30aaR
2a30aaR+4ab30bbS
3bb30bbR
3b30aaS
3bb30bbS
4a30aaS
4ab30bbR
2ab30bbR
4a30aaR
4aRR30R
4aRS30R
2.4e+4
2.2e+4
2.0e+4
1.8e+4
1.6e+4
1.4e+4
1.2e+4
1.0e+4
8.0e+3
6.0e+3
4.0e+3
2.0e+3
88 min.
90
92
94
96
98
100



Well: 2016011-021
Depth: 2.30-2.35
Sample type: Mud
Fraction: MSAT
APT-ID: 174093
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
414->259: 9.766e+3
Tb+3bPrbbS
3bPrbbR
3bPraaR
Ta
9.0e+3
8.0e+3
7.0e+3
6.0e+3
5.0e+3
4.0e+3
3.0e+3
2.0e+3
1.0e+3
88 min.
90
92
94
96
98
100

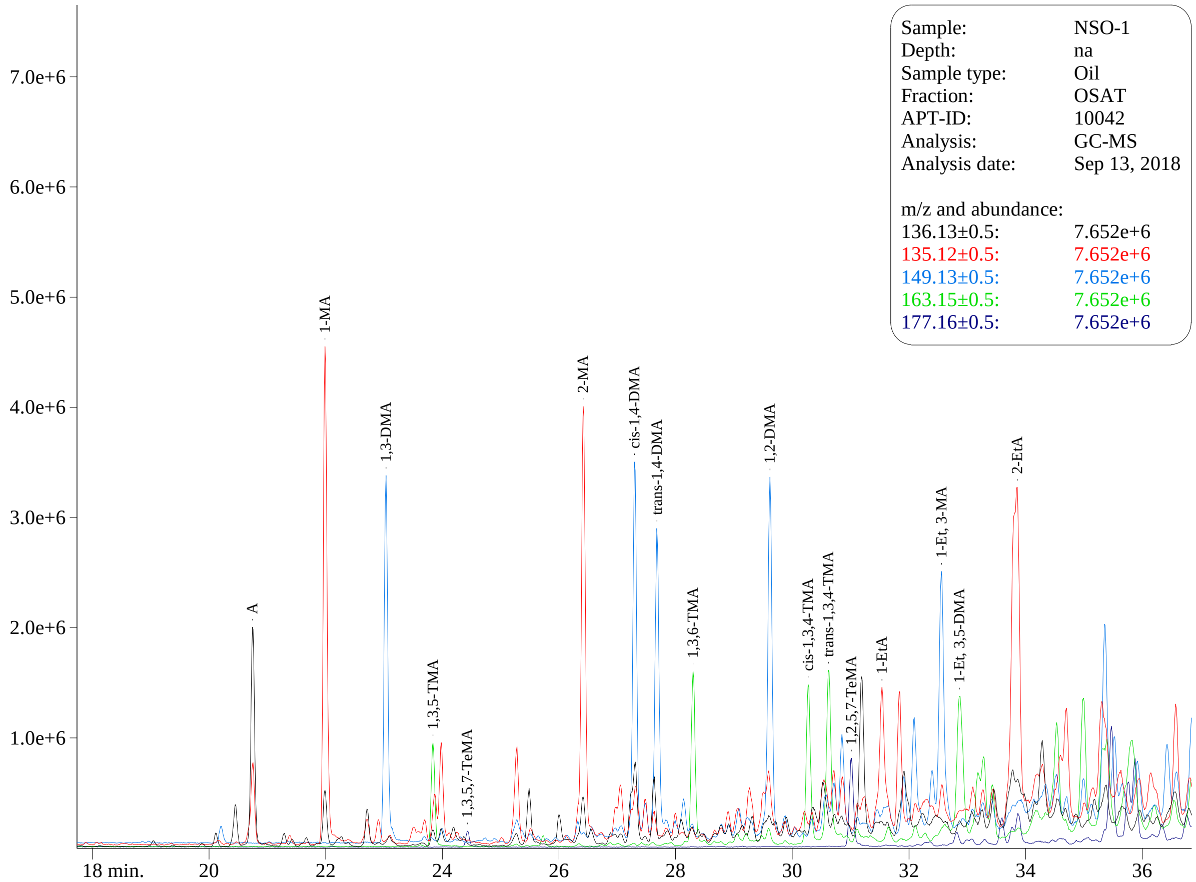

5.0e+4
4.5e+4
4.0e+4
3.5e+4
3.0e+4
2.5e+4
2.0e+4
1.5e+4
1.0e+4
5.0e+3
90 min.
94
98
102
106
31abS
31abR
2aM30ab
3bM30ab
31ba
Well: 2016011-021
Depth: 2.30-2.35
Sample type: Mud
Fraction: MSAT
APT-ID: 174093
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
426->205: 5.206e+4

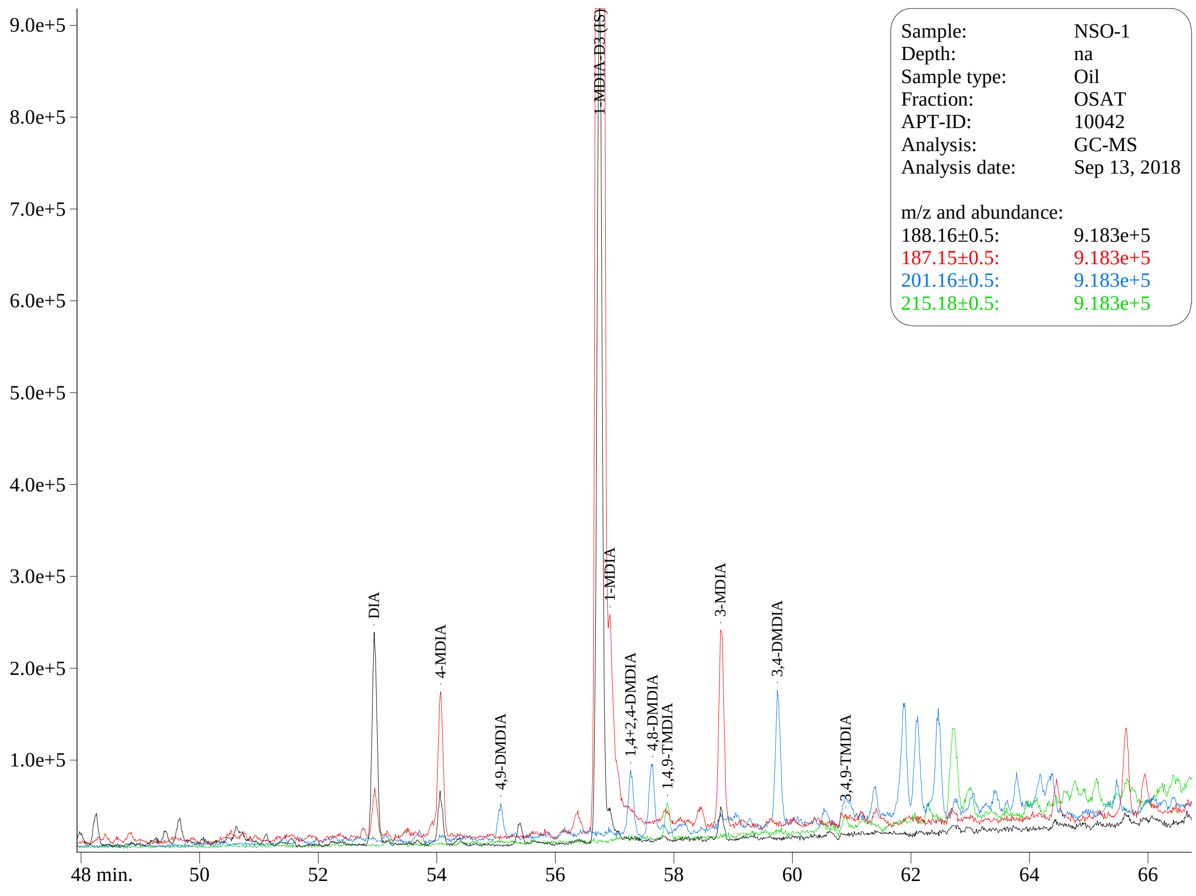

2.4e+5
2.2e+5
2.0e+5
1.8e+5
1.6e+5
1.4e+5
1.2e+5
1.0e+5
8.0e+4
6.0e+4
4.0e+4
2.0e+4
88 min.
92
96
100
104
108
112
30ab
29ab
27Ts
27Tm
25nor29ab
28ab
25nor30ab
29Ts
30d
29ba
30ba
30G
Well: 2016011-021
Depth: 2.30-2.35
Sample type: Mud
Fraction: MSAT
APT-ID: 174093
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
370->191: 2.594e+5
384->191: 2.594e+5
398->191: 2.594e+5
412->191: 2.594e+5

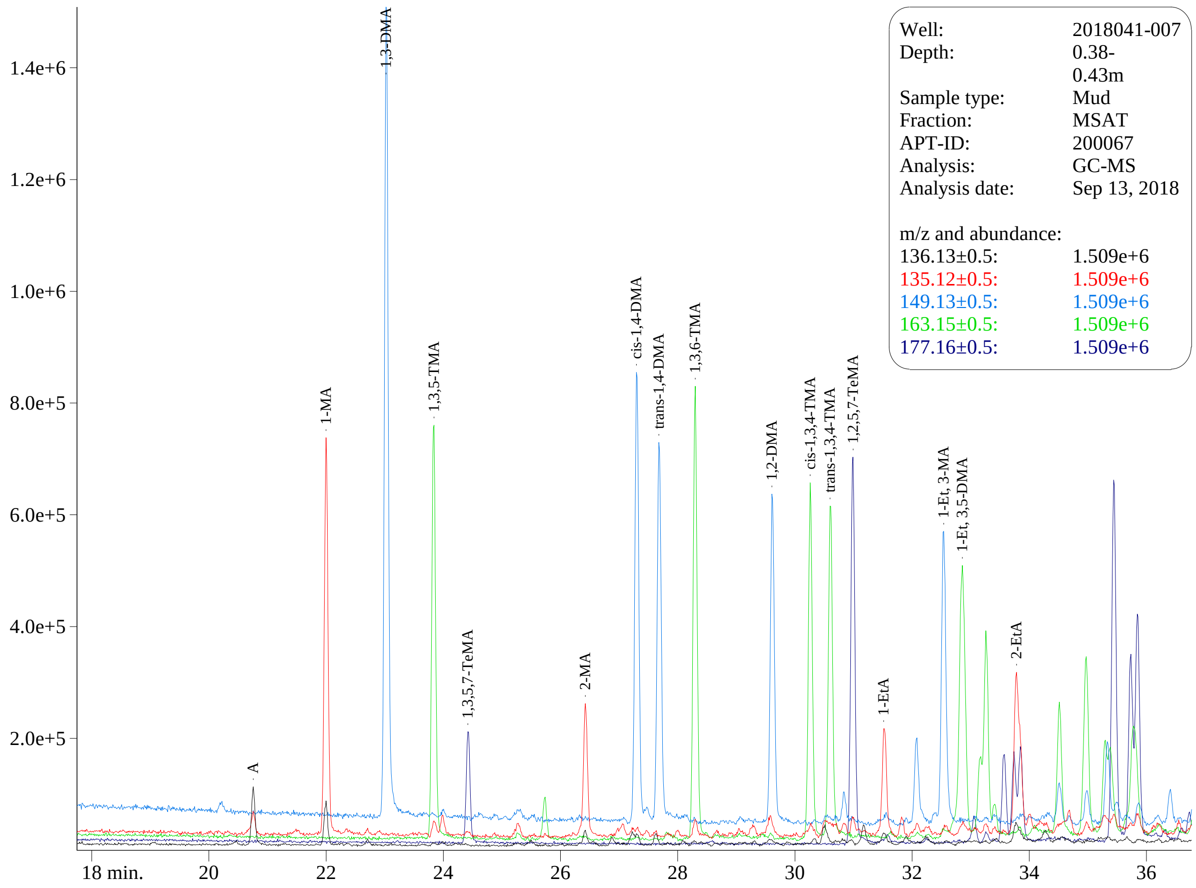


Well: 2016011-021
Depth: 2.30-2.35
Sample type: Mud
Fraction: MSAT
APT-ID: 174093
Analysis: GC-MS/MS
Analysis date: Sep 18, 2018
m/z and abundance:
412->191: 2.594e+5
426->191: 2.594e+5
440->191: 2.594e+5
454->191: 2.594e+5
468->191: 2.594e+5
482->191: 2.594e+5
30ab
31abS
31abR
32abS
32abR
33abS
33abR
34abS
34abR
35abS
35abR
30d
30ba
30G
31ba
2.4e+5
2.2e+5
2.0e+5
1.8e+5
1.6e+5
1.4e+5
1.2e+5
1.0e+5
8.0e+4
6.0e+4
4.0e+4
2.0e+4
88 min.
92
96
100
104
108
112

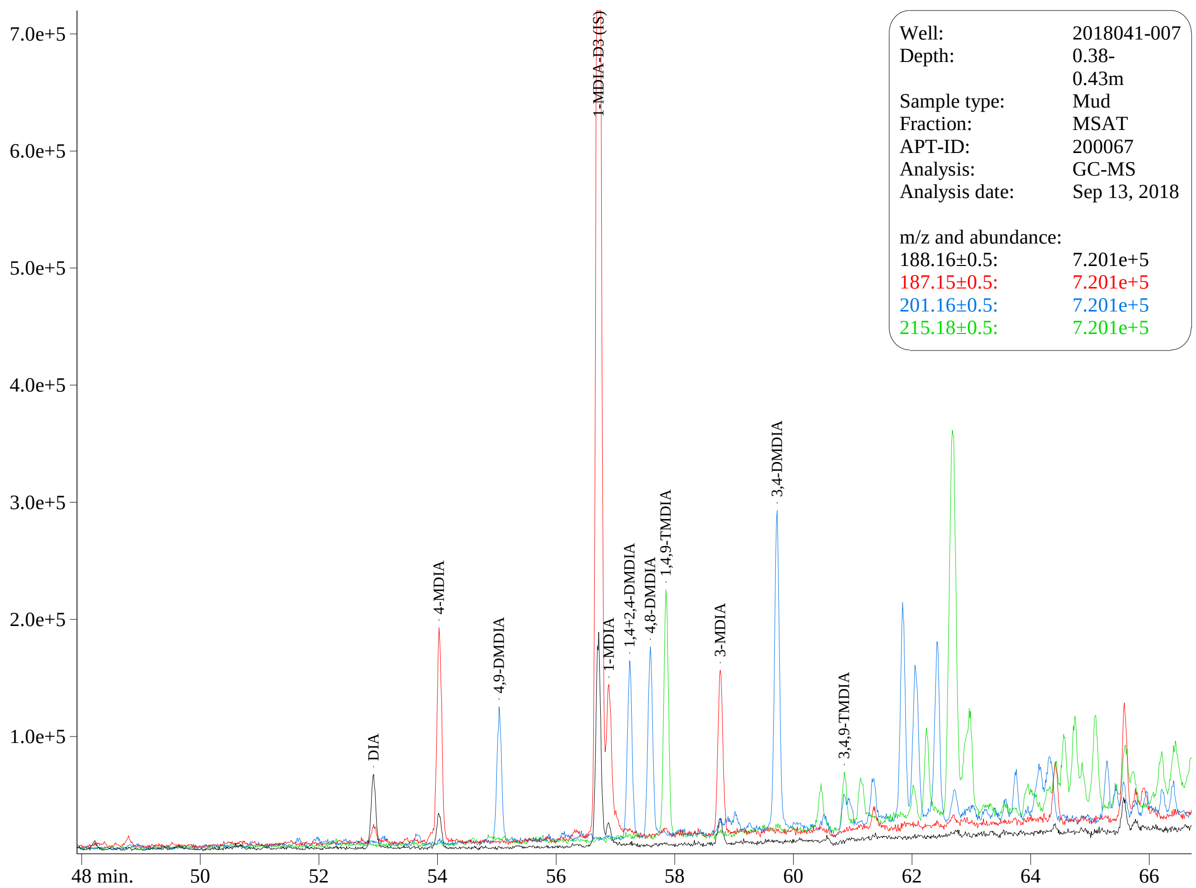
GC-MS Chromatograms of Diamandoids


Sample: NSO-1
Depth: na
Sample type: Oil
Fraction: OSAT
APT-ID: 10042
Analysis: GC-MS
Analysis date: Sep 13, 2018
m/z and abundance:
136.13±0.5: 7.652e+6
135.12±0.5: 7.652e+6
149.13±0.5: 7.652e+6
163.15±0.5: 7.652e+6
177.16±0.5: 7.652e+6
A
1-MA
1,3-DMA
1,3,5-TMA
1,3,5,7-TeMA
2-MA
cis-1,4-DMA
trans-1,4-DMA
1,3,6-TMA
1,2-DMA
cis-1,3,4-TMA
trans-1,3,4-TMA
1,2,5,7-TeMA
1-EtA
1-Et, 3-MA
1-Et, 3,5-DMA
2-EtA
7.0e+6
6.0e+6
5.0e+6
4.0e+6
3.0e+6
2.0e+6
1.0e+6
18 min.
20
22
24
26
28
30
32
34
36

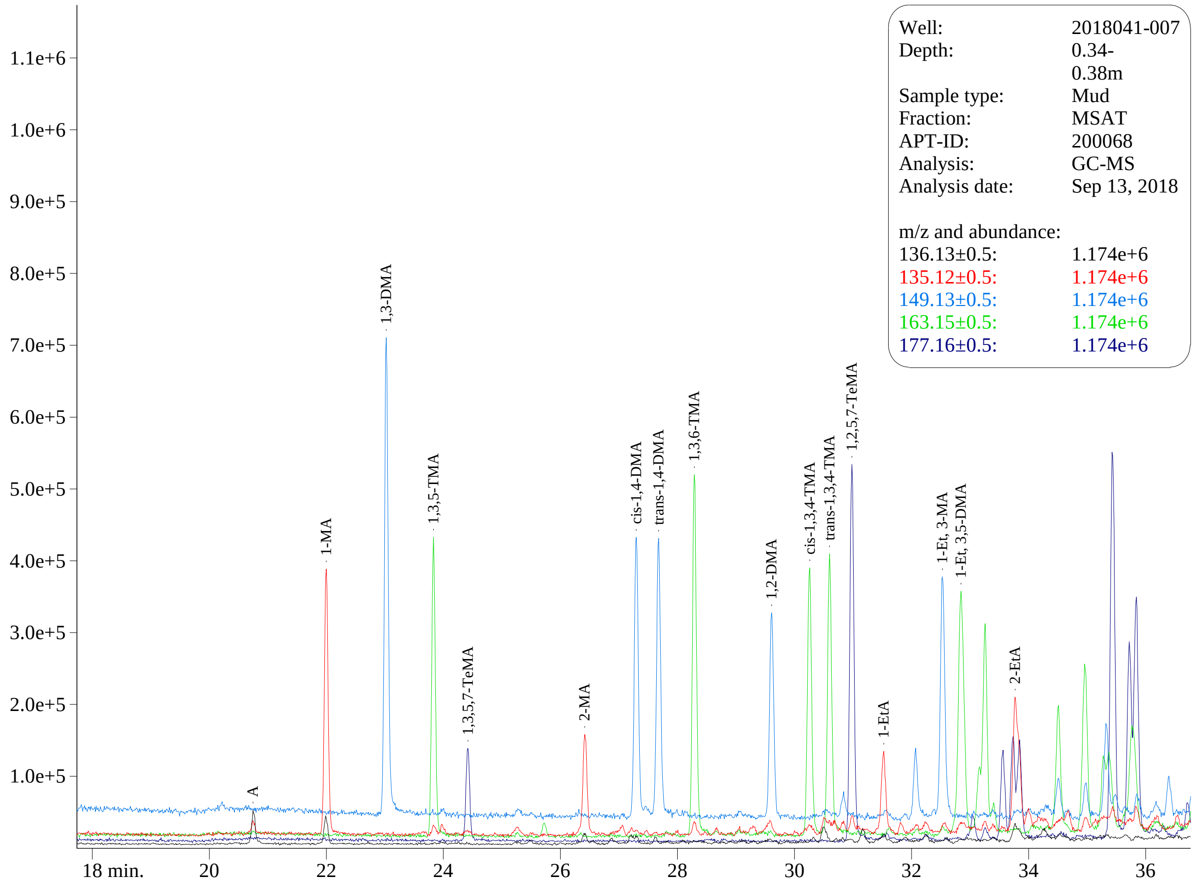

Sample: NSO-1
Depth: na
Sample type: Oil
Fraction: OSAT
APT-ID: 10042
Analysis: GC-MS
Analysis date: Sep 13, 2018
m/z and abundance:
188.16±0.5: 9.183e+5
187.15±0.5: 9.183e+5
201.16±0.5: 9.183e+5
215.18±0.5: 9.183e+5
DIA
4-MDIA
4,9-DMDIA
1-MDIA-D3 (IS)
1-MDIA
1,4+2,4-DMDIA
4,8-DMDIA
1,4,9-TMDIA
3-MDIA
3,4-DMDIA
3,4,9-TMDIA
9.0e+5
8.0e+5
7.0e+5
6.0e+5
5.0e+5
4.0e+5
3.0e+5
2.0e+5
1.0e+5
48 min.
50
52
54
56
58
60
62
64
66

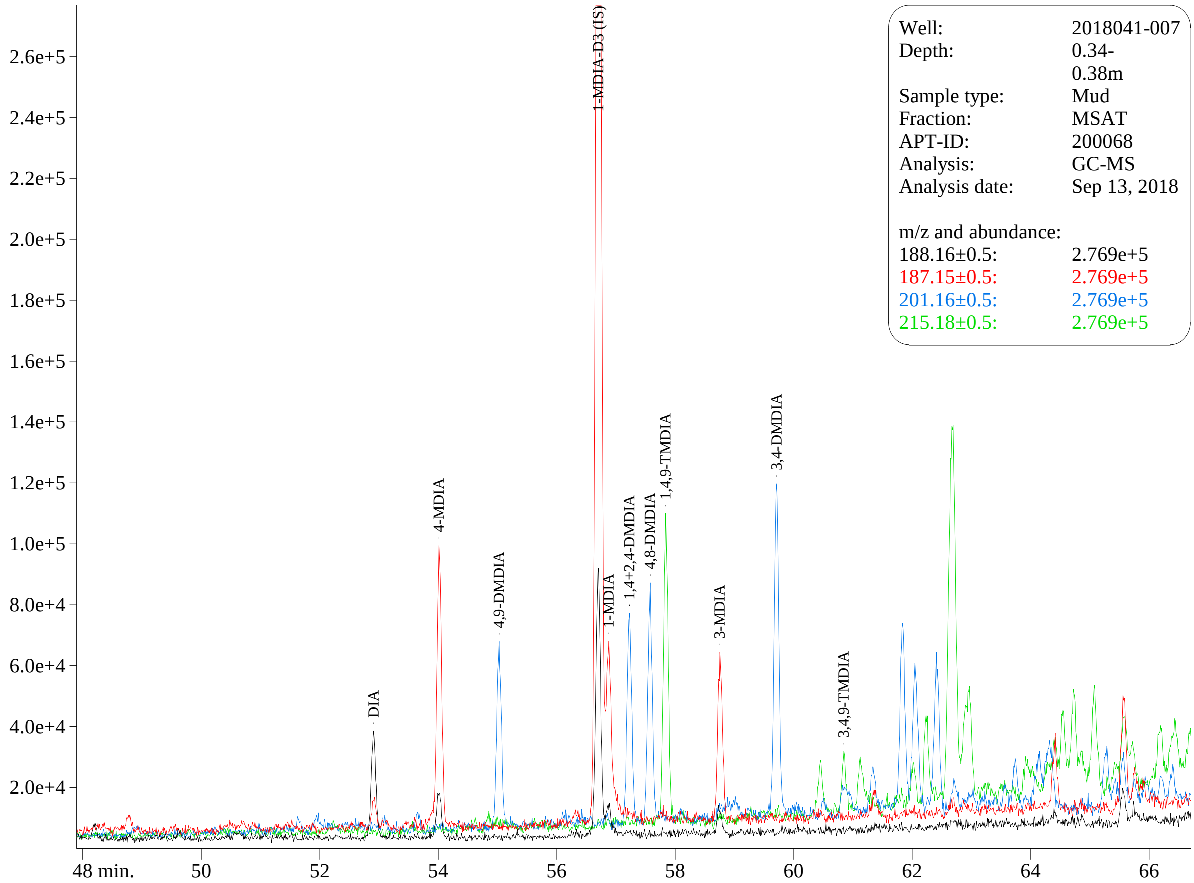


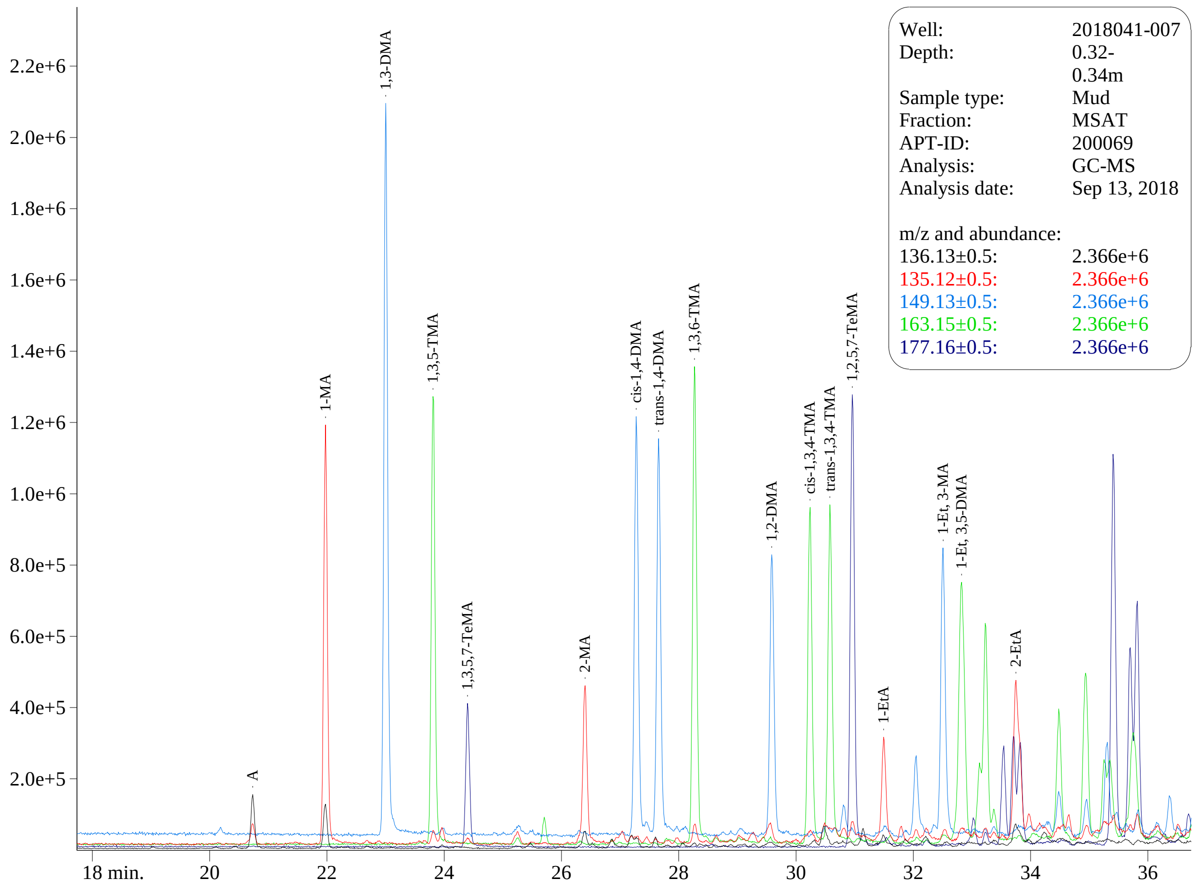
1.4e+6
1.2e+6
1.0e+6
8.0e+5
6.0e+5
4.0e+5
2.0e+5
18 min.
20
22
24
26
28
30
32
34
36
A
1-MA
1,3-DMA
1,3,5-TMA
1,3,5,7-TeMA
2-MA
cis-1,4-DMA
trans-1,4-DMA
1,3,6-TMA
1,2-DMA
cis-1,3,4-TMA
trans-1,3,4-TMA
1,2,5,7-TeMA
1-EtA
1-Et, 3-MA
1-Et, 3,5-DMA
2-EtA
Well: 2018041-007
Depth: 0.38-0.43m
Sample type: Mud
Fraction: MSAT
APT-ID: 200067
Analysis: GC-MS
Analysis date: Sep 13, 2018
m/z and abundance:
136.13±0.5: 1.509e+6
135.12±0.5: 1.509e+6
149.13±0.5: 1.509e+6
163.15±0.5: 1.509e+6
177.16±0.5: 1.509e+6

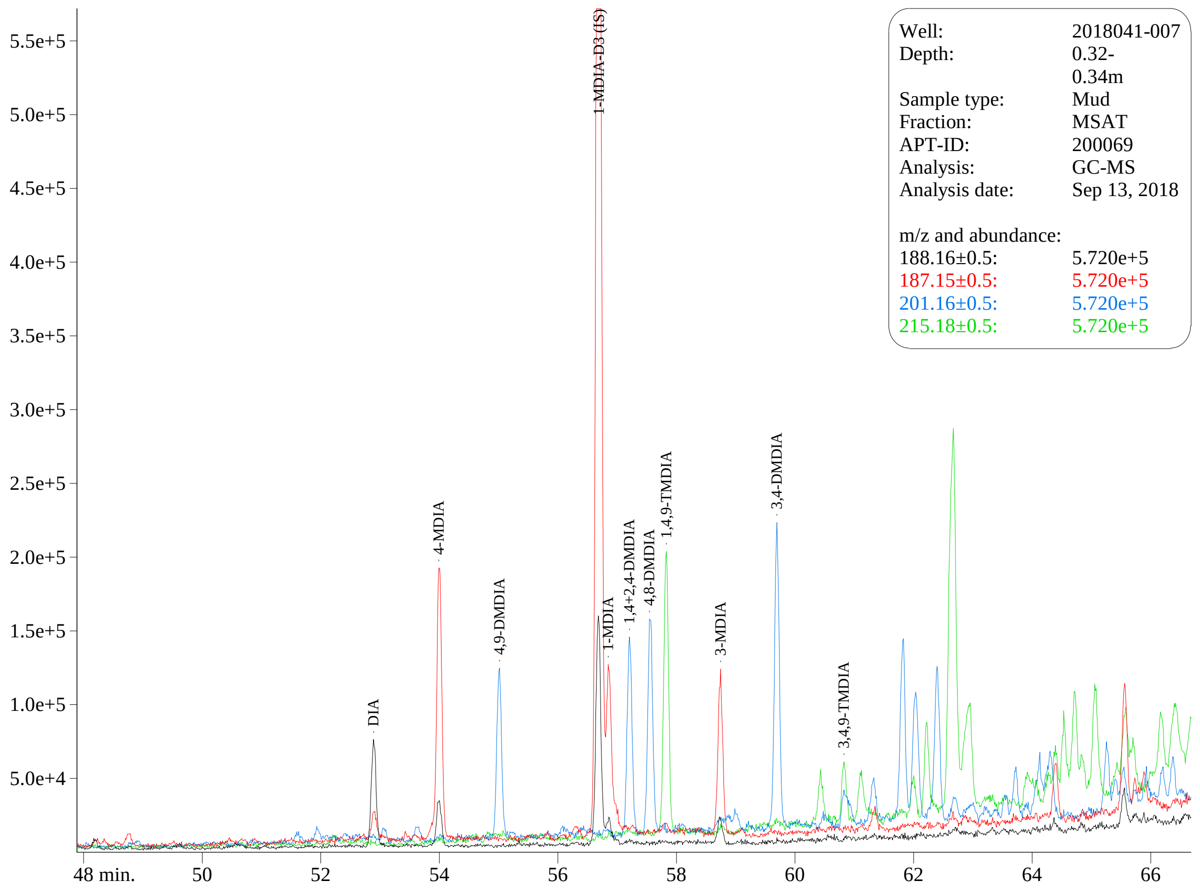


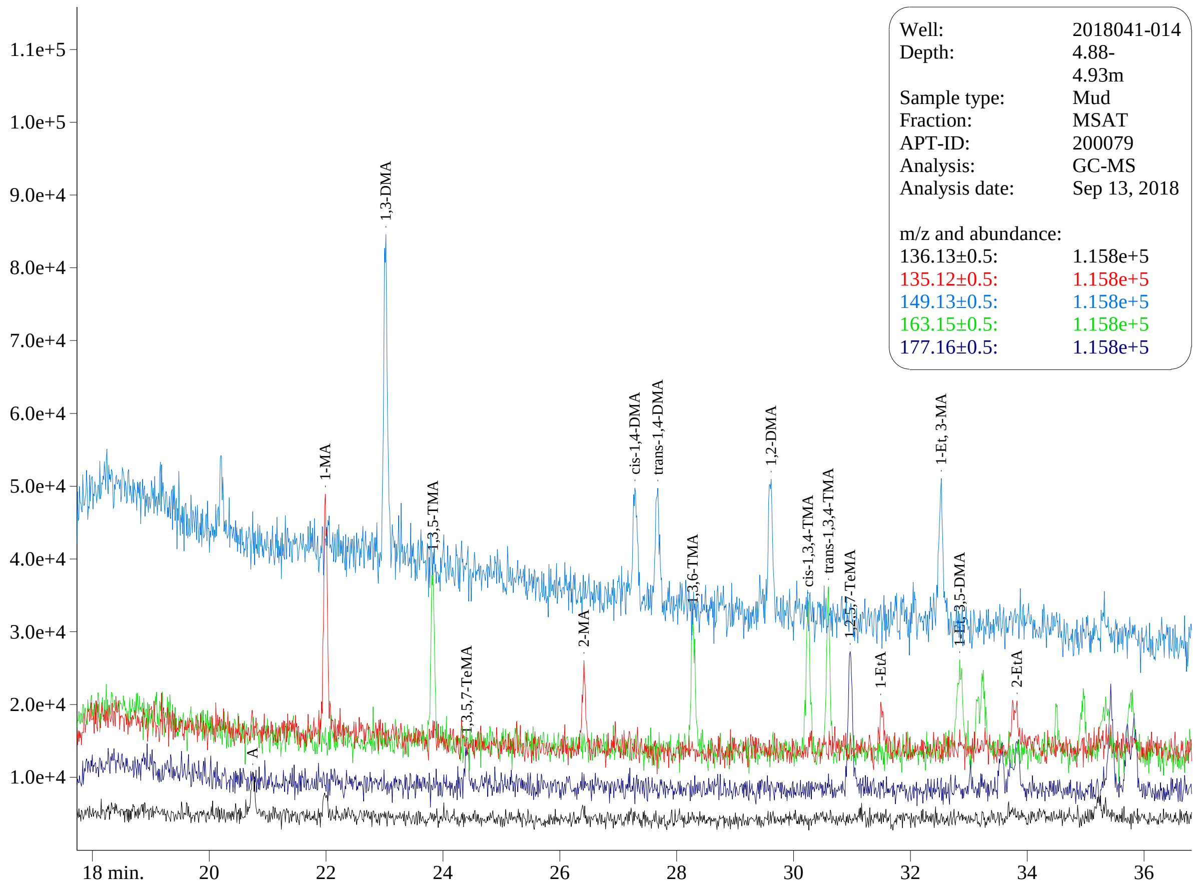
7.0e+5
6.0e+5
5.0e+5
4.0e+5
3.0e+5
2.0e+5
1.0e+5
48 min.
50
52
54
56
58
60
62
64
66
DIA
4-MDIA
4,9-DMDIA
1-MDIA-D3 (IS)
1-MDIA
1,4+2,4-DMDIA
4,8-DMDIA
1,4,9-TMDIA
3-MDIA
3,4-DMDIA
3,4,9-TMDIA
Well: 2018041-007
Depth: 0.38-0.43m
Sample type: Mud
Fraction: MSAT
APT-ID: 200067
Analysis: GC-MS
Analysis date: Sep 13, 2018
m/z and abundance:
188.16±0.5: 7.201e+5
187.15±0.5: 7.201e+5
201.16±0.5: 7.201e+5
215.18±0.5: 7.201e+5


Well: 2018041-007
Depth: 0.34-0.38m
Sample type: Mud
Fraction: MSAT
APT-ID: 200068
Analysis: GC-MS
Analysis date: Sep 13, 2018
m/z and abundance:
136.13±0.5: 1.174e+6
135.12±0.5: 1.174e+6
149.13±0.5: 1.174e+6
163.15±0.5: 1.174e+6
177.16±0.5: 1.174e+6
A
1-MA
1,3-DMA
1,3,5-TMA
1,3,5,7-TeMA
2-MA
cis-1,4-DMA
trans-1,4-DMA
1,3,6-TMA
1,2-DMA
cis-1,3,4-TMA
trans-1,3,4-TMA
1,2,5,7-TeMA
1-EtA
1-Et, 3-MA
1-Et, 3,5-DMA
2-EtA
18 min.
20
22
24
26
28
30
32
34
36
1.1e+6
1.0e+6
9.0e+5
8.0e+5
7.0e+5
6.0e+5
5.0e+5
4.0e+5
3.0e+5
2.0e+5
1.0e+5

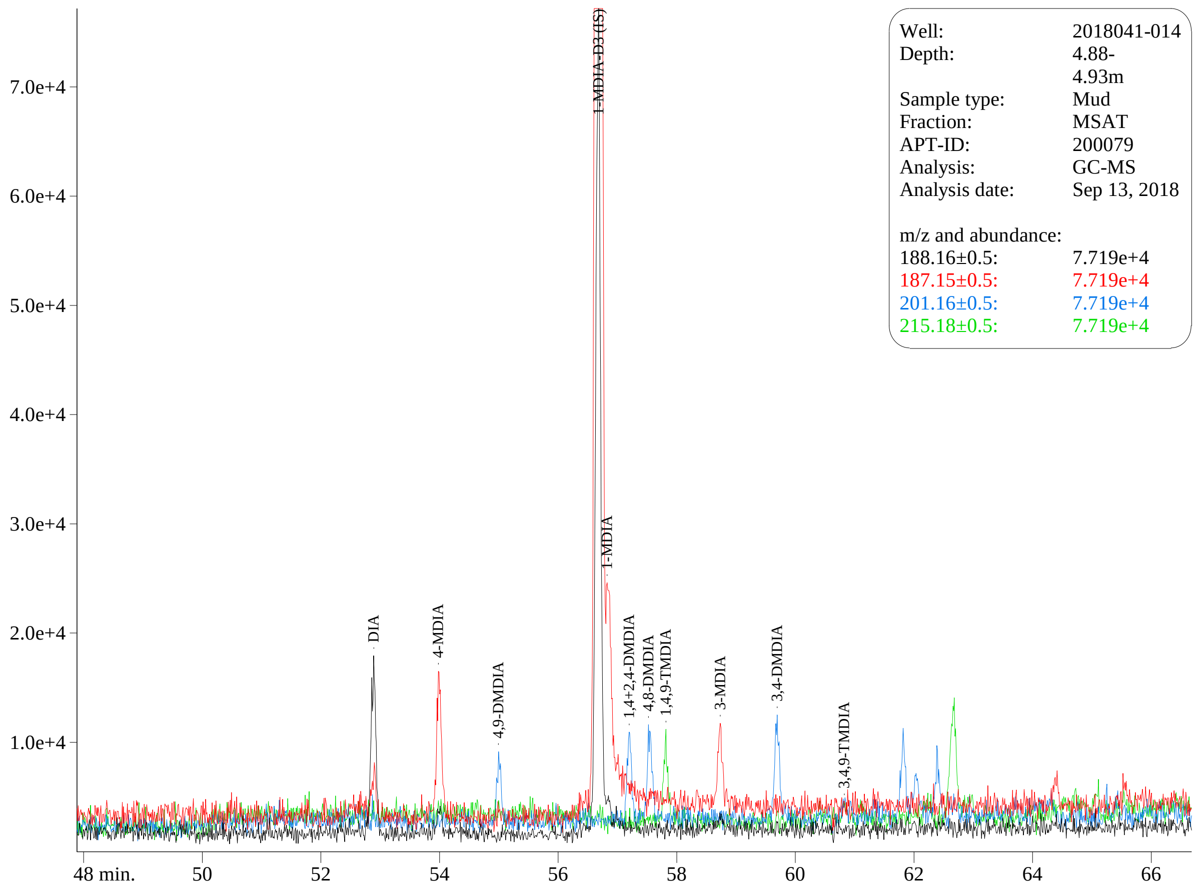

Well: 2018041-007
Depth: 0.34-0.38m
Sample type: Mud
Fraction: MSAT
APT-ID: 200068
Analysis: GC-MS
Analysis date: Sep 13, 2018
m/z and abundance:
188.16±0.5: 2.769e+5
187.15±0.5: 2.769e+5
201.16±0.5: 2.769e+5
215.18±0.5: 2.769e+5
DIA
4-MDIA
4,9-DMDIA
1-MDIA-D3 (IS)
1-MDIA
1,4+2,4-DMDIA
4,8-DMDIA
1,4,9-TMDIA
3-MDIA
3,4-DMDIA
3,4,9-TMDIA
48 min.
50
52
54
56
58
60
62
64
66
2.6e+5
2.4e+5
2.2e+5
2.0e+5
1.8e+5
1.6e+5
1.4e+5
1.2e+5
1.0e+5
8.0e+4
6.0e+4
4.0e+4
2.0e+4


Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-MS
Analysis date: Sep 13, 2018
m/z and abundance:
136.13±0.5: 2.366e+6
135.12±0.5: 2.366e+6
149.13±0.5: 2.366e+6
163.15±0.5: 2.366e+6
177.16±0.5: 2.366e+6
A
1-MA
1,3-DMA
1,3,5-TMA
1,3,5,7-TeMA
2-MA
cis-1,4-DMA
trans-1,4-DMA
1,3,6-TMA
1,2-DMA
cis-1,3,4-TMA
trans-1,3,4-TMA
1,2,5,7-TeMA
1-EtA
1-Et, 3-MA
1-Et, 3,5-DMA
2-EtA
18 min.
20
22
24
26
28
30
32
34
36
2.2e+6
2.0e+6
1.8e+6
1.6e+6
1.4e+6
1.2e+6
1.0e+6
8.0e+5
6.0e+5
4.0e+5
2.0e+5

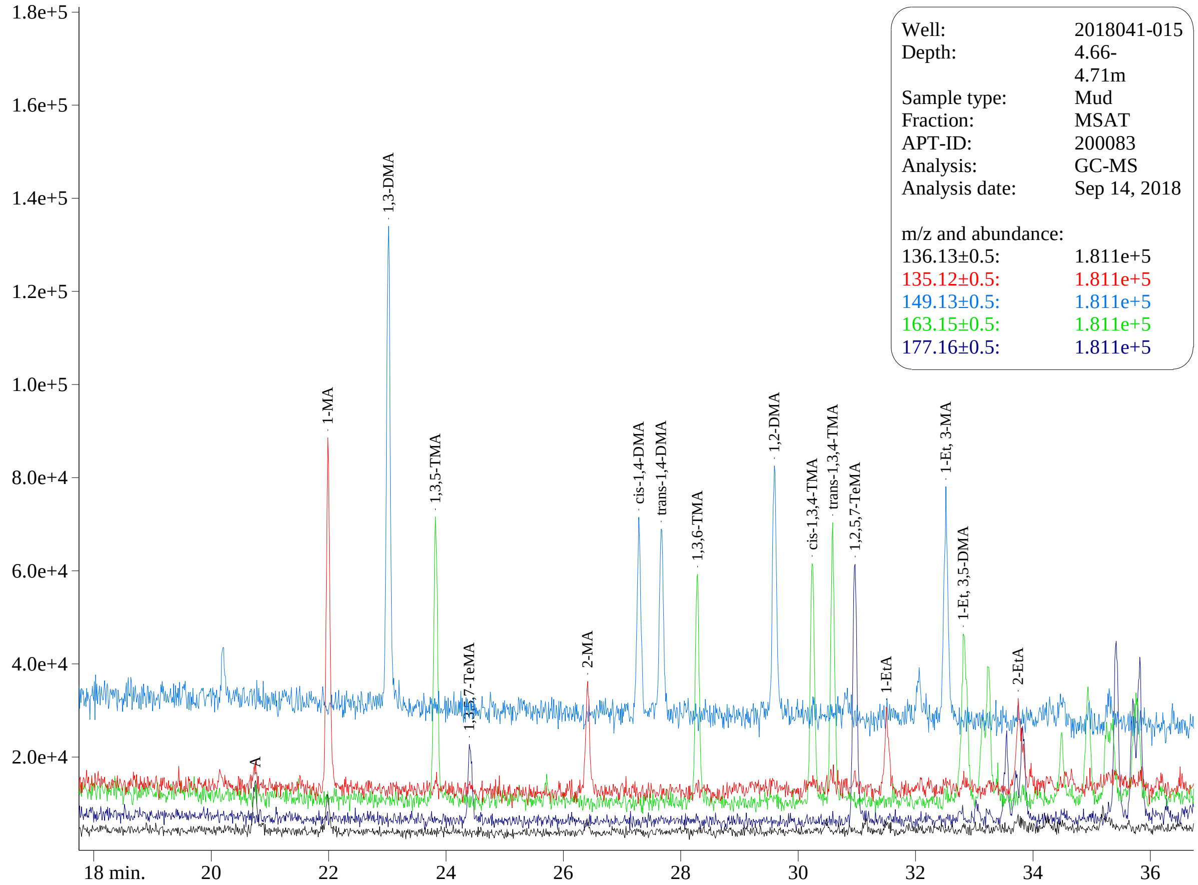

Well: 2018041-007
Depth: 0.32-0.34m
Sample type: Mud
Fraction: MSAT
APT-ID: 200069
Analysis: GC-MS
Analysis date: Sep 13, 2018
m/z and abundance:
188.16±0.5: 5.720e+5
187.15±0.5: 5.720e+5
201.16±0.5: 5.720e+5
215.18±0.5: 5.720e+5
DIA
4-MDIA
4,9-DMDIA
1-MDIA-D3 (IS)
1-MDIA
1,4+2,4-DMDIA
4,8-DMDIA
1,4,9-TMDIA
3-MDIA
3,4-DMDIA
3,4,9-TMDIA
48 min.
50
52
54
56
58
60
62
64
66
5.5e+5
5.0e+5
4.5e+5
4.0e+5
3.5e+5
3.0e+5
2.5e+5
2.0e+5
1.5e+5
1.0e+5
5.0e+4

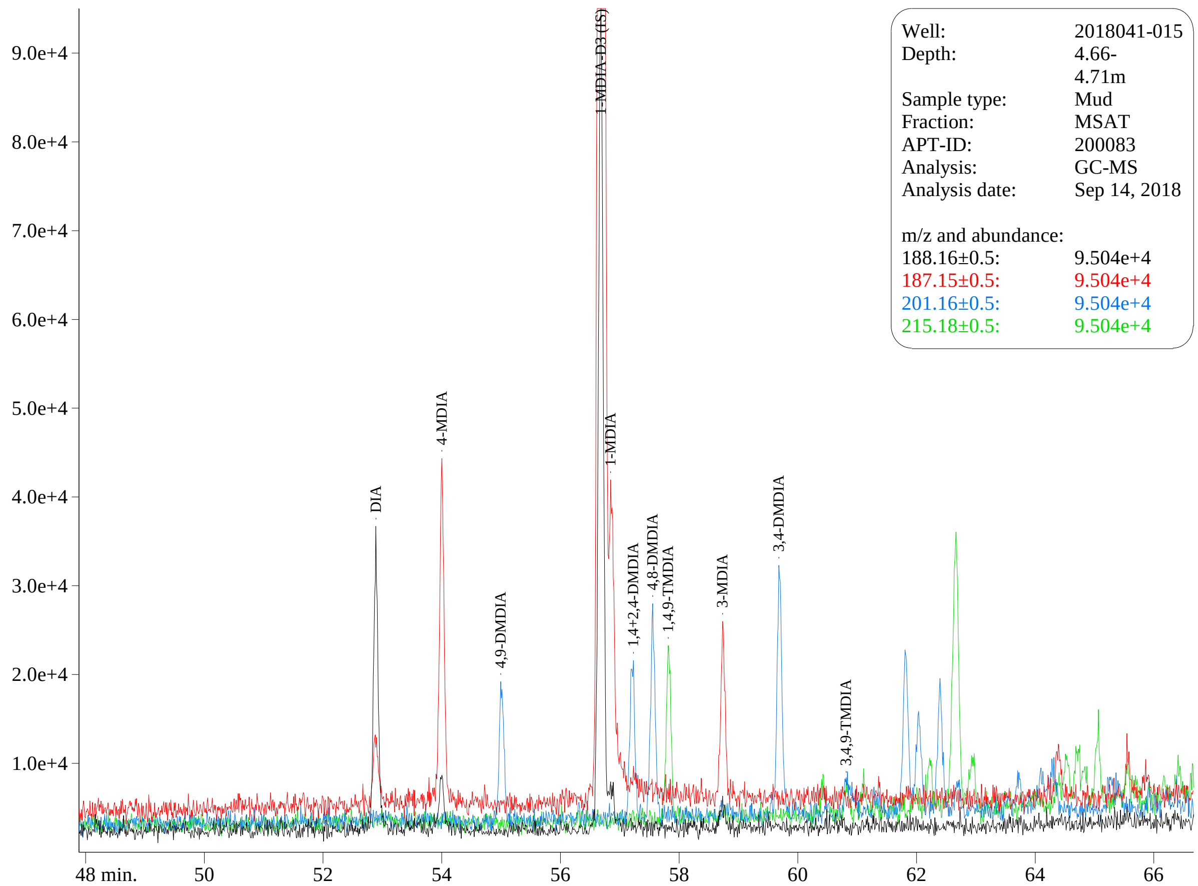


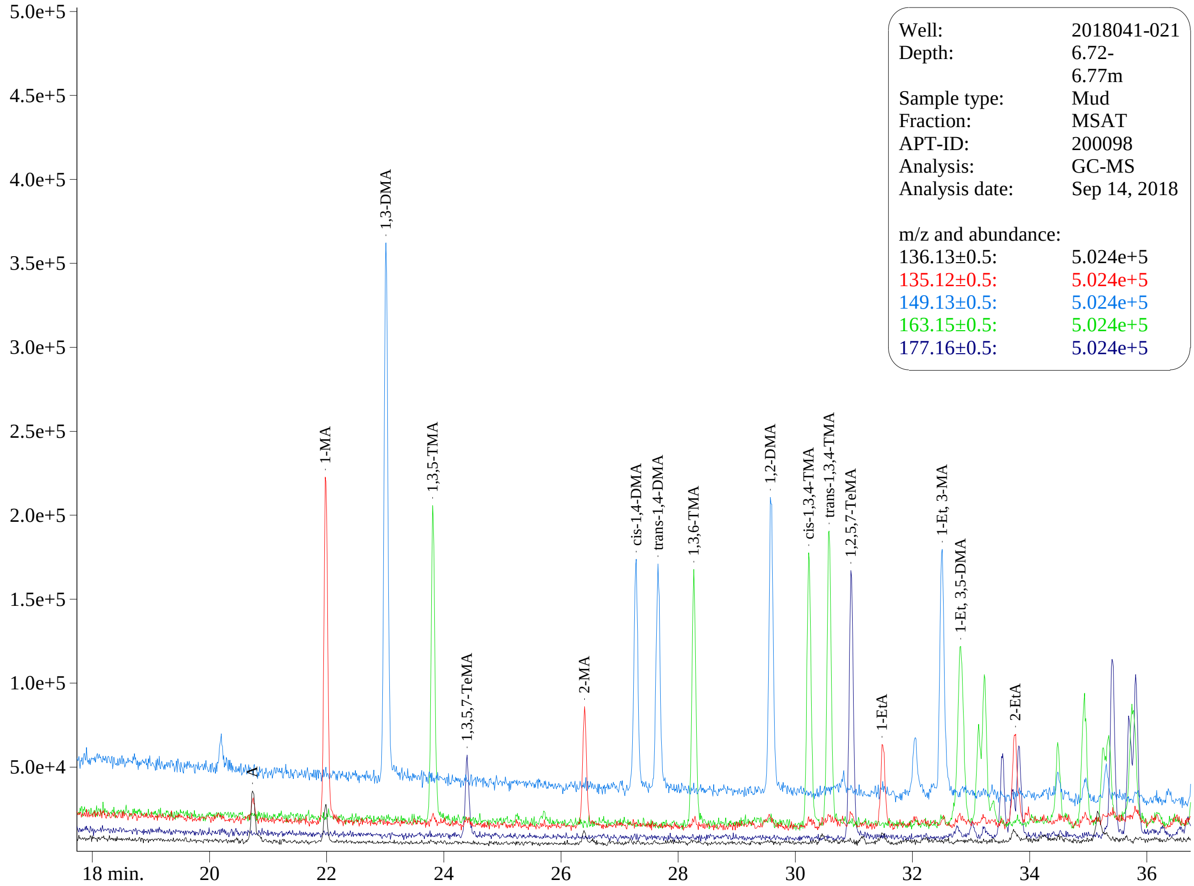
Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-MS
Analysis date: Sep 13, 2018
m/z and abundance:
136.13±0.5: 1.158e+5
135.12±0.5: 1.158e+5
149.13±0.5: 1.158e+5
163.15±0.5: 1.158e+5
177.16±0.5: 1.158e+5
1-MA
1,3-DMA
1,3,5-TMA
1,3,5,7-TeMA
2-MA
cis-1,4-DMA
trans-1,4-DMA
1,3,6-TMA
1,2-DMA
cis-1,3,4-TMA
trans-1,3,4-TMA
1,2,5,7-TeMA
1-EtA
1-Et, 3-MA
1-Et, 3,5-DMA
2-EtA
A
18 min.
20
22
24
26
28
30
32
34
36
1.1e+5
1.0e+5
9.0e+4
8.0e+4
7.0e+4
6.0e+4
5.0e+4
4.0e+4
3.0e+4
2.0e+4
1.0e+4

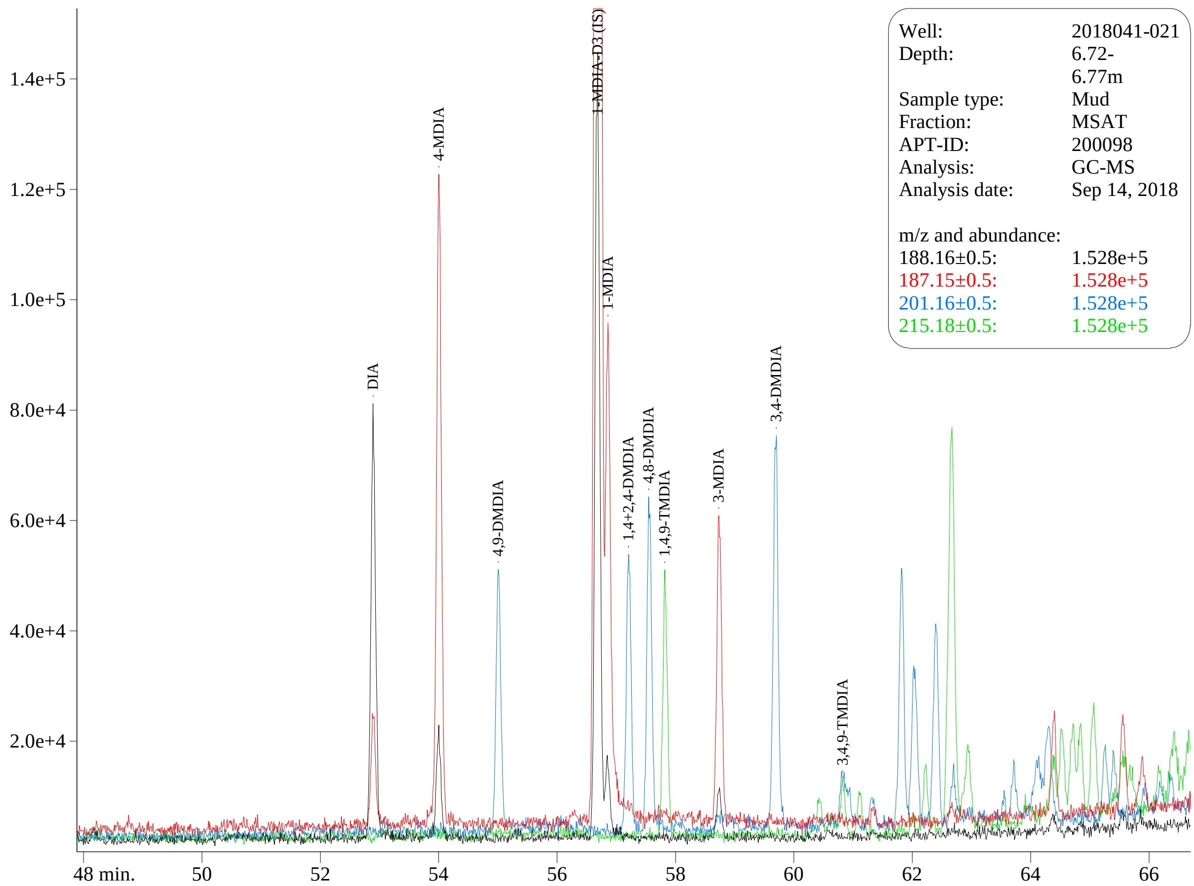


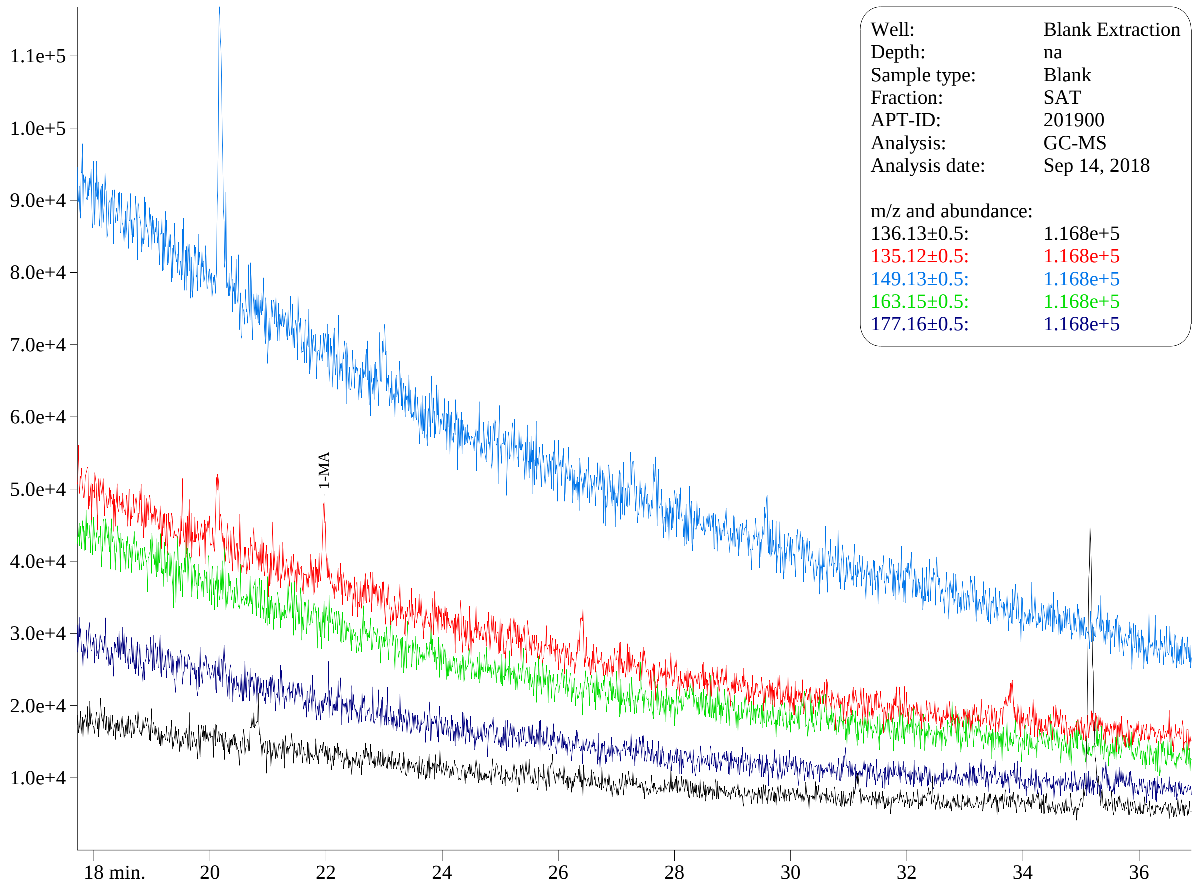
Well: 2018041-014
Depth: 4.88-4.93m
Sample type: Mud
Fraction: MSAT
APT-ID: 200079
Analysis: GC-MS
Analysis date: Sep 13, 2018
m/z and abundance:
188.16±0.5: 7.719e+4
187.15±0.5: 7.719e+4
201.16±0.5: 7.719e+4
215.18±0.5: 7.719e+4
1-MDIA-D3 (IS)
1-MDIA
DIA
4-MDIA
4,9-DMDIA
1,4+2,4-DMDIA
4,8-DMDIA
1,4,9-TMDIA
3-MDIA
3,4-DMDIA
3,4,9-TMDIA
48 min.
50
52
54
56
58
60
62
64
66
7.0e+4
6.0e+4
5.0e+4
4.0e+4
3.0e+4
2.0e+4
1.0e+4


Well: 2018041-015
Depth: 4.66-4.71m
Sample type: Mud
Fraction: MSAT
APT-ID: 200083
Analysis: GC-MS
Analysis date: Sep 14, 2018
m/z and abundance:
136.13±0.5: 1.811e+5
135.12±0.5: 1.811e+5
149.13±0.5: 1.811e+5
163.15±0.5: 1.811e+5
177.16±0.5: 1.811e+5
1-MA
1,3-DMA
1,3,5-TMA
2-MA
cis-1,4-DMA
trans-1,4-DMA
1,3,6-TMA
1,2-DMA
cis-1,3,4-TMA
trans-1,3,4-TMA
1,2,5,7-TeMA
1-EtA
1-Et, 3-MA
1-Et, 3,5-DMA
2-EtA
A
18 min.
20
22
24
26
28
30
32
34
36
1.8e+5
1.6e+5
1.4e+5
1.2e+5
1.0e+5
8.0e+4
6.0e+4
4.0e+4
2.0e+4

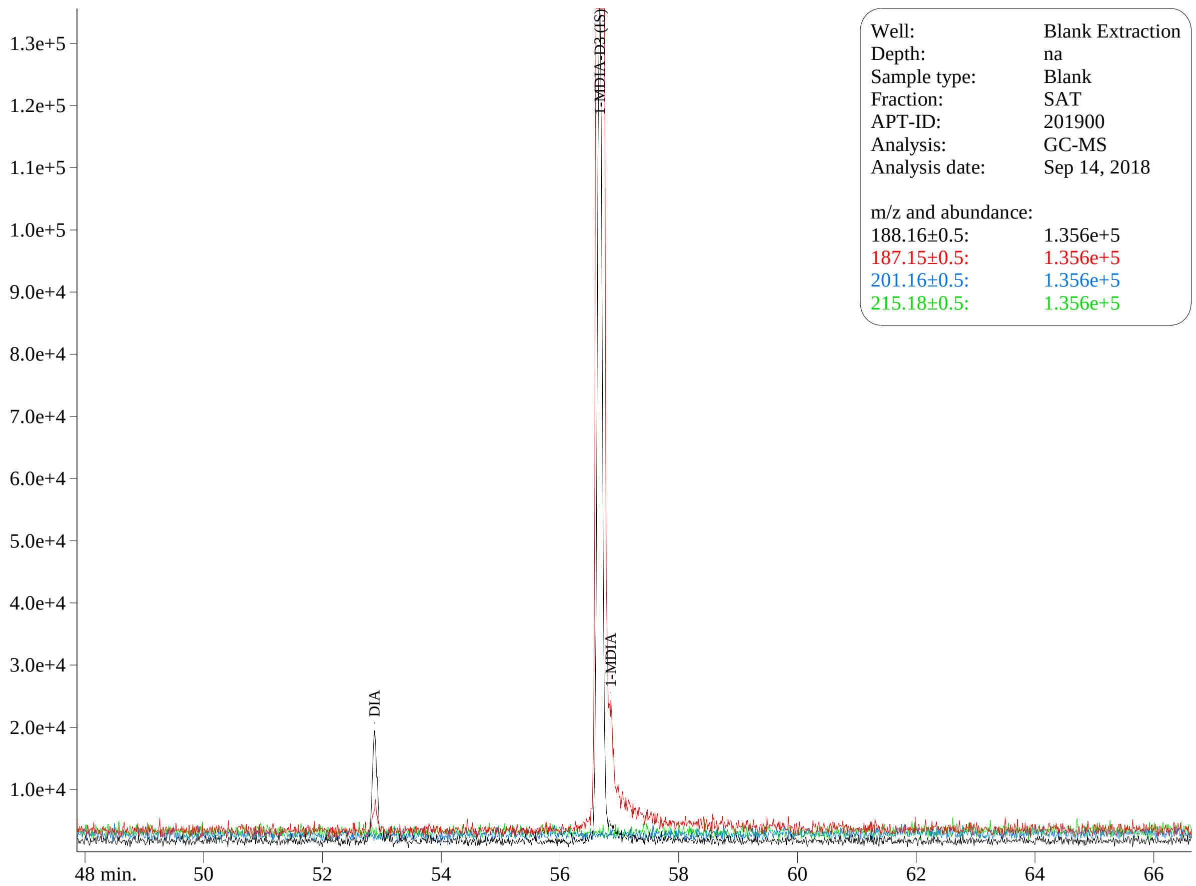

Well: 2018041-015
Depth: 4.66-4.71m
Sample type: Mud
Fraction: MSAT
APT-ID: 200083
Analysis: GC-MS
Analysis date: Sep 14, 2018
m/z and abundance:
188.16±0.5: 9.504e+4
187.15±0.5: 9.504e+4
201.16±0.5: 9.504e+4
215.18±0.5: 9.504e+4
1-MDIA-D3 (IS)
DIA
4-MDIA
4,9-DMDIA
1-MDIA
1,4+2,4-DMDIA
4,8-DMDIA
1,4,9-TMDIA
3-MDIA
3,4-DMDIA
3,4,9-TMDIA
48 min.
50
52
54
56
58
60
62
64
66
9.0e+4
8.0e+4
7.0e+4
6.0e+4
5.0e+4
4.0e+4
3.0e+4
2.0e+4
1.0e+4


Well: 2018041-021
Depth: 6.72-6.77m
Sample type: Mud
Fraction: MSAT
APT-ID: 200098
Analysis: GC-MS
Analysis date: Sep 14, 2018
m/z and abundance:
136.13±0.5: 5.024e+5
135.12±0.5: 5.024e+5
149.13±0.5: 5.024e+5
163.15±0.5: 5.024e+5
177.16±0.5: 5.024e+5
1-MA
1,3-DMA
1,3,5-TMA
1,3,5,7-TeMA
2-MA
cis-1,4-DMA
trans-1,4-DMA
1,3,6-TMA
1,2-DMA
cis-1,3,4-TMA
trans-1,3,4-TMA
1,2,5,7-TeMA
1-EtA
1-Et, 3-MA
1-Et, 3,5-DMA
2-EtA
A
18 min.
20
22
24
26
28
30
32
34
36
5.0e+5
4.5e+5
4.0e+5
3.5e+5
3.0e+5
2.5e+5
2.0e+5
1.5e+5
1.0e+5
5.0e+4

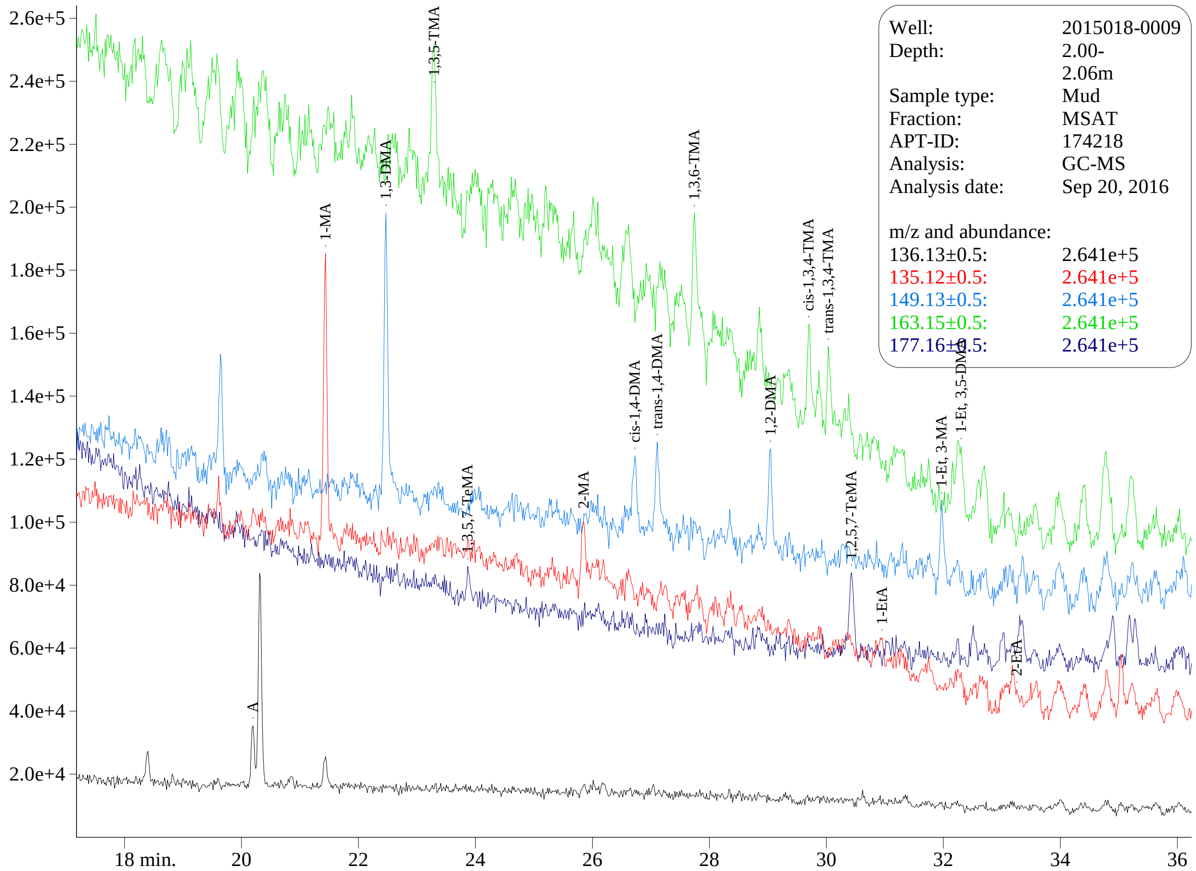

Well: 2018041-021
Depth: 6.72-6.77m
Sample type: Mud
Fraction: MSAT
APT-ID: 200098
Analysis: GC-MS
Analysis date: Sep 14, 2018
m/z and abundance:
188.16±0.5: 1.528e+5
187.15±0.5: 1.528e+5
201.16±0.5: 1.528e+5
215.18±0.5: 1.528e+5
DIA
4-MDIA
4,9-DMDIA
1-MDIA-D3 (IS)
1-MDIA
1,4+2,4-DMDIA
4,8-DMDIA
1,4,9-TMDIA
3-MDIA
3,4-DMDIA
3,4,9-TMDIA
48 min.
50
52
54
56
58
60
62
64
66
1.4e+5
1.2e+5
1.0e+5
8.0e+4
6.0e+4
4.0e+4
2.0e+4



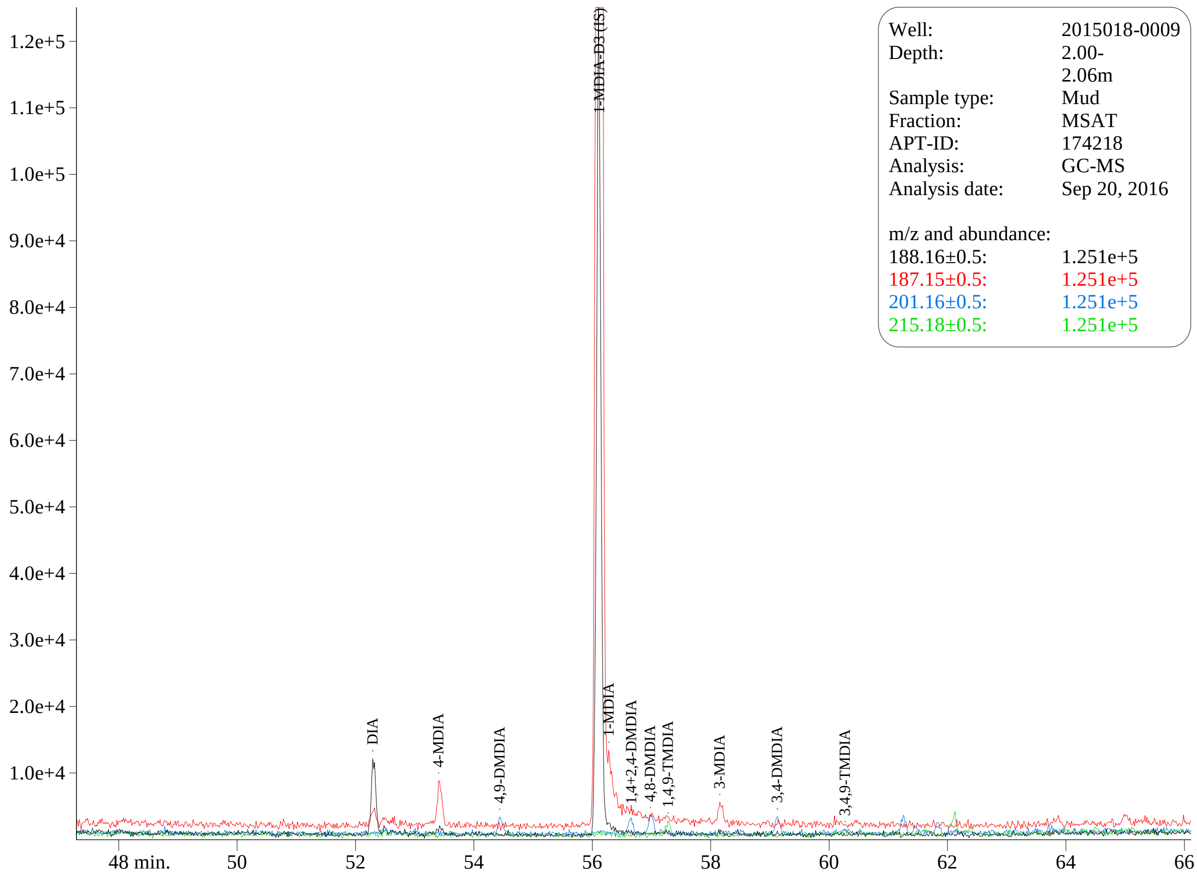
Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-MS
Analysis date: Sep 14, 2018
m/z and abundance:
136.13±0.5: 1.168e+5
135.12±0.5: 1.168e+5
149.13±0.5: 1.168e+5
163.15±0.5: 1.168e+5
177.16±0.5: 1.168e+5
1-MA
1.1e+5
1.0e+5
9.0e+4
8.0e+4
7.0e+4
6.0e+4
5.0e+4
4.0e+4
3.0e+4
2.0e+4
1.0e+4
18 min.
20
22
24
26
28
30
32
34
36



Well: Blank Extraction
Depth: na
Sample type: Blank
Fraction: SAT
APT-ID: 201900
Analysis: GC-MS
Analysis date: Sep 14, 2018
m/z and abundance:
188.16±0.5: 1.356e+5
187.15±0.5: 1.356e+5
201.16±0.5: 1.356e+5
215.18±0.5: 1.356e+5
1-MDIA-D3 (IS)
1-MDIA
DIA
1.3e+5
1.2e+5
1.1e+5
1.0e+5
9.0e+4
8.0e+4
7.0e+4
6.0e+4
5.0e+4
4.0e+4
3.0e+4
2.0e+4
1.0e+4
48 min.
50
52
54
56
58
60
62
64
66



Well: 2015018-0009
Depth: 2.00-2.06m
Sample type: Mud
Fraction: MSAT
APT-ID: 174218
Analysis: GC-MS
Analysis date: Sep 20, 2016
m/z and abundance:
136.13±0.5: 2.641e+5
135.12±0.5: 2.641e+5
149.13±0.5: 2.641e+5
163.15±0.5: 2.641e+5
177.16±0.5: 2.641e+5
1,3,5-TMA
1,3-DMA
1-MA
1,3,6-TMA
cis-1,3,4-TMA
trans-1,3,4-TMA
cis-1,4-DMA
trans-1,4-DMA
1,2-DMA
1-Et, 3,5-DMA
1-Et, 3-MA
1,3,5,7-TeMA
2-MA
1,2,5,7-TeMA
1-EtA
2-EtA
A
2.6e+5
2.4e+5
2.2e+5
2.0e+5
1.8e+5
1.6e+5
1.4e+5
1.2e+5
1.0e+5
8.0e+4
6.0e+4
4.0e+4
2.0e+4
18 min.
20
22
24
26
28
30
32
34
36



Well: 2015018-0009
Depth: 2.00-2.06m
Sample type: Mud
Fraction: MSAT
APT-ID: 174218
Analysis: GC-MS
Analysis date: Sep 20, 2016
m/z and abundance:
188.16±0.5: 1.251e+5
187.15±0.5: 1.251e+5
201.16±0.5: 1.251e+5
215.18±0.5: 1.251e+5
1-MDIA-D3 (IS)
DIA
4-MDIA
4,9-DMDIA
1-MDIA
1,4+2,4-DMDIA
4,8-DMDIA
1,4,9-TMDIA
3-MDIA
3,4-DMDIA
3,4,9-TMDIA
1.2e+5
1.1e+5
1.0e+5
9.0e+4
8.0e+4
7.0e+4
6.0e+4
5.0e+4
4.0e+4
3.0e+4
2.0e+4
1.0e+4
48 min.
50
52
54
56
58
60
62
64
66

GC-MS Chromatograms of Diamandoids

Table 21. Reference data for GC-EOM measured on NSO-1

Variable	Permissible range	Most likely value	25.07.2018	25.07.2018	26.07.2018	27.07.2018	27.07.2018	28.07.2018	29.07.2018	29.07.2018	01.09.2016	02.09.2016	02.09.2016	31.08.2016	30.08.2016	31.08.2016	23.08.2016	23.08.2016	24.08.2016
Pr/n-C17	0.55-0.66	0.60	0.60	0.60	0.59	0.60	0.59	0.59	0.59	0.59	0.63	0.62	0.63	0.63	0.63	0.64	0.62	0.63	0.63
n-C15/n-C20	1.4-2.0	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.7	1.6	1.6	1.5	1.6	1.5	1.6	1.5
n-C30/n-C20	0.20-0.32	0.29	0.28	0.26	0.28	0.29	0.29	0.29	0.29	0.29	0.30	0.30	0.28	0.31	0.30	0.30	0.30	0.30	0.29
n-C17/(n-C17+n-C27)	0.75-0.82	0.79	0.78	0.79	0.77	0.78	0.78	0.78	0.77	0.77	0.77	0.77	0.77	0.77	0.76	0.76	0.77	0.77	0.76

Table 22. Reference data for GC-MS of Saturated Compounds measured on NSO-1

Variable	Permissible range	Most likely value	07.09.2018	08.09.2018	19.09.2016	20.09.2016	15.09.2016	16.09.2016	13.09.2016	14.09.2016
[23/3]/30αβ	0.04-0.09	0.07	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06
35αβR/30αβ	0.06-0.13	0.08	0.10	0.10	0.11	0.11	0.10	0.10	0.10	0.10
25nor30αβ/25nor28αβ	0.3-0.8	0.5	0.65	0.74	0.89	0.82	0.85	0.88	0.88	0.86
29ααR/27dβS	0.2-0.6	0.3	0.42	0.45	0.50	0.44	0.50	0.45	0.45	0.44
29ββS/27ββR	0.7-1.2	0.9	0.70	0.86	0.96	0.99	0.97	1.00	0.92	0.93

Our column resolves the 25nor28αβ doublet, thus giving a value in the high-end region of the acceptable range specified by NIGOGA.

Table 23. Reference data for GC-MS of Aromatic Compounds measured on NSO-1

Variable	Permissible range	Most likely value	24.08.2018
25.08.2018	19.09.2016	20.09.2016	15.09.2016
16.09.2016	13.09.2016	14.09.2016	24.08.2018
25.08.2018	19.09.2016	20.09.2016	15.09.2016
16.09.2016	13.09.2016	14.09.2016	
1-MP/P	0.53-0.70	0.59	0.59
0.60	0.69	0.63	0.62
0.62	0.69	0.68	0.56
0.59	0.71	0.64	0.63
0.64	0.66	0.66	
A1/E1	0.3-0.7	0.5	0.51
0.51	0.46	0.49	0.46
0.48	0.45	0.47	0.42
0.44	0.36	0.37	0.38
0.36	0.36	0.37	
a1/d1	0.2-0.4	0.31	0.32
0.32	0.34	0.34	0.34
0.32	0.33	0.35	0.29
0.30	0.30	0.30	0.31
0.30	0.29	0.32	
Variable	Permissible range	Most likely value	
1-MP/P	0.53-0.70	0.59	
A1/E1	0.3-0.7	0.5	
a1/d1	0.2-0.4	0.31	

Experimental Procedures

All procedures follow NIGOGA, 4th Edition. Below are brief descriptions of procedures/analytical conditions.

TOC
A Leco SC-632 instrument is used. Diluted HCl is added to the crushed rock sample to remove carbonate. The sample is then introduced into the Leco combustion oven, and the amount of carbon in the sample is measured as carbon dioxide by an IR-detector.

Rock-Eval
A HAWK instrument is used. Jet-Rock 1 was run as every tenth sample and checked against the acceptable range given in NIGOGA.

Temperature programme
5 minutes purge before: Pyrolysis: 300 °C (3 min.) - 25 °C/min. - 650 °C (0 min.)

Quantitative MPLC 3 fractions
The MPLC is constructed as described by Radke et al. (1980). The system includes two HPLC pumps, sample injector, sample collector and two packed columns. The pre column is filled with Kieselgel 100, which is heated at 600 °C for 2 hours to deactivate it. The main column, a LiChroprep Si60 column, is heated at 120 °C for 2 hours with a helium flow to make it water free.
Approximately 30 mg of deasphaltened oil or EOM diluted in 1 ml hexane is injected into a sample loop. The solvents used are hexane and dichloromethane.

Fraction 1 - Saturates
Hexane through the sample loop, the pre column and the main column is collected until all saturates are collected.

Fraction 2 – Aromatics A
Hexane that back flushes the main column is collected.

Fraction 3 – Polars (NSO-fraction)
Dichloromethane that back flushes the pre column is collected.

Solvents from all fractions are removed until the total volum is 1 ml by using a Turbovap unit. The fractions are transferred to small pre weight vials and dried carefully. Then the weights are measured.

GC analysis of gas components
Aliquots of the samples were transferred to exetainers. 0.1-1ml were sampled using a Gerstel MPS2 autosampler and injected into a Agilent 7890 RGA GC equipped with Molsieve and Poraplot Q columns, a flame ionisation detector (FID) and 2 thermal conductivity detector (TCD). Hydrocarbons were measured by FID. H_2, CO_2, N_2 and O_2/Ar by TCD.

Carbon isotope analysis of hydrocarbon compounds and CO2
The carbon isotopic composition of the hydrocarbon gas components was determined by a GC-C-IRMS system. Aliquots were sampled with Triplus RSH autosampler and analysed on a Trace 1310 gas chromatograph (Thermo Fisher Scientific), equipped with a Poraplot Q column and PTV (Programable Temperature Vaporizing) injector. The GC is interfaced via

GC-Isolink II and Conflo IV to Delta V Isotope Ratio Mass Spectrometer (IRMS) (Thermo Fisher Scientific). The components were combusted in the reactor held at 1000 ºC. The water was removed by Nafion membrane separation. Repeated analyses of standards indicate that the reproducibility of δ13C values is better than 1 ‰ vPDB (2 sigma).

Hydrogen isotope analysis of methane
The hydrogen isotopic composition of methane was determined by a GC-H-IRMS system. Aliquots were sampled with a Triplus RSH autosampler and analysed on a Trace 1310 gas chromatograph (Thermo Fisher Scientific), equipped with a Poraplot Q column and PTV (Programable Temperature Vaporizing) injector. The GC is interfaced via GC-Isolink II and Conflo IV to Delta V Isotope Ratio Mass Spectrometer (IRMS) (Thermo Fisher Scientific). The components were decomposed to H2 and coke in a 1420 ºC furnace. Repeated analyses of standards indicate that the reproducibility of δD values is better than 10 ‰ vSMOW (2 sigma).

Carbon isotope analysis of hydrocarbon compounds and CO2
The carbon isotopic composition of the hydrocarbon gas components was determined by a GC-C-IRMS system. Aliquots were sampled with a syringe and analysed on a Trace GC2000, equipped with a Poraplot Q column, connected to a Delta plus XP IRMS. The components were burnt to CO_2 and water in a 1000 ºC furnace over Cu/Ni/Pt. The water was removed by Nafion membrane separation. Repeated analyses of standards indicate that the reproducibility of $\delta^{13}C$ values is better than 1 ‰ PDB (2 sigma).

Carbon isotope analysis of low concentration methane using the Precon.
The carbon isotopic composition of methane was determined by a Precon-IRMS system. Aliquots were sampled with a GCPal autosampler. CO_2, CO and water were removed on chemical traps. Other hydrocarbons than CH_4 and remaining traces of CO_2 were removed by cryotrapping. The methane was burnt to CO_2 and water in a 1000 ºC furnace over Cu/Ni/Pt. The water was removed by Nafion membrane separation. The sample preparation system described (Precon) was connected to a Delta plus XP IRMS for $\delta\ ^{13}C$ analysis. Repeated analyses of standards indicate that the reproducibility of $\delta^{13}C$ values is better than 1 ‰ PDB (2 sigma).

Hydrogen isotope analysis of methane
The hydrogen isotopic composition of methane was determined by a GC-C-IRMS system. Aliquots were sampled with a GCPal and analysed on a Trace GC2000, equipped with a Poraplot Q column, connected to a Delta plus XP IRMS. The components were decomposed to H_2 and coke in a 1400 ºC furnace. The international standard NGS-2 and an in-house standard (Std A) were used for testing accuracy and precision. The “true” value of NGS-2 is given to –172.5 ‰ V-SMOW (http://deuterium.nist.gov/standards.html). Repeated analyses of standards indicate that the reproducibility of δD values is better than 10 ‰ PDB (2 sigma).

Stable carbon isotope analysis of fractions
The samples were dissolved in a known amount of dichloromethane and 5ul was transferred to a 5X8mm tin capsule. The solvent was evaporated in an oven at 50 °C. The samples were then loaded into an automatic sampler which then placed them into a combustion reactor (Thermo Fisher Scientific Elemental Analyzer) held at 1000 °C. The excess supply of oxygen helps to flash combust the tin capsules which results in a temperature rise to 1700 °C. The produced water is trapped on Magnesium Perchlorate. CO2 is separated by column and flashed into Delta V Plus Isotope Ratio Mass Spectrometer (IRMS) (Thermo Fisher

Scientific) via Conflo IV. A standard (NGS NSO-1, topped oil) is analyzed for each 12th sample. The δ13C value obtained for this standard is –28.6‰ vPDB.

GC of EOM fraction
A HP7890 A instrument is used. The column is a CP-Sil-5 CB-MS, length 30 m, i.d. 0.25 mm, film thickness 0.25 μm. C20D42 is used as an internal standards.

Temperature programme
50 °C (1 min.) - 4 °C/min. - 320 °C (25 min.)

GCMS of saturated and aromatic fractions
A Micromass ProSpec high resolution instrument is used. The instrument is tuned to a resolution of 3000 and data is acquired in Selected Ion Recording (SIR) mode. The column used is a 60 m CP-Sil-5 CB-MS with an i.d. of 0.25 mm and a film thickness 0.25 μm. D_4-27ααR is used as internal standard when quantitative results are requested for the saturated compounds. D_8-Naphthalene, D_{10}-Phenanthrene and D_{12}- Chrysene are used as internal standards when quantitative results are required for the aromatic compounds. The aromatic and aliphatic fractions may be analysed together or separately.

Temperature programme
50 °C (1 min.) - 20 °C/min. - 120 °C - 2 °C/min - 320 °C (20 min.)

GC-MS of saturated and aromatic fractions
A Thermo Scientific DFS high resolution instrument is used. The instrument is tuned to a resolution of 3000 and data is acquired in Selected Ion Recording (SIR) mode. The column used is a 60 m CP-Sil-5 CB-MS with an i.d. of 0.25 mm and a film thickness 0.25 μm. D_4-27ααR is used as internal standard when quantitative results are requested for the saturated compounds. D_8-Naphthalene, D_{10}-Biphenyl , D_{10}-Phenanthrene and D_{12}- Chrysene are used as internal standards when quantitative results are required for the aromatic compounds. The aromatic and aliphatic fractions may be analysed together or separately.

Temperature programme
50 °C (1 min.) - 20 °C/min. - 120 °C - 2 °C/min - 320 °C (20 min.)

GC-MS/MS of age specific biomarkers
A Thermo Scientific TSQ Quantum instrument is used. The instrument is tuned to a resolution of 0.7 mass units. The collision energy is 15 V with Argon as the collision gas at a pressure of 1.0 mTorr. The column used is a 60 m FactorFour VF-1ms with an i.d. of 0.25 mm and a film thickness 0.25 µm. d4-27ααR is used as internal standard when quantitative results are requested.

Temperature programme
50 °C (1 min.) - 20 °C/min. - 225 °C - 2 °C/min - 300 °C - 20 °C/min. - 320 °C (20 min.)

GCMS of Diamondoids in saturated fractions
A Thermo Scientific TSQ Quantum XLS instrument is used. The instrument is tuned to a resolution of 0.4 mass units and data is acquired in Selected Ion Recording (SIR) mode. The column used is a 60 m CP-Sil-5 CB-MS with an i.d. of 0.25 mm and a film thickness 0.25 μm. D_{16}-Adamantane and D_3-1-Methyl-Diamantane are used as internal standards when quantitative results are required.

Temperature programme
50 °C (1 min.) - 3 °C/min. - 230 °C - 15 °C/min - 325 °C (20 min.)