

1 INTRODUCTION

A list of all analysed samples is presented in Table 1. The analytical and preparative methods employed in this study comprised geochemical screening, kerogen characterisation and bitumen characterisation. Screening consisted of Rock-Eval pyrolysis. Kerogen characterisation comprised vitrinite reflectance, sporinite fluorescence and visual kerogen analysis, and temperature-programmed pyrolysis-gas chromatography. Bitumen characterisation included solvent extraction followed by asphaltene precipitation, preparative group type separation by MPLC³ and analytical group type separation by TLC-FID⁴ (Iatroscan). Rock extracts and the DST sample were further analysed by gas chromatography (GC-FID) of saturated hydrocarbons, analysis of the saturated and aromatic hydrocarbon fractions by gas chromatography-mass spectrometry (GC-MSD⁵) and, in case of the DST analysis of stable carbon isotopes (both fractions and gaseous compounds). The analyses were carried out according to the guidelines

1 All depths used in this report are in metres measured depth below RKB (m MD RKB).
2 Depths refer to recovered core.
3 Medium Pressure/Performance Liquid Chromatography
4 Thin Layer Chromatography with Flame Ionisation Detection
5 Mass-Sensitive Detector



in the Norwegian Industry Guide to Organic Geochemical Analyses (NIGOGA)⁶, except for the visual kerogen description, where Norsk Hydro's more specific guidelines were applied (see Appendix 1).

Visual kerogen analysis and spore colour determination were carried out by Robertson Research in Llandudno, UK. Vitrinite reflectance was determined by Geolab UK. Stable carbon isotope analyses of extract fractions was performed by Geolab Nor in Trondheim, Norway. Gas analysis and stable carbon isotope analyses of the gaseous compounds was carried out by IFE (Kjeller, Norway). All other analytical and interpretative work was done at the Norsk Hydro Research Centre in Bergen, Norway.

This report presents the results of this study and integrates them with results of the petroleum geochemistry report from well 30/8-1S (Document ID R-071847). The previously reported data are only shown on figures and included in the interpretations, but not listed in the present report.

Table 1: Samples and analyses, well 30/8-1SR

Cty	well	licence	Type	Lithology	Upper depth (MD m RKB)	Lower depth (MD m RKB)	Rock Eval	extr	mpic	iatr	sat	pygc	13F	13G	LHC	Gas vol%	MSS	MSA	VR	Visual kerogen/ SCI
NOR	30/8-1SR	PL 190	COCH	SST	4716.5	4716.5	1	1	1	1	1						1	1		
NOR	30/8-1SR	PL 190	COCH	SST	4717.5	4717.5	1													
NOR	30/8-1SR	PL 190	COCH	SST	4719.5	4719.5	1													
NOR	30/8-1SR	PL 190	DC	RFL	4717	4720													1	1
NOR	30/8-1SR	PL 190	COCH	SST	4720.5	4720.5	1	1	1	1	1						1	1		
NOR	30/8-1SR	PL 190	COCH	SST	4721.5	4721.5	1	1	1	1	1						1	1		
NOR	30/8-1SR	PL 190	COCH	SST	4722.65	4722.65	1													
NOR	30/8-1SR	PL 190	COCH	COAL	4723.1	4723.1	1	1	1	1	1	1					1	1		
NOR	30/8-1SR	PL 190	COCH	SST	4723.5	4723.5	1	1	1	1	1						1	1		
NOR	30/8-1SR	PL 190	COCH	SST	4724.5	4724.5	1	1	1	1	1						1	1		
NOR	30/8-1SR	PL 190	COCH	SST	4725.5	4725.5	1													
NOR	30/8-1SR	PL 190	DC	SST	4788	4791													1	1
NOR	30/8-1SR	PL 190	OIL		4700	4803		1	1	1	1		1		1		1	1		
NOR	30/8-1SR	PL 190	GAS		4700	4803								1		1				
NOR	30/8-1SR	PL 190	DC	BULK	4806	4809	1	1	1	1	1	1					1	1		
NOR	30/8-1SR	PL 190	DC	SLT	4812	4815													1	1
NOR	30/8-1SR	PL 190	DC	SH/COAL	4837	4840													1	1
NOR	30/8-1SR	PL 190	DC	BULK	4852	4855	1													
NOR	30/8-1SR	PL 190	DC	SH	4882	4885													1	1
NOR	30/8-1SR	PL 190	DC	BULK	4895	4897	1	1	1	1	1	1					1	1		
NOR	30/8-1SR	PL 190	DC	SH/SST	4910	4912													1	1
NOR	30/8-1SR	PL 190	DC	SH/SST	4945	4947													1	1
NOR	30/8-1SR	PL 190	DC	BULK	4952	4955	1	1	1	1	1	1					1	1		
NOR	30/8-1SR	PL 190	DC	BULK	4997	5000	1													
NOR	30/8-1SR	PL 190	DC	H/SST/COAL	5012	5015													1	1
NOR	30/8-1SR	PL 190	DC	SH/COAL	5057	5060													1	1
NOR	30/8-1SR	PL 190	DC	SH/SST	5137	5140													1	1

Total number of analyses

15 10 10 10 10 4 1 1 1 1 10 10 10 10



ROCK EVAL SCREENING DATA , WELL NOR : 30/8-1SR

Table 2

Depth (m)	Lithology	Type	Tmax (C)	S1(kg/t)	S2 (kg/t)	TOC (%)	HI	PI	Analysing Company
4716.50	SST	COCH		0.9	0.0	0.1	9	0.99	NORSK HYDRO
4717.50	SST	COCH		0.6	0.2	0.3	70	0.72	NORSK HYDRO
4719.50	SST	COCH		0.1	0.1	0.1	57	0.50	NORSK HYDRO
4720.50	SST	COCH		1.1	0.1	0.2	60	0.92	NORSK HYDRO
4721.50	SST	COCH		1.0	0.1	0.2	80	0.89	NORSK HYDRO
4722.65	SST	COCH		0.7	0.0	0.1	30	0.96	NORSK HYDRO
4723.10	COAL	COCH	466	6.2	85.6	48.2	178	0.07	NORSK HYDRO
4723.50	SST	COCH		0.9	0.1	0.1	54	0.93	NORSK HYDRO
4724.50	SST	COCH		1.8	0.2	0.2	65	0.92	NORSK HYDRO
4725.50	SST	COCH		0.6	0.0	0.1	38	0.96	NORSK HYDRO
4809.00	BULK	DC	475	4.7	43.0	33.2	129	0.10	NORSK HYDRO
4855.00	BULK	DC	489	0.1	2.6	9.3	28	0.05	NORSK HYDRO
4897.00	BULK	DC	478	3.1	33.5	27.4	122	0.08	NORSK HYDRO
4955.00	BULK	DC	482	3.8	44.5	36.4	122	0.08	NORSK HYDRO
5000.00	BULK	DC	481	1.5	27.4	48.2	57	0.05	NORSK HYDRO



VITRINITE REFLECTANCE Ro (average values), WELL NOR :30/8-1SR **Table 3**

Depth (m)	Lithology	Type	Population I		Population II		Analysing Company
			%Ro	n	%Ro	n	
4720.00	RFL	DC		()		()	GEOLABUK
4791.00	SST	DC	1.74	(20)		()	GEOLABUK
4815.00	SLT	DC	1.55	(20)		()	GEOLABUK
4840.00	SH/COAL	DC	1.66	(20)		()	GEOLABUK
4885.00	SH	DC	1.65	(20)		()	GEOLABUK
4912.00	SH/SST	DC	1.60	(20)		()	GEOLABUK
4947.00	SH/SST	DC	1.53	(20)		()	GEOLABUK
5015.00	SH/SST/CO	DC	1.67	(20)		()	GEOLABUK
5060.00	SH/COAL	DC	1.75	(20)		()	GEOLABUK
5140.00	SH/SST	DC	1.83	(20)		()	GEOLABUK

Table 4: Spore colour index (SCI) and kerogen composition

Depth (m)	Type	SCI	% (visual, from microscopy)		
			Inertinite	Vitrinite	Sapropel
4720	Ctgs	7.5-8.0	5	95	*
4791	Ctgs	7.5	60	40	*
4815	Ctgs	7.5	20	72	5
4840	Ctgs	8.0	30	70	Mnr
4885	Ctgs	8.0-8.5	30	70	Mnr
4912	Ctgs	8.0	20	80	Mnr
4947	Ctgs	8.0-8.5	10	80	10
5015	Ctgs	8.5	10	80	10
5060	Ctgs	8.5-9.0	15	80	5
5140	Ctgs	8.5-9.0	25	65	10



PYROLYSIS-GAS CHROMATOGRAPHY DATA, WELL NOR : 30/8-1SR **Table 5**

Depth (m)	Type	C1 (%)	C2-C5 (%)	C6-C14 (%)	C15+ (%)	GORP 1)	Analysing Company
4723.10	COCH	34.0	28.5	23.7	13.9	1.7	GEOLABNOR
4809.00	DC	35.7	29.9	23.9	10.4	1.9	GEOLABNOR
4897.00	DC	38.6	28.8	22.8	9.9	2.1	GEOLABNOR
4955.00	DC	38.2	26.9	21.0	13.9	1.9	GEOLABNOR

1) GORP = (C1 + C2-C5) / (C6-C14 + C15+)

EXTRACTION/DESPHALTING DATA (SEDIMENTS), WELL NOR :30/8-1SR **Table 6**

29-Apr-1996 12:56

Depth (m)	Lithology	Type	Rock (g)	EOM (mg)	ASP (mg)	EOM (%)	ASP (%)	EOM (ppm)	TOC (%)	EOM/TOC (%)	Analysing comp
4716.50	SST	COCH	24.1			0.11	1.3	1,100	0.1	1.0	NORSK HYDRO
4720.50	SST	COCH	22.0			0.15	1.2	1,500	0.2	1.0	NORSK HYDRO
4721.50	SST	COCH	22.2			0.13	1.2	1,300	0.2	0.9	NORSK HYDRO
4723.10	COAL	COCH	4.0			0.60	69.9	6,000	48.2	0.0	NORSK HYDRO
4723.50	SST	COCH	20.9			0.12	1.4	1,200	0.1	0.9	NORSK HYDRO
4724.50	SST	COCH	22.1			0.21	1.8	2,100	0.2	0.9	NORSK HYDRO
4809.00	BULK	DC	5.2			0.90	30.8	9,000	33.2	0.0	NORSK HYDRO
4897.00	BULK	DC	5.6			0.85	56.8	8,500	27.4	0.0	NORSK HYDRO
4955.00	BULK	DC	4.2			0.80	49.0	8,000	36.4	0.0	NORSK HYDRO



DEASPHALTING DATA (OILS), WELL NOR : 30/8-1SR

Table 6 cont.

St.Depth (m)	En.Depth (m)	Name	OIL (mg)	ASP (mg)	ASP (%)	Analysing Company
4700.00	4803.00	DST 1B	350.00	0.0		NORSK HYDRO

Table 7



COMPOSITION OF DESPHALTED EXTRACT (IATROSCAN), WELL NOR : 30/8-1SR

29-Apr-1996

13:04 (all values in %)

St.Depth (m)	En.Depth (m)	Lithology	Type	Hydrocarbons				Non-HC TOTAL	TOT HC /Non-HC	Analysing Company
				SAT	ARO	TOTAL	SAT/ARO			
4716.50	4716.50	SST	SST	81.0	13.5	94.5	6.0	5.5	17.2	NORSK HYDRO
4720.50	4720.50	SST	SST	77.0	17.5	94.5	4.4	5.5	17.2	NORSK HYDRO
4721.50	4721.50	SST	SST	79.0	16.0	95.0	4.9	5.0	19.0	NORSK HYDRO
4723.10	4723.10	COAL	COAL	12.0	65.0	77.0	0.2	23.0	3.3	NORSK HYDRO
4723.50	4723.50	SST	SST	75.0	18.0	93.0	4.2	7.0	13.3	NORSK HYDRO
4724.50	4724.50	SST	SST	80.0	16.5	96.5	4.8	3.5	27.6	NORSK HYDRO
4806.00	4809.00	BULK	BULK	4.0	65.0	69.0	0.1	31.0	2.2	NORSK HYDRO
4895.00	4897.00	BULK	BULK	4.5	59.5	64.0	0.1	36.0	1.8	NORSK HYDRO
4952.00	4955.00	BULK	BULK	3.5	69.0	72.5	0.1	27.5	2.6	NORSK HYDRO

Table 7 cont.

**Petroleum Geochemistry Group
Research Centre Bergen**



COMPOSITION OF DESPHALTED OIL

(IATROSCAN), WELL NOR : 30/8-1SR

29-Apr-1996

13:04 (all values in %)

St.Depth (m)	En.Depth (m)	Name	Hydrocarbons				Non-HC TOTAL	TOT HC /Non-HC	Analysing Company
			SAT	ARO	TOTAL	SAT/ARO			
4700.00	4803.00	DST 1B	81.0	15.0	96.0	5.4	4.0	24.0	NORSK HYDRO

Table 8: Saturated hydrocarbon fraction GC peak ratios

Sample	Well	Remarks	Pr/n-C17	Ph/n-C18	(Pr/n-C17) / (Ph/n-C18)	Pr/Ph	n-C17 / (n-C17+n-C27)	CPI-1	CPI-2 (nC26:nC27)
4700-4803m	30/8-1SR	DST-1B	0.49	0.29	1.70	1.98	0.77	1.05	0.93
4716.5m	30/8-1SR	COCH SST	0.46	0.31	1.48	1.72	0.75	1.04	0.93
4720.5m	30/8-1SR	COCH SST	0.48	0.31	1.53	1.72	0.74	1.03	0.93
4721.5m	30/8-1SR	COCH SST	0.48	0.31	1.56	1.78	0.76	1.04	0.93
4723.1m	30/8-1SR	COCH COAL	0.39	0.72	0.54	0.70	0.87	0.96	0.89
4723.5m	30/8-1SR	COCH SST	0.47	0.30	1.58	1.93	0.77	1.04	0.93
4724.5m	30/8-1SR	COCH SST	0.47	0.28	1.66	1.94	0.76	1.04	0.92
4806-4809m	30/8-1SR	SH/COAL	0.31	0.64	0.49	0.59	0.90	1.00	0.92
4895-4897m	30/8-1SR	SH/COAL	0.36	0.24	1.55	2.00	0.88	1.15	1.00
4952-4955m	30/8-1SR	SH/COAL	0.44	0.29	1.56	2.00	0.90	1.60	1.00
Reference oil sample (NSO-1)									
BIOMN02S			0.60	0.47	1.27	1.53	0.79	1.05	0.89
BIOMN02S			0.61	0.51	1.20	1.42	0.78	1.05	0.90

Table 9: Saturated Hydrocarbon Biomarker Results (Summary), Well 30/8-1SR

Start Depth (m)	End Depth (m)	Type	Lith.	Method description	Data Type	Result quality	Analysing Company
4700	4803	OIL	DST-1B	SIM on SAT fraction	height	weak	NORSK HYDRO
4700	4803	OIL	DST-1B	MSQ on SAT fraction	height	OK	NORSK HYDRO
4716.5	4716.5	COCH	SST	SIM on SAT fraction	height	weak	NORSK HYDRO
4720.5	4720.5	COCH	SST	SIM on SAT fraction	height	weak	NORSK HYDRO
4721.5	4721.5	COCH	SST	SIM on SAT fraction	height	weak	NORSK HYDRO
4723.1	4723.1	COCH	COAL	SIM on SAT fraction	height	OK	NORSK HYDRO
4723.5	4723.5	COCH	SST	SIM on SAT fraction	height	OK	NORSK HYDRO
4724.4	4724.5	COCH	SST	SIM on SAT fraction	height	weak	NORSK HYDRO
4806	4809	DC	SH/COAL	SIM on SAT fraction	height	OK	NORSK HYDRO
4895	4897	DC	SH/COAL	SIM on SAT fraction	height	OK	NORSK HYDRO
4952	4955	DC	SH/COAL	SIM on SAT fraction	height	OK	NORSK HYDRO
Reference oil sample (NSO-1)							
BIOMN02S				SIM on SAT fraction	height	OK	NORSK HYDRO
BIOMN10S				SIM on SAT fraction	height	OK	NORSK HYDRO

Table 10: Saturated Hydrocarbon Biomarker Results (Steranes), Well 30/8-1SR

Start Depth (m)	End Depth (m)	Type	Lith.	Analysis type	%29 α S	%29 β	%Preg.	%27dia	%27ste	%28ste	%29ste	%30ste	Ho/St2	Analysing Company
4700	4803	OIL	DST-1B	SIM										NORSK HYDRO
4700	4803	OIL	DST-1B	MSQ	52	58	46	78	23	30	41	5	2	NORSK HYDRO
4716.5	4716.5	COCH	SST	SIM	42	65		65	41	23	25		4	NORSK HYDRO
4720.5	4720.5	COCH	SST	SIM									5	NORSK HYDRO
4721.5	4721.5	COCH	SST	SIM				65	46	27	17		5	NORSK HYDRO
4723.1	4723.1	COCH	COAL	SIM	50	63	27	50	28	25	41		3	NORSK HYDRO
4723.5	4723.5	COCH	SST	SIM	51	62	15	44	37	28	29	7	3	NORSK HYDRO
4724.4	4724.5	COCH	SST	SIM										NORSK HYDRO
4806	4809	DC	SH/COAL	SIM	45	62	23	50	36	25	31	8	4	NORSK HYDRO
4895	4897	DC	SH/COAL	SIM	51	66	18	52	33	25	34	8	5	NORSK HYDRO
4952	4955	DC	SH/COAL	SIM	53	63	37	55	36	26	30	7	5	NORSK HYDRO
Reference oil sample (NSO-1)														
BIOMN02S				SIM	48	64	17	54	32	26	30	11	5	NORSK HYDRO
BIOMN10S				SIM	51	65	18	55	33	25	31	12	5	NORSK HYDRO

Table 11: Saturated Hydrocarbon Biomarker Results (Terpane Ratios), Well 30/8-1SR

Start Depth (m)	End Depth (m)	Type	Lith.	Analysis type	%20/3	%23/3	%24/4	%27Ts	%28 α β	%29Ts	%25nor	%29 α β	%30 β α	%30D	%30G	%32 α β S	%35 α β	Analysing Company
4700	4803	OIL	DST-1B	SIM														NORSK HYDRO
4700	4803	OIL	DST-1B	MSQ	22	56	22	55	4	25	16	43	9	8	3	50	34	NORSK HYDRO
4716.5	4716.5	COCH	SST	SIM	21	43		48				42						NORSK HYDRO
4720.5	4720.5	COCH	SST	SIM														NORSK HYDRO
4721.5	4721.5	COCH	SST	SIM	23	43						47						NORSK HYDRO
4723.1	4723.1	COCH	COAL	SIM								41						NORSK HYDRO
4723.5	4723.5	COCH	SST	SIM	11	50	20	42	29	21	29	46	10	11	14	54	44	NORSK HYDRO
4724.4	4724.5	COCH	SST	SIM														NORSK HYDRO
4806	4809	DC	SH/COAL	SIM	13	54	31	52	13	24	9	42	12	22	9	58	47	NORSK HYDRO
4895	4897	DC	SH/COAL	SIM	8	51	37	54	11	25	8	42	11	9	7	60	46	NORSK HYDRO
4952	4955	DC	SH/COAL	SIM	12	56	26	49	10	25	9	41	10	9	6	61	48	NORSK HYDRO
Reference oil sample (NSO-1)																		
BIOMN02S				SIM	12	41	36	54	18	29	5	28	9	9	5	58	44	NORSK HYDRO
BIOMN10S				SIM	11	42	37	55	18	29	6	29	9	9	5	58	44	NORSK HYDRO

Table 12: Saturated Hydrocarbon Biomarker Results (Terpane distribution), Well 30/8-1SR

Start Depth (m)	End Depth (m)	Type	Lith.	Analysis type	%Tri	%27h	%28h	%29h	%30h	%31h	%32h	%33h	%34h	%35h	Analysing Company
4700	4803	OIL	DST-1B	SIM											NORSK HYDRO
4700	4803	OIL	DST-1B	MSQ	25	9	2	30	38	17	0	0	2	1	NORSK HYDRO
4716.5	4716.5	COCH	SST	SIM											NORSK HYDRO
4720.5	4720.5	COCH	SST	SIM											NORSK HYDRO
4721.5	4721.5	COCH	SST	SIM	32										NORSK HYDRO
4723.1	4723.1	COCH	COAL	SIM	31										NORSK HYDRO
4723.5	4723.5	COCH	SST	SIM	28	15	8	18	21	14	9	6	4	3	NORSK HYDRO
4724.4	4724.5	COCH	SST	SIM											NORSK HYDRO
4806	4809	DC	SH/COAL	SIM	22	12	3	17	24	17	9	8	4	4	NORSK HYDRO
4895	4897	DC	SH/COAL	SIM	18	11	3	17	24	17	11	8	4	4	NORSK HYDRO
4952	4955	DC	SH/COAL	SIM	37	14	3	18	26	15	9	6	4	3	NORSK HYDRO
Reference oil sample (NSO-1)															
BIOMN02S				SIM	6	8	6	12	28	16	11	9	5	4	NORSK HYDRO
BIOMN10S				SIM	7	8	6	12	28	16	11	9	5	4	NORSK HYDRO

Table 13: Aromatic hydrocarbon concentrations and peak ratios (from GC-MSD)

Start Depth (m)	End Depth (m)	Well	Type	Lith.	Amounts in ng/mg EOM								BPH/									
					N	Sum C1-N	Sum C2-N	Sum C3-N	P	Sum C1-P	Sum C2-P	MPI1	F1	F2	DNR	%-TAS'n	DBT/P	F/P	1,6DMN	2/1-MN	2/1 - EN	4/1 MDBT
4700	4803	30/8-1SR	OIL	DST-1B	1303	3656	2807	984	370	575	331	1.25	0.75	0.42	20.14	94.00	0.02	0.81	0.86	3.58	6.73	57.17
4716.5	4716.5	30/8-1SR	COCH	SST	213	2851	4940	2461	1252	1851	1223	1.15	0.73	0.41	20.04	94.09	0.02	0.55	0.74	4.23	7.22	85.34
4720.5	4720.5	30/8-1SR	COCH	SST	290	3429	5117	2665	1253	1977	1386	1.11	0.70	0.40	16.11	97.07	0.02	0.56	0.65	3.73	7.01	93.07
4721.5	4721.5	30/8-1SR	COCH	SST	334	3443	5228	2729	1324	2022	1364	1.09	0.70	0.39	16.67	96.01	0.02	0.56	0.70	3.90	7.05	90.90
4723.1	4723.1	30/8-1SR	COCH	COAL	4210	11169	6018	1406	2453	2946	1296	0.99	0.73	0.44	29.55	90.99	0.02	0.41	1.40	5.64	8.76	62.51
4723.5	4723.5	30/8-1SR	COCH	SST	537	4132	5239	2540	1142	1779	1179	1.14	0.71	0.41	17.40	93.85	0.02	0.58	0.76	4.14	6.96	79.11
4724.5	4724.5	30/8-1SR	COCH	SST	126	2506	4784	2763	1239	1908	1319	1.10	0.70	0.39	17.92	94.22	0.02	0.61	0.64	4.06	6.82	71.85
4806	4809	30/8-1SR	DC	SH/COAL	2745	4201	11713	5799	4395	5724	3144	0.98	0.70	0.41	15.19	95.06	0.02	0.87	1.35	3.00	4.37	31.93
4895	4897	30/8-1SR	DC	SH/COAL	4264	12231	8665	2841	4539	5536	3293	0.96	0.71	0.43	14.01	91.82	0.03	0.19	1.66	3.21	4.37	42.96
4952	4955	30/8-1SR	DC	SH/COAL	5482	15730	10091	2901	4861	6171	3094	1.09	0.75	0.44	18.61	91.04	0.03	0.54	1.86	4.09	4.52	38.02
Reference oil sample (NSO-1)																						
BIOMN16A					1012	2766	3387	2441	283	461	362	0.55	0.43	0.23	2.65	25.02	0.06	0.44	0.35	1.33	1.96	3.13
BIOMN25A					973	2841	3594	2445	247	443	330	0.57	0.43	0.23	2.65	26.41	0.07	0.52	0.31	1.17	2.02	3.09

Table 14

Petroleum Geochemistry Group
Research Centre Bergen
29-Apr-1996 13:19

**ISOTOPE ANALYSIS RESULTS (OIL SAMPLES), WELL NOR : 30/8-1SR**

St.Depth (m)	En.Depth (m)	Name	d13C OIL	d13C SAT	d13C ARO	d13C POL	d13C ASP	Analysing Company
4700.00	4803.00	DST 1B	-27.64	-29.02	-25.69			GEOLABNOR

HYLAB RESULTS MANAGEMENT: ISOTOPE ANALYSIS RESULTS SELECTED FROM SCREEN

Table 15

NORSK HYDRO

17-Jun-1996 10:23

Well	Type	St.Depth	En.Depth	Meth	dDC1	Etha	Prop	Buta	IBut	13CO2	18CO2	Sample ID	Dup
30/8-1SR	GAS	4700.00	4803.00	-39.80	-187.00	-28.10	-25.70	-25.50	-26.90	-5.60	-5.60	605500	1

29-Apr-1996 13:22

Well	Type	En.Depth	C1(%)	C2(%)	C3(%)	iC4(%)	nC4(%)	iC5(%)	nC5(%)	CO2(%)	C1-C5(%)	Total(%)	Wetness(%)	iC4/nC4(%)
30/8-1SR	GAS	4803.00	84.7	7.2	2.3	0.4	0.8	0.3	0.3	3.9	96.0	99.9	11.28	0.55

Table 17: C4 to C20 hydrocarbon composition and Thompson parameters of DST-1B well 30/8-1SR

propane	iso-butane	n-butane	iso-pentane	n-pentane	cyclopentane	2,3dm-butane	2m-pentane	3m-pentane	n-hexane	2,2dm-pentane	m-cyclo-pentane	2,4dm-pentane	2,2,3tm-butane	benzene
7.5	7.1	17.8	21.5	29.3	1.2	1.9	17.4	9.7	28.5	0.7	13.4	1.5	0.2	10.8
3,3dm-pentane	cyclohexane	2m-hexane	2,3dm-pentane	1,1dm-cyclopentane	3m-hexane	C1,3dm-cyclopentane	T1,3dm-cyclopentane	T1,2dm-cyclopentane	iso-octane	n-heptane	m-cyclo-hexane	2,2dm-hexane	e-cyclo-pentane	2,4dm-hexane
0.5	19.8	8.5	2.3	1.7	8.4	2.6	2.5	3.8	5.8	22.6	33.6	1.4	1.3	1.1
1T,2C,4m-cyclopentane	1,1,2,C3tm-cyclopentane	toluene	2m-heptane	3,4dm-hexane	T1,3dm-cyclohexane	n-oktane	e-cyclo-hexane	i-C8	e-benzene	metha-xylene	para-xylene	ortho-xylene	n-nonane	i-C10
1.0	0.7	25.9	6.2	5.8	2.3	16.8	4.6	1.0	2.2	12.1	4.6	3.4	9.9	1.2
n-decane	i-C11	n-C11	n-C12	i-C13	phenylhexane	i-C14	n-C13	i-C15	n-C14	i-C16	n-C15	n-C16	i-C18	n-C17
7.8	1.4	6.4	4.9	0.8	5.8	0.9	4.7	0.7	4.0	1.3	3.6	3.2	0.7	2.9
pristane	n-C18	2,6,10tm-7-(3mb)-dodecane	phytane	n-C19	n-C20									
1.5	2.5	0.2	0.8	2.3	1.9									

Heptane value	isohexane value	Paraffinicity	Aromaticity	Pristan/n-C17	Phytane/n-C18	Pi/Ph
21.89	1.91	0.67	0.99	0.51	0.31	1.96

**SPORE COLOUR AND
KEROGEN ANALYSIS
OF THE
30/8-1SR WELL**

**Interval 4720m to 5140m,
Norwegian North Sea**

Report No. 7780/Ic

Project No. Ic/GN152

Prepared by:
A G Collins

Of:
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For:
**Norsk Hydro Produksjon a.s.
Sandsliveien 90, 5049 Sandsli, Norway**

APRIL 1996

Robertson

30/8-ISR Well, Norwegian North Sea

CHAPTER 1

Summary

Ten ditch cuttings samples from the interval 4720m to 5140m in the Norsk Hydro 30/8-ISR Norwegian North Sea well have been analysed for spore colour and kerogen type. Results are presented in tabular form and illustrated in an SCI versus depth plot.

GENERAL DATA			MATURITY DATA		KEROGEN COMPOSITION DATA						
SAMPLE DEPTH (Metres)	SAMPLE TYPE	ANALYSED LITHOLOGY	SPORE COLOUR INDEX	VITR. REFL. R oil av %	% (Visual, from microscopy)			% (Calculated)			
					INERTINITE	VITRINITE	SAPROPEL	INERT	VIT	ALG SAP	WXY SAP
4720	Ctgs		3.0-4.0 C 7.5-8.0		5	95	*				
4791	Ctgs		7.5		60	40	*				
4815	Ctgs		7.5		20	75	5				
4840	Ctgs		8.0		30	70	Mnr				
4885	Ctgs		8.0-8.5		30	70	Mnr				
4912	Ctgs		8.0		20	80	Mnr				
4947	Ctgs		8.0-8.5		10	80	10				
5015	Ctgs		8.5		10	80	10				
5060	Ctgs		8.5-9.0		15	80	5				
5140	Ctgs		8.5-9.0		25	65	10				

MATURITY AND KEROGEN COMPOSITION DATA

TABLE : 1

30/8-1SR Well, Norwegian North Sea

Depth (m)	Amorph. (fluor.) AM-FA	Exinite HE, AL	Amorph. (fluor.) AM-FA	Vitrinite WO	Inertinite CO
4720	(60 c)	*	70	25	5
4791	(25 c)	*	10	30	60
4815	(Mnr c)	5 sp	15	60	20
4840	(10 c)	Mnr sp	40	30	30
4885	(20 c)	Mnr sp	40	30	30
4912	(Mnr c)	Mnr sp	30	50	20
4947	(Mnr c)	10 sp	15	65	10
5015	-	10 sp	20	60	10
5060	-	5 sp	15	65	15
5140	(10 c)	10 sp	10	55	25

TABLE 2 Detailed visual kerogen analysis data

Table 1A: Maturity of Sample Series Norsk Hydro 30/8-1SR

Project No.: 606456/52107

Sample Depth (m)	Vitrinite Reflectance			UV Fluorescence			Comments
	R _v Average	No. of readings	Con- fidence	Form	Content	Colour	
4720	N.D.P.	-	-	-	-	-	100% rock flour, tr. sst, tr. silt. Tr. graphitic specks. Little true sediment. PDC/turbo drilling
4791	1.74	20	D	-	-	-	Silty Sandstone. Phytoclasts in coaly wisps very brecciated and degraded
4815	1.55	20	D	Amorphinite	Low	L.O.	Phytoclasts very degraded. Variable R.o.
4840	1.66	20	C	Amorphinite	Low	Y/O	10% coal. Degraded. Variable R.o.
4885	1.65	20	C	Amorphinite	Low	Y/O	Trace coal. Degraded. Distorted bedding in some silty shale cuttings
4912	1.60	20	D	Amorphinite	Mod/Rich	Y/O + M.O.	20% sst. Distorted bedding in shale
4947	1.53	20	C	Amorphinite	Moderate	Y/O	10% sst, trace coal.
5015	1.67	20	C	-	-	-	20% sst. 20% coal, brecciated and degraded
5060	1.75	20	B	Amorphinite	Low	L.O.	20% coal, 80% carbargillitic shale
5140	1.83	20	C	-	-	-	10% sst

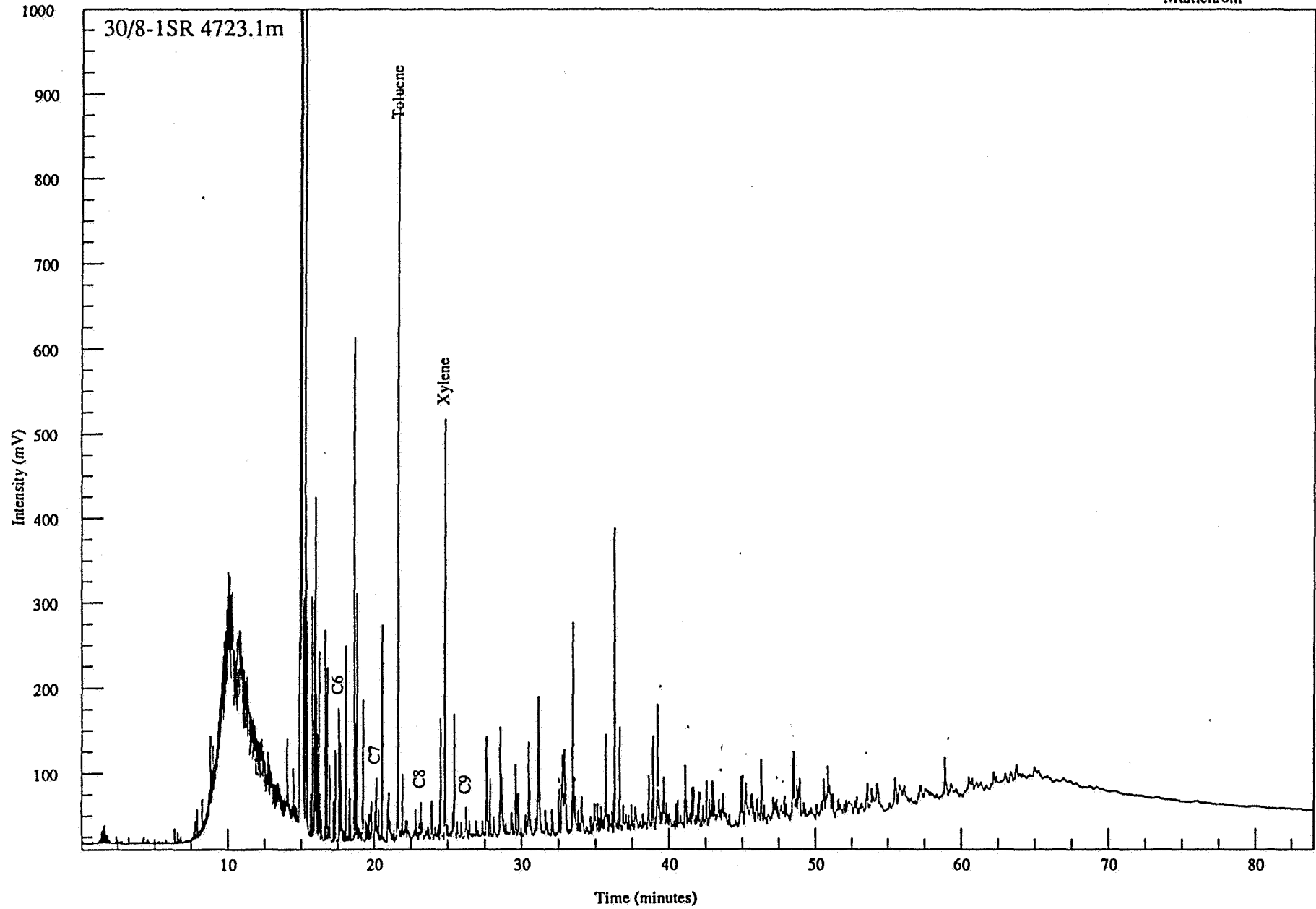
Table 1B: Organic Petrography of Sample Series Norsk Hydro 30/8-1SR

Project No.: 606456/52107

Sample Depth (m)	Amorphinite	Bitumen	Phytoclasts							Comments
			Content	Composition (%)				Vitrinite	Inertinite /Reworked	
				Liptinite						
				Algae	Spores	Cuticle	Resin			
4720	Trace	-	Nil	-	-	-	-	-	-	Trace of graphitic specks
4791	Low	-	Very Low	-	-	-	-	50	40	Phytoclasts in coaly wisps, very brecciated and degraded
4815	Var.-Mod-Rich	-	Low -Moderate	-	-	-	-	30	70	Phytoclasts very degraded. Amorphinite fluoresces L.O.
4840	Mod-Rich	-	Moderate	-	-	-	-	30	70	10% coal. Phytoclasts degraded. Amorphinite fluoresces Y/O
4885	Mod-Rich	-	Low -Moderate	-	-	-	-	20	80	Trace coal. Phytoclasts degraded. Amorphinite fluoresces Y/O
4912	Mod+Rich	-	Moderate	-	-	-	-	30	70	Amorphinite fluoresces Y/O + M.O.
4947	Moderate	-	Low	-	-	-	-	50	50	Trace coal. Amorphinite fluoresces Y/O
5015	Rich	-	Moderate -Rich	-	-	-	-	30	70	20% coal, brecciated and degraded
5060	Mod+Rich	-	Rich	-	-	-	-	80	20	20% coal, 80% carbargillitic shale. Amorphinite fluoresces L.O.
5140	Var.-Low+ Rich	-	Very Low	-	-	-	-	Tr.	100	-

Analysis Name : [62265] 21 PN36,9,1.

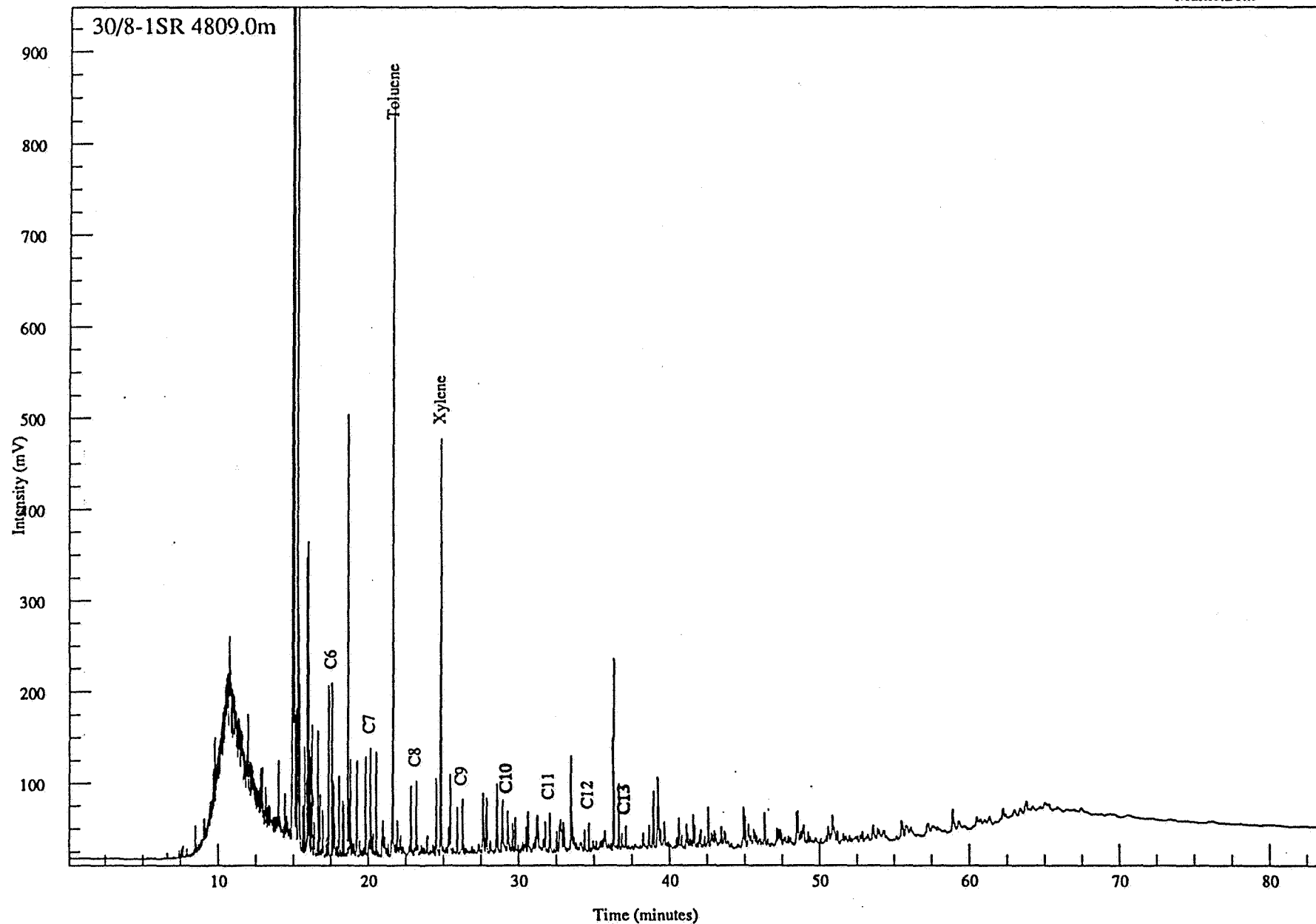
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WELL NOCS 30/8-1SR 4723.10m ccp
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bulk:

Analysis Name : [62265] 21 PN36,10,1.

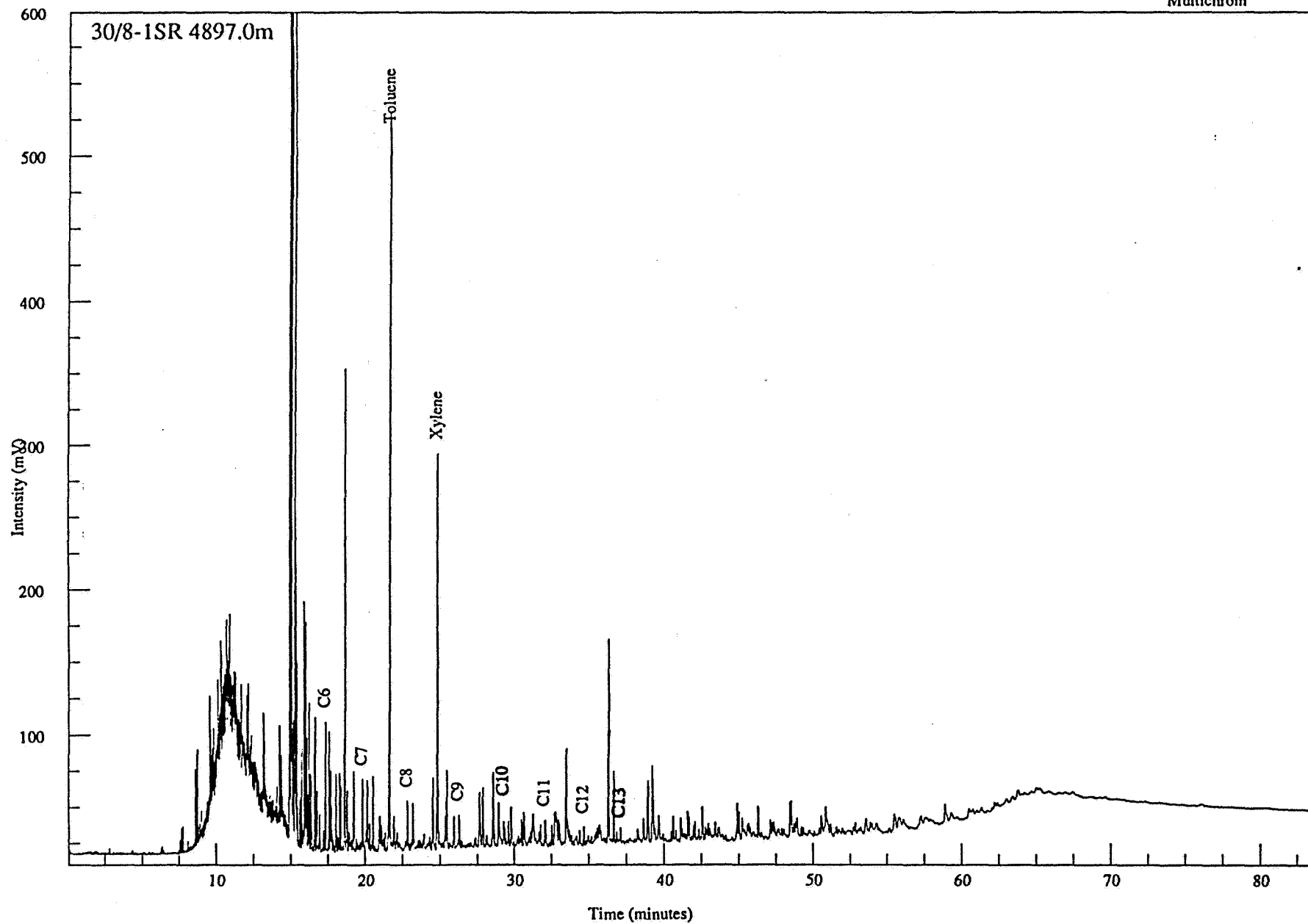
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bulk:

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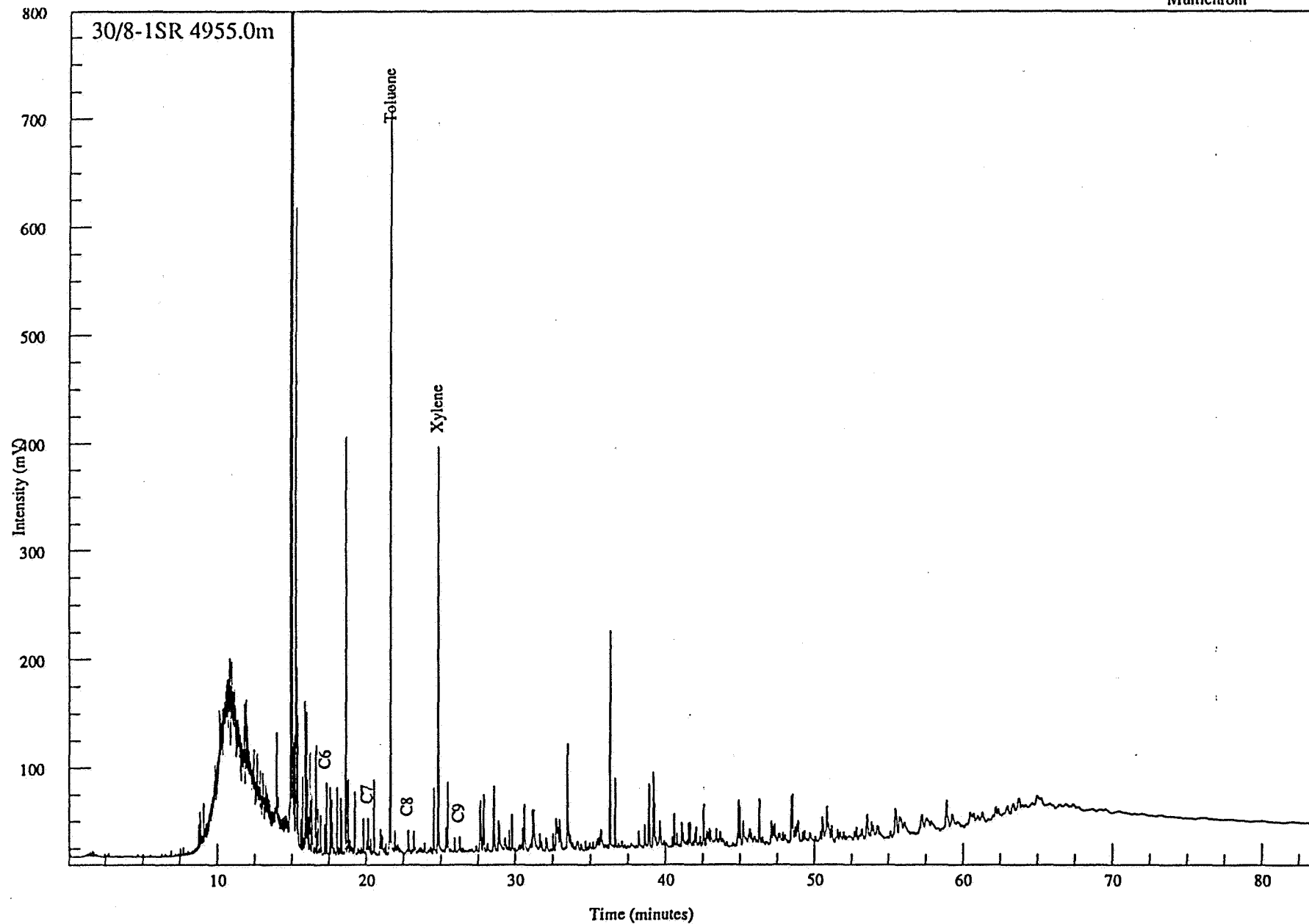
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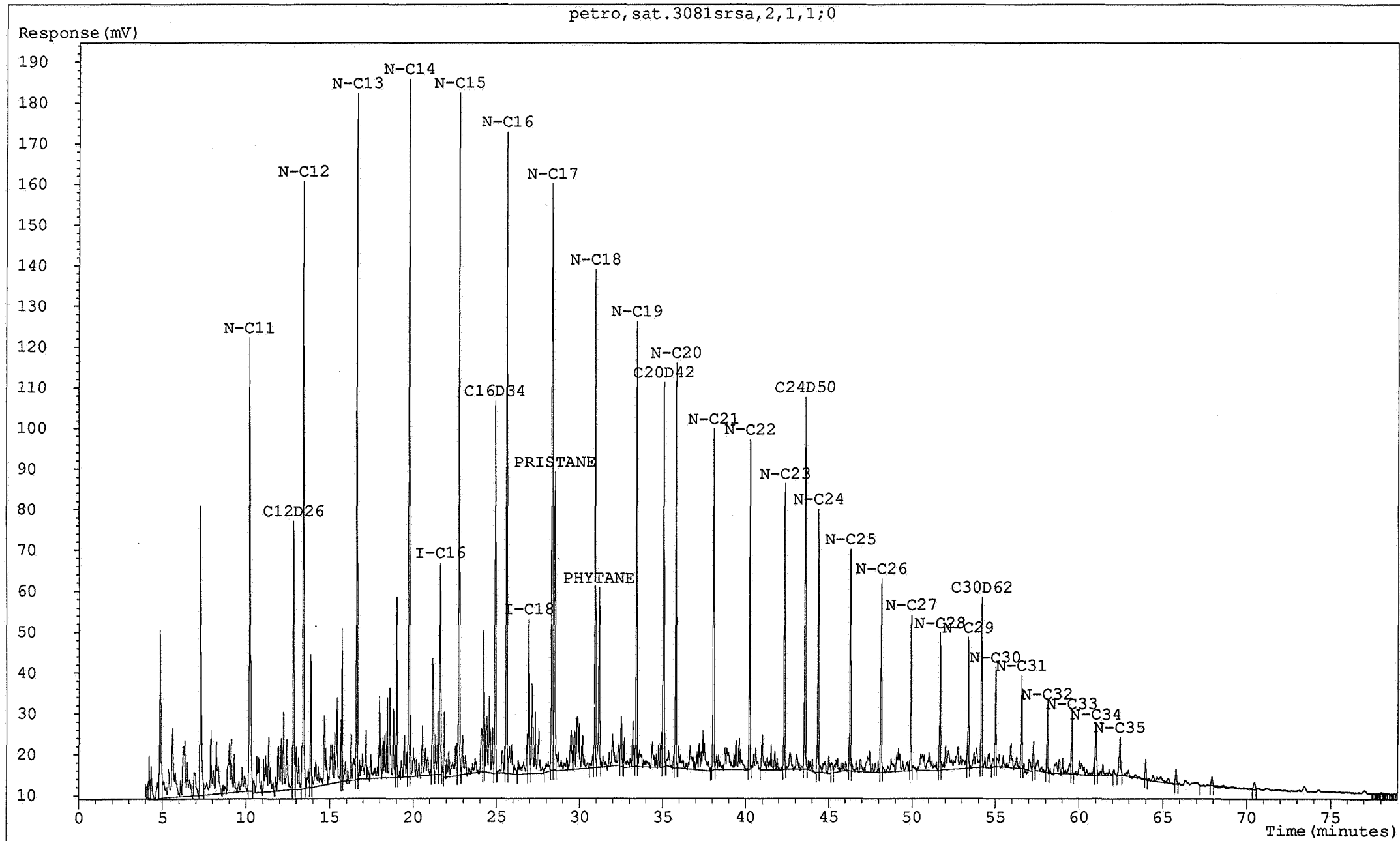
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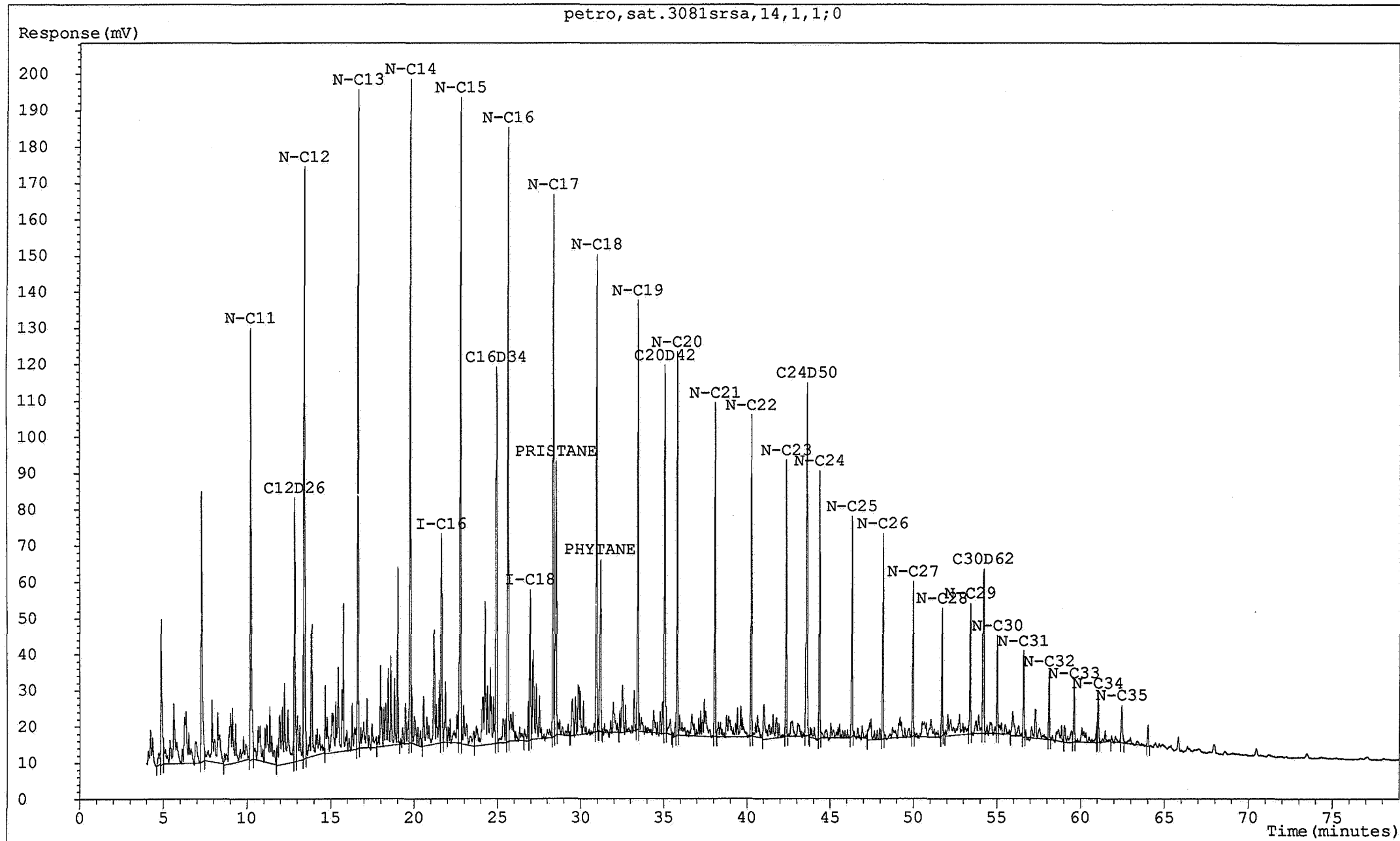
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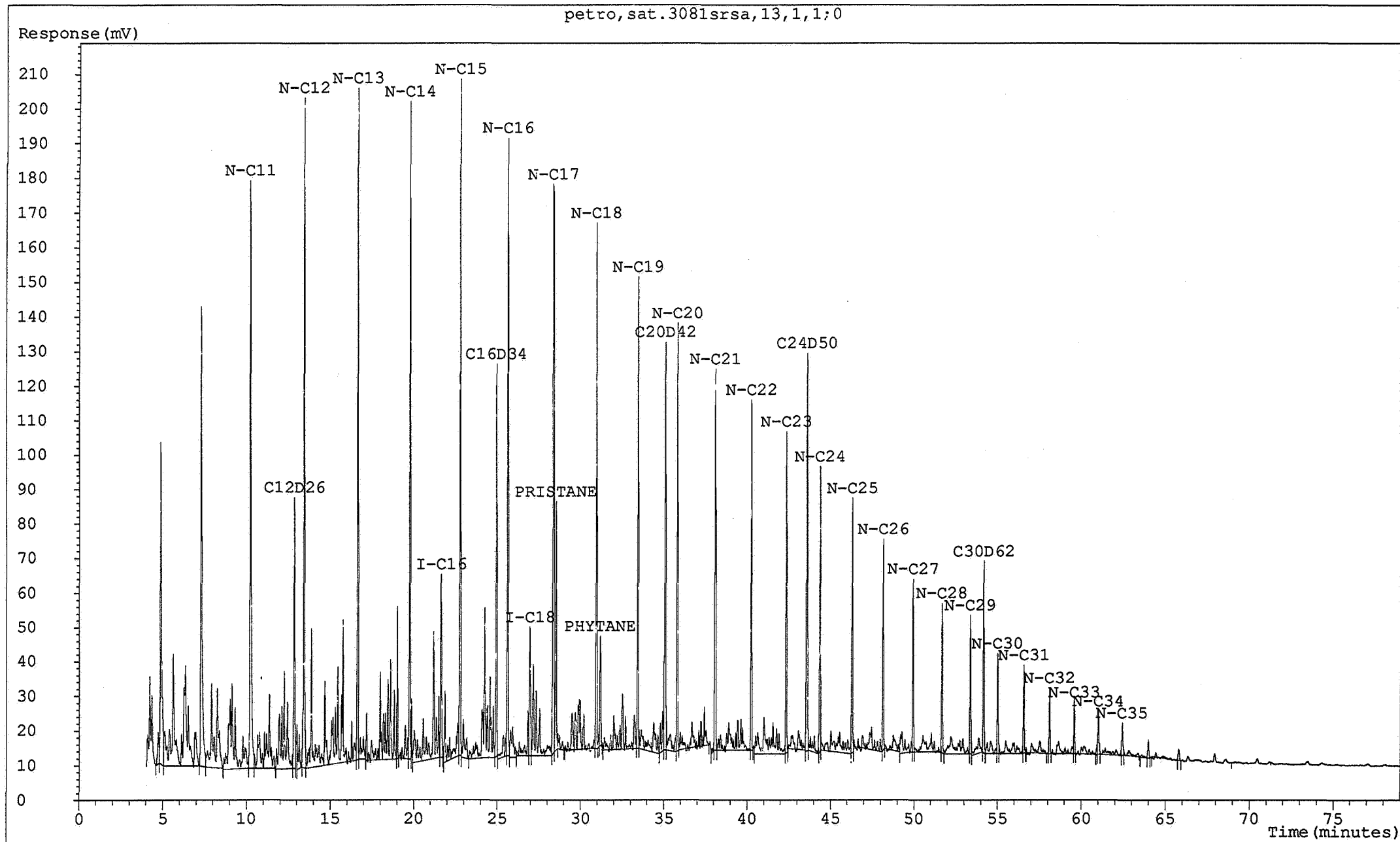
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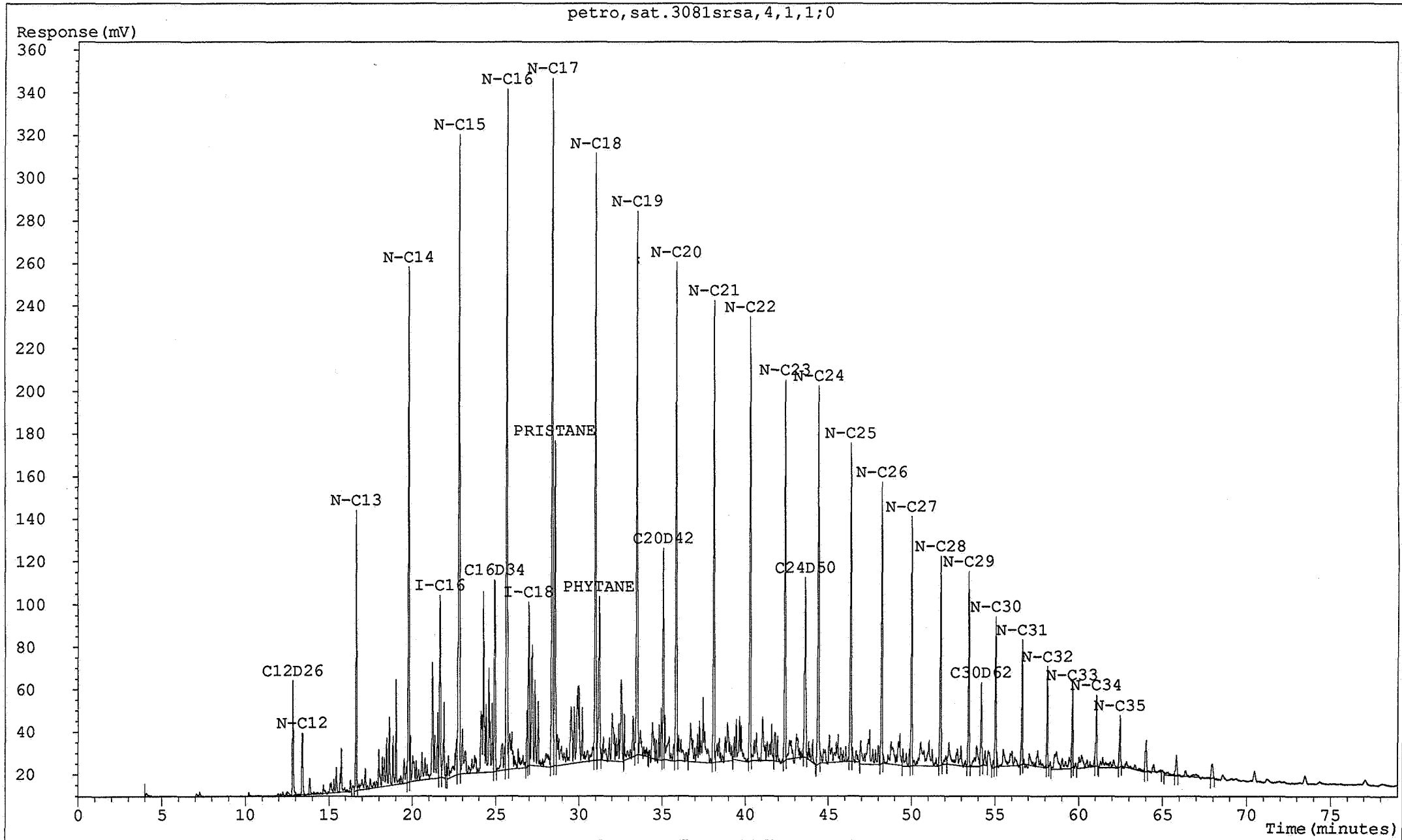


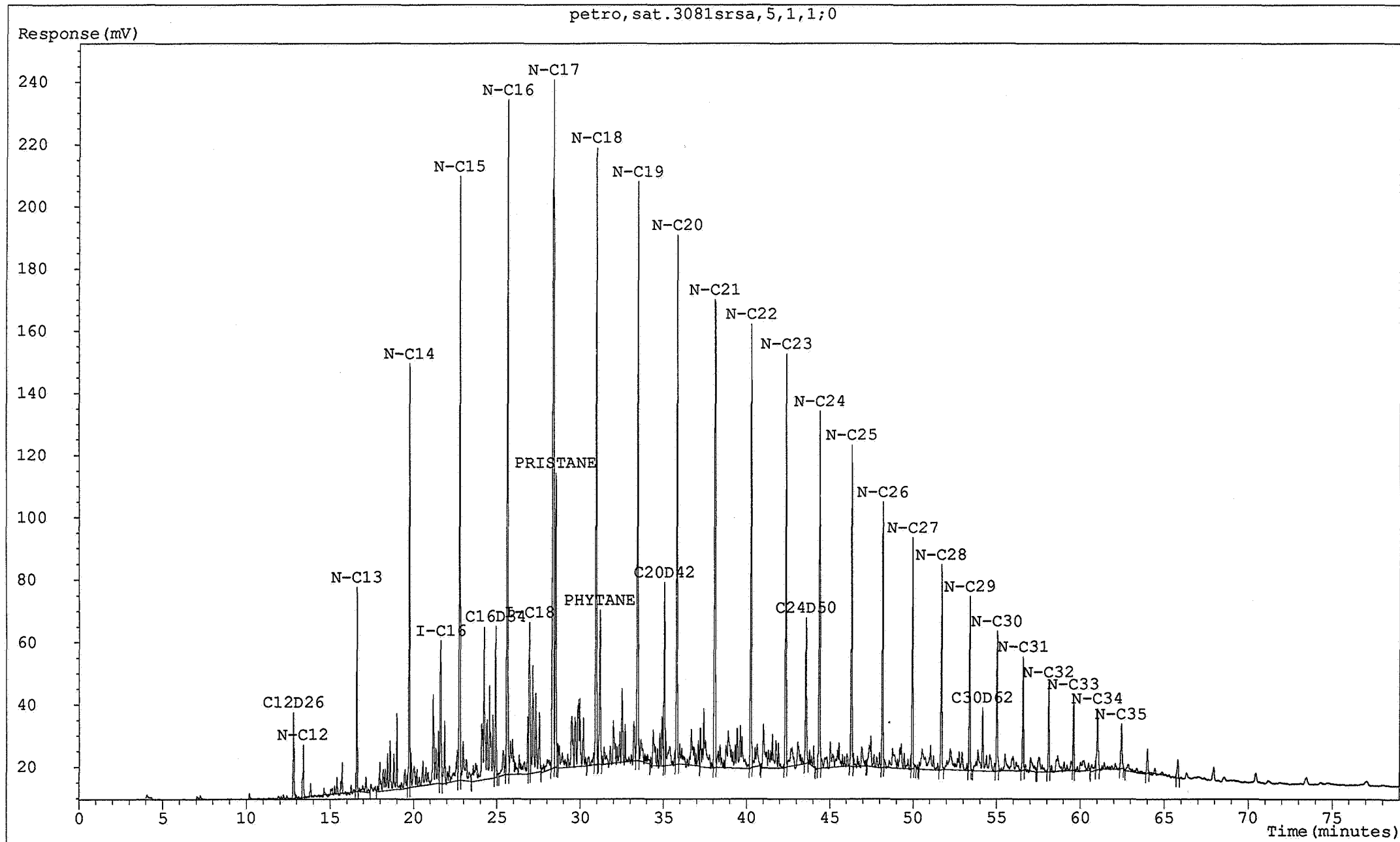
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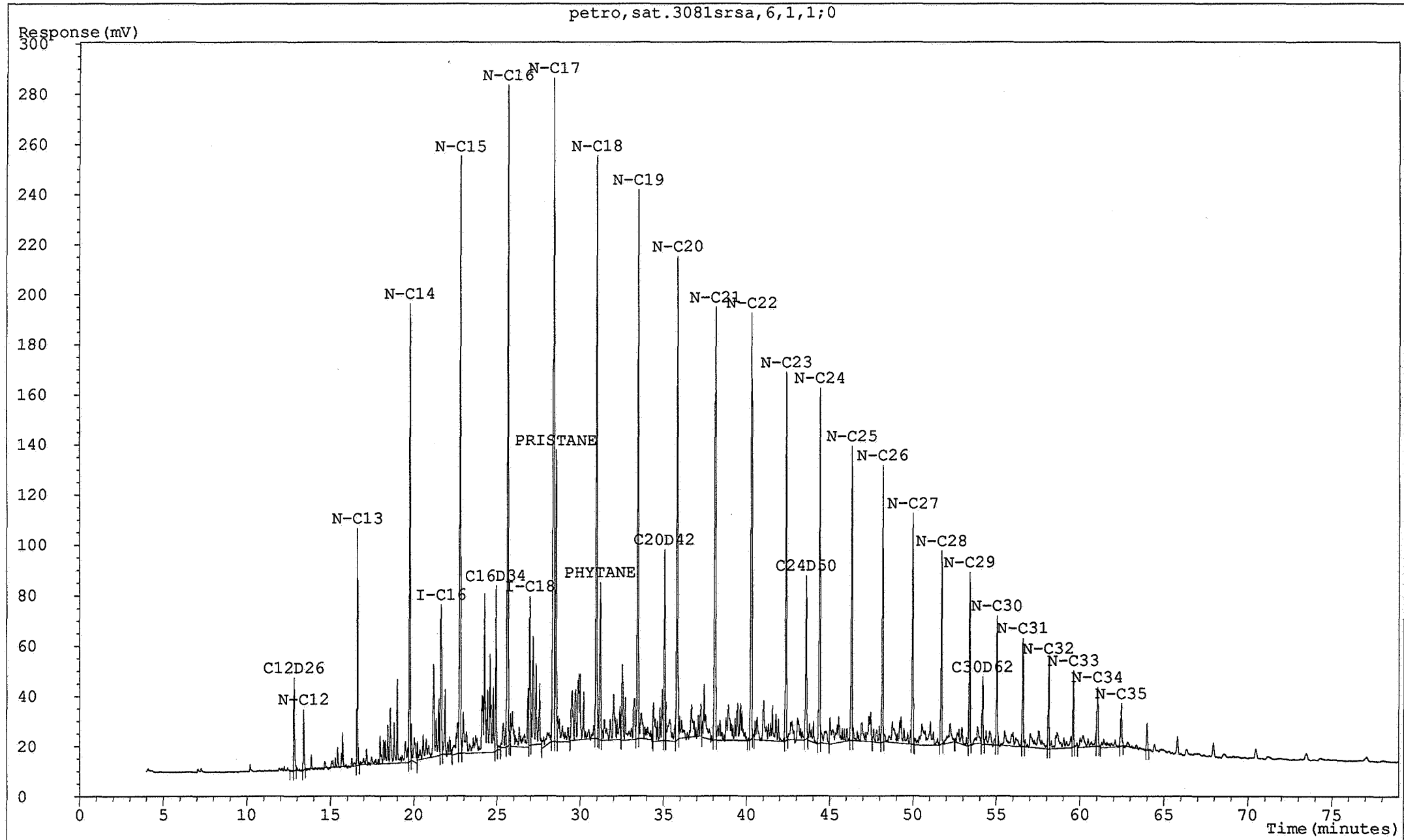


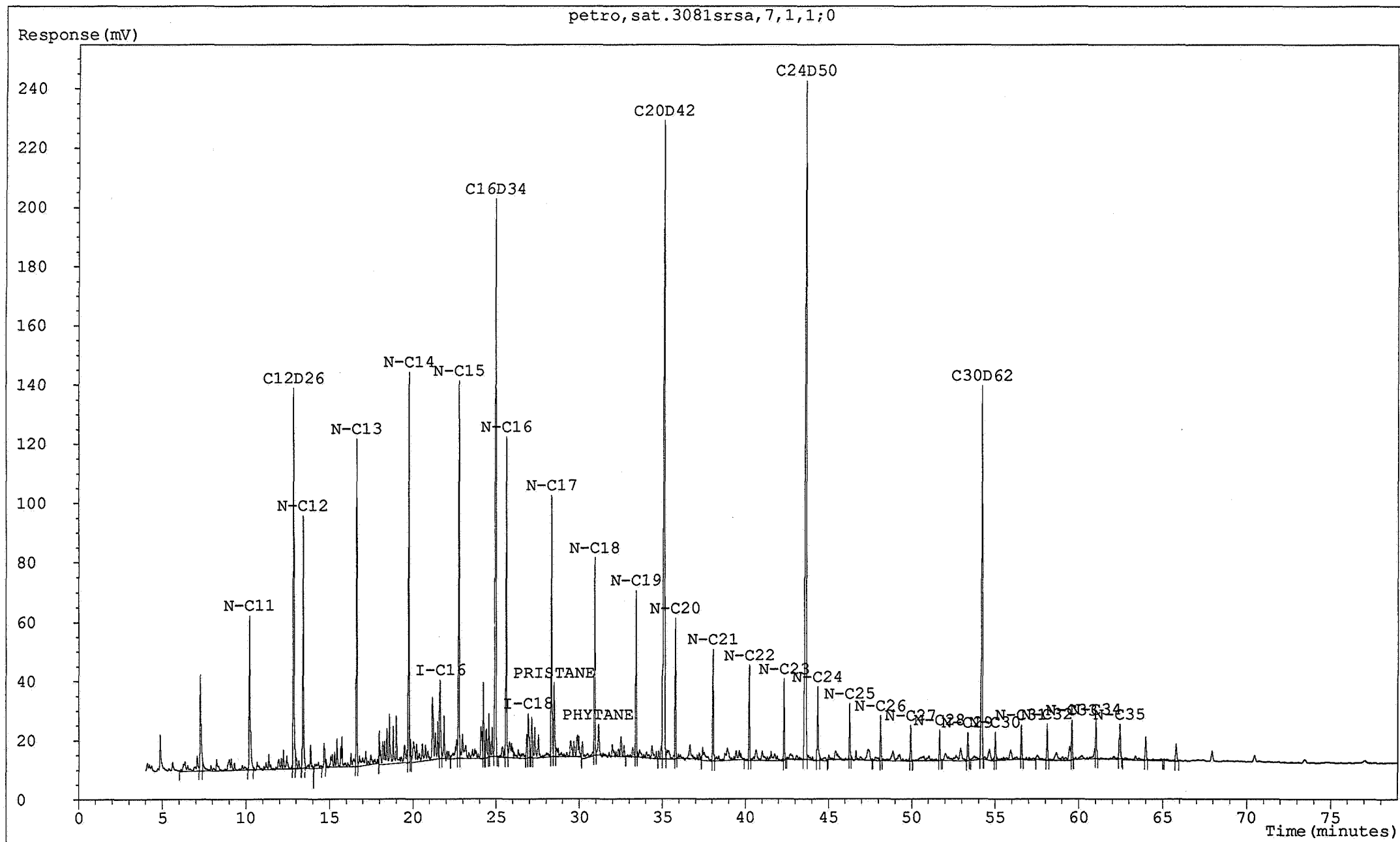




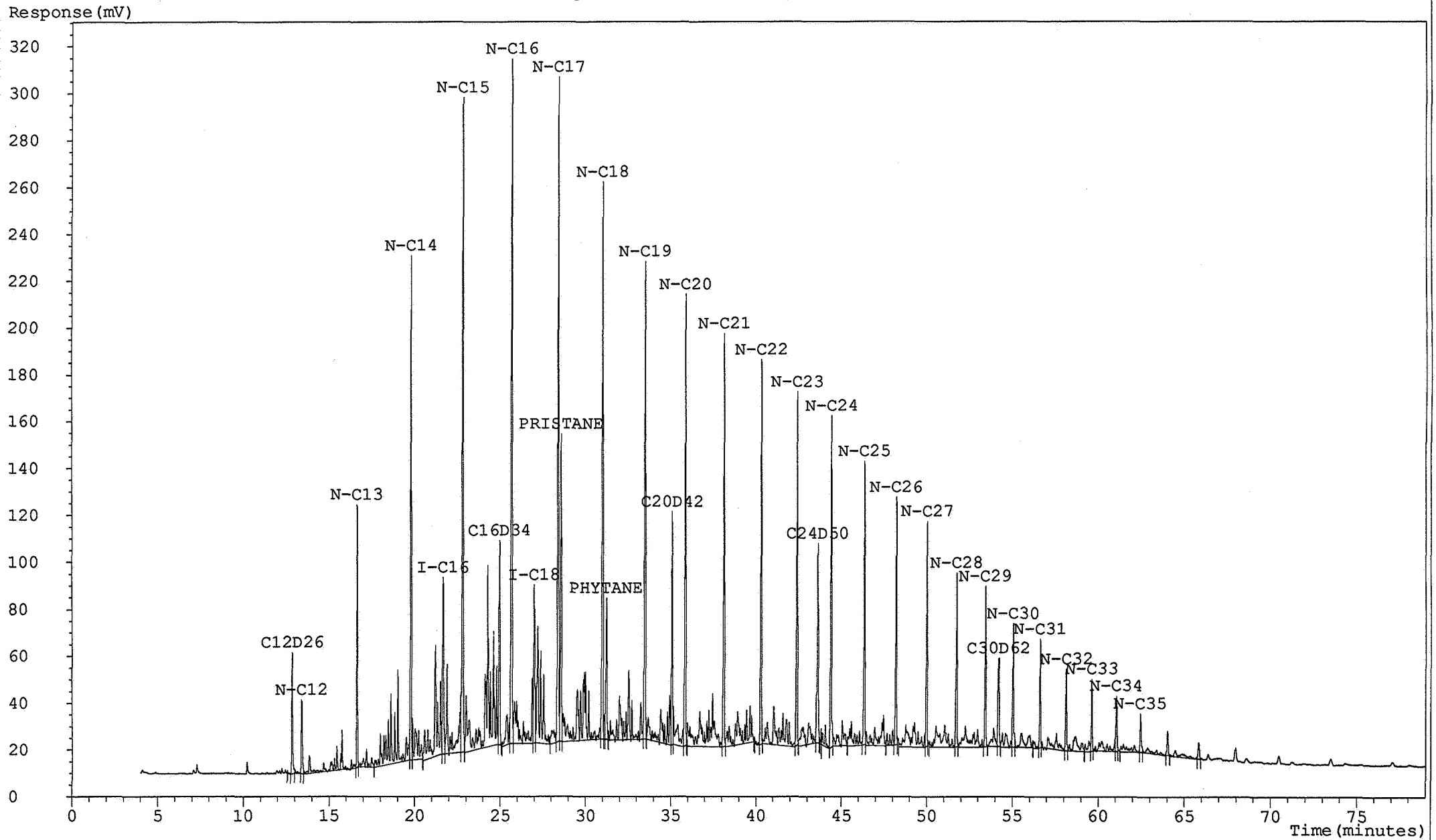


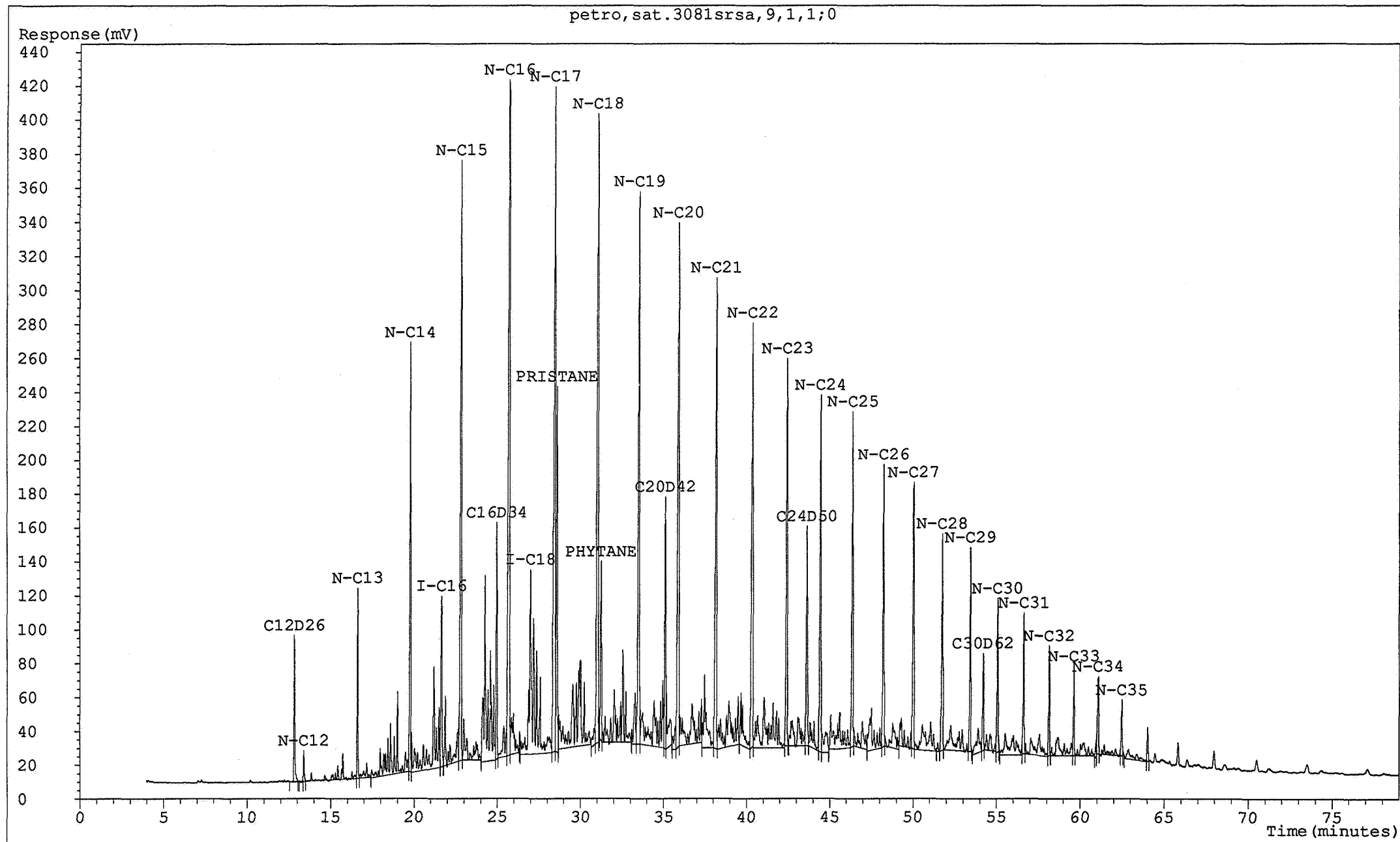


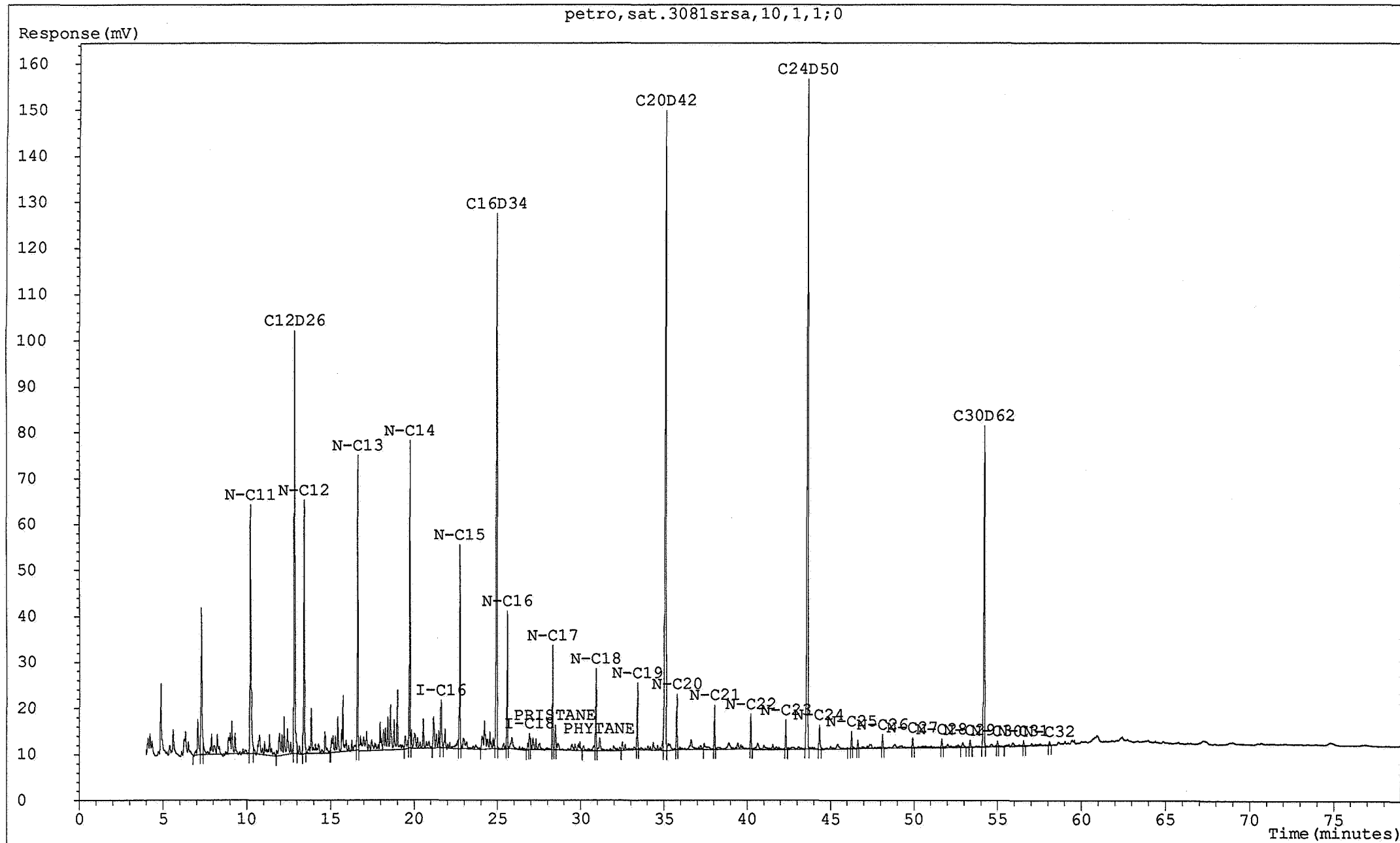




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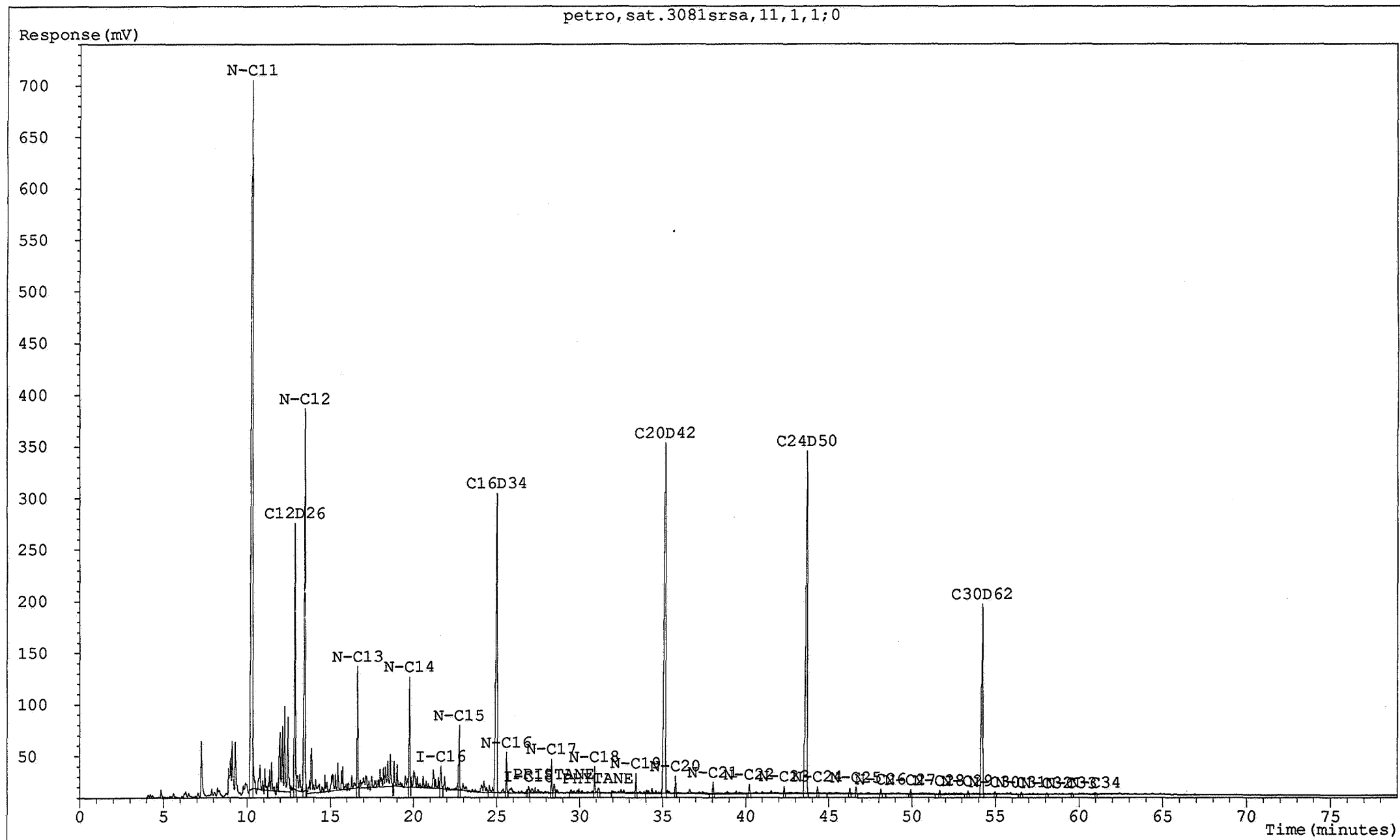




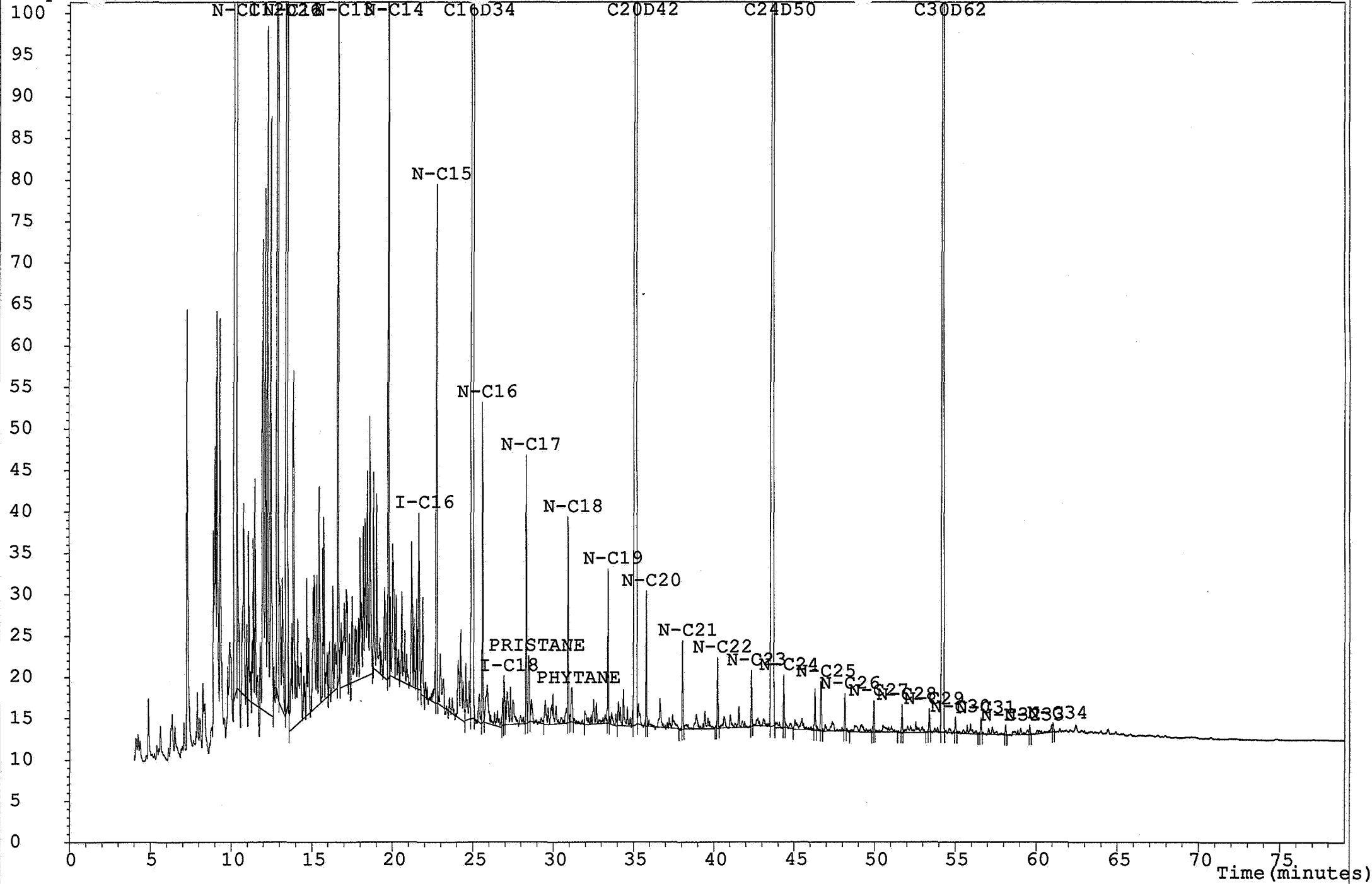


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Sample: 4897m DC Bulk Sat

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Analysis: 3081srsa
Injection: 1

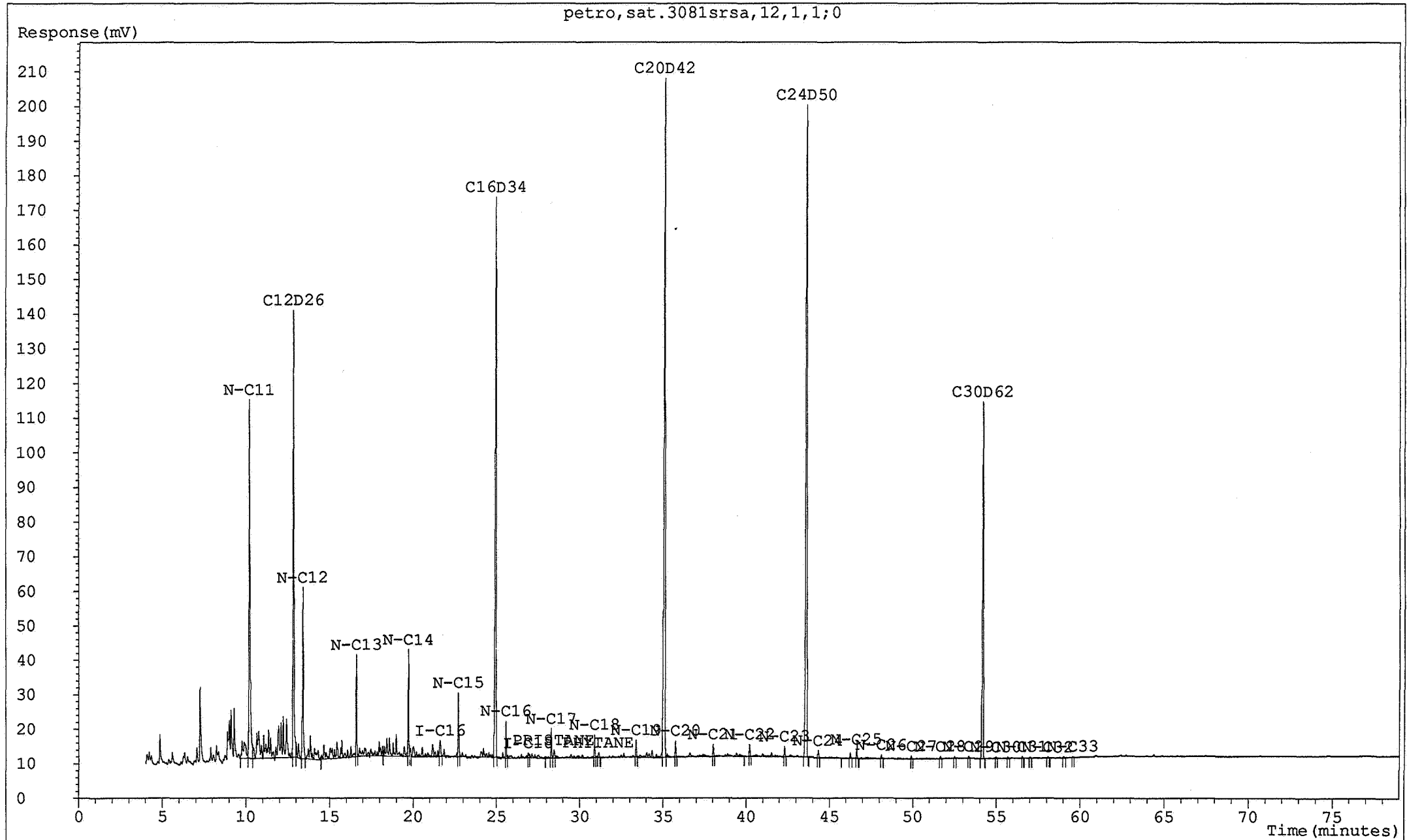


Respon (mV)



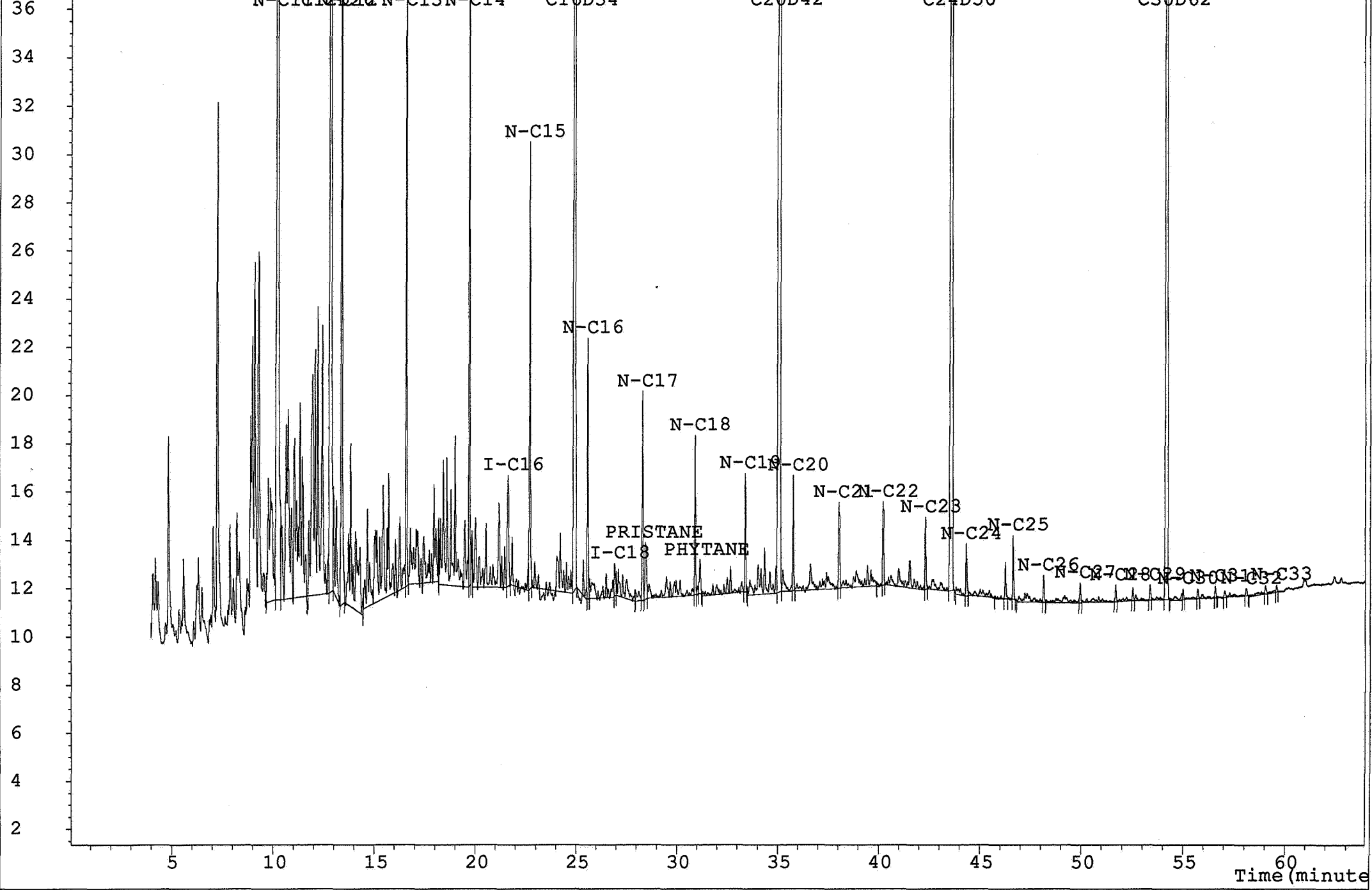
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Sample: 4955m DC Bulk Sat

Page 1
Analysis: 3081srsa
Injection: 1



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Response (mV)



Time (minutes)