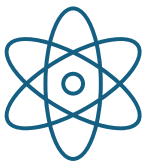
PANDEMONIUM IN NOWHERE RIVER - A NEST QUIZ



BRIEFING

Life in the Nowhere village has taken a turn for the worse: Birds have been falling from the sky, fish have been appearing on the surface of the water belly-up, and paralysis has stricken most of the population of beavers that are usually seen building up dams on the mouth of river that flows water from the Northern mountain terrains to the sandy shores down South.

Noticing all this strange dismay the Park Rangers decided to investigate the cause, and they discovered an ominous note from an unknown author affixed to a tree in the forest. You can find this letter attached to the documentation pertaining to this case in the next pages. In summary this letter announces that the river, which local communities depend on for drinking, irrigation, and agriculture, has been purposely contaminated with a chemical of undisclosed origin.

You and your team of forensic environmental toxicologists are the only ones that can help the population of Nowhere figure out what has polluted their precious water, catch the perpetrator and restore normalcy by neutralizing the intoxicating compound.

TO WHOMEVER FINDS THIS NOTE:

I have forsaken this place by poisoning its precious water source! Will you be able to piece together the clues, solve the puzzle and save the fate of the land and its people?

1.

It's time to gather your experts, a team of 6 heroes, who will help you solve this toxicological nightmare! Within this wordsearch you will find the job titles of the following six experts:

1. Expert in animal health and anatomy
2. Issues and illnesses of the general public
3. First aid – to people and the environment, when it is needed really quickly
4. Studies poisons in wildlife
5. Can tell you what chemicals are in a sample
6. A water scientist

U	N	O	M	E	I	N	G	H	R	N	A	I	R	A	N	I	R	E	T	E	V	H	G	R
E	L	N	T	P	U	B	L	I	C	H	E	A	L	T	H	E	X	P	E	R	T	W	Q	E
S	M	S	O	V	Z	W	P	R	L	B	V	K	Q	E	B	K	V	G	N	T	R	Y	B	K
I	P	E	E	T	G	P	M	E	X	P	Q	J	V	N	H	B	U	Z	F	V	L	J	G	V
L	D	J	R	G	M	B	T	H	Y	B	L	I	U	P	Y	U	T	H	C	Q	P	N	W	A
E	W	O	C	G	Q	O	X	S	V	A	T	P	G	X	Q	Q	K	O	N	D	G	J	N	Q
P	K	I	H	I	E	R	K	M	I	P	N	V	E	P	C	S	V	W	C	D	A	A	V	V
X	I	G	T	O	E	N	I	L	D	G	O	S	W	R	Y	W	D	P	I	S	L	D	Y	P
L	C	X	U	O	Z	I	C	M	Q	K	O	U	J	T	F	V	Y	Z	X	Y	M	V	W	E
J	L	L	K	T	C	G	D	Y	L	G	Z	L	S	F	H	P	A	W	T	B	R	A	F	N
O	U	S	Y	Y	W	M	A	G	R	Q	K	I	O	A	G	L	P	I	F	A	I	R	U	Y
Z	B	V	V	V	W	G	O	P	M	E	G	B	S	C	U	I	C	Z	I	Z	V	O	Z	R
S	W	I	V	U	X	L	Z	M	N	O	S	V	L	A	I	A	C	O	X	D	D	H	T	R
Q	L	X	J	L	L	C	B	L	L	G	H	P	M	I	L	X	S	H	U	A	Z	F	P	H
J	O	R	E	V	S	A	K	O	H	M	J	F	O		C	L	O	D	G	M	O	C	Z	V
H	O	Y	O	L	U	S	R	Y	Q	I	N	Q	C	N	Q	G	L	T	K	D	M	F	C	H
V	Q	P	G	F	S	D	N	T	N	Q	X	H	J	N	D	V	F	D	O	B	Q	Q	J	X
J	F	V	D	F	Y	N	C	O	Q	R	E	Z	X	R	J	E	Y	G	U	C	T	Y	J	P
N	Y	A	T	H	F	B	H	E	Q	M	U	F	L	F	K	X	R	Q	Y	Z	E	G	D	S
Q	P	F	A	J	C	R	P	G	I	I	V	S	T	C	O	Z	Q	J	E	D	V	V	O	N
C	Q	U	J	F	I	U	M	S	R	F	H	V	H	C	M	O	B	J	E	M	S	R	Y	D
L	X	I	C	P	R	L	T	N	K	C	N	F	B	X	U	K	Q	T	A	B	N	R	H	R
P	N	D	B	S	V	R	R	Q	H	J	E	O	Z	I	V	Z	E	K	L	B	L	F	M	K
B	W	Q	C	I	R	H	J	C	W	J	G	V	Y	T	H	H	K	N	D	P	O	Z	U	W
D	X	J	W	D	W	T	W	D	P	R	X	U	J	E	K	J	J	X	S	B	Q	D	Q	I

2.

Now, let's have a closer look at what is happening. Surely, there are clues to help us pin down how this disaster progressed. Were there first signs ignored or not taken seriously enough? What did the briefing note say, and are there any additional events?

Try to **put the following events in a sequence**.

_ _ _ _ _ _ _ _

E

The regional environmental agency assembles a specialized team of forensic environmental toxicologists to lead the investigation into the river's contamination and its effects.

I

Local authorities issue a public advisory, warning against use of river water for drinking, irrigation, or agricultural purposes, and request water quality analysis.

A

Veterinary pathologists perform necropsies on affected wildlife, noting unusual patterns consistent with neurotoxin exposure, and alarm the reginal environmental agency.

D

Water quality analyses report abnormal chemical signatures in river samples, which warrant pathologic examination of the collected wildlife carcasses.

T

Park Rangers, investigating the wildlife anomalies, discover an ominous note affixed to a tree, suggesting intentional river contamination. Local authorities are being informed.

N

Fishermen document widespread fish mortality, observing multiple species floating lifeless on the river's surface.

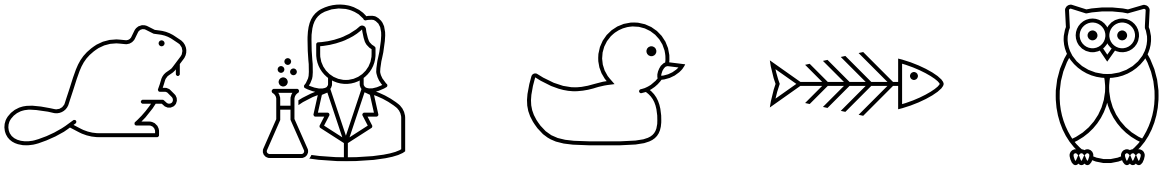
A

Volunteer wildlife biologists confirm widespread paralysis among the local beaver population, particularly those near the river mouth.

A

Ornithologists report a sudden increase in bird fatalities, with numerous avian carcasses found throughout Nowhere village.

Now **choose the right picture** from the code word:



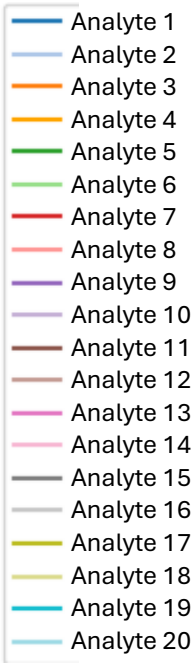
3.

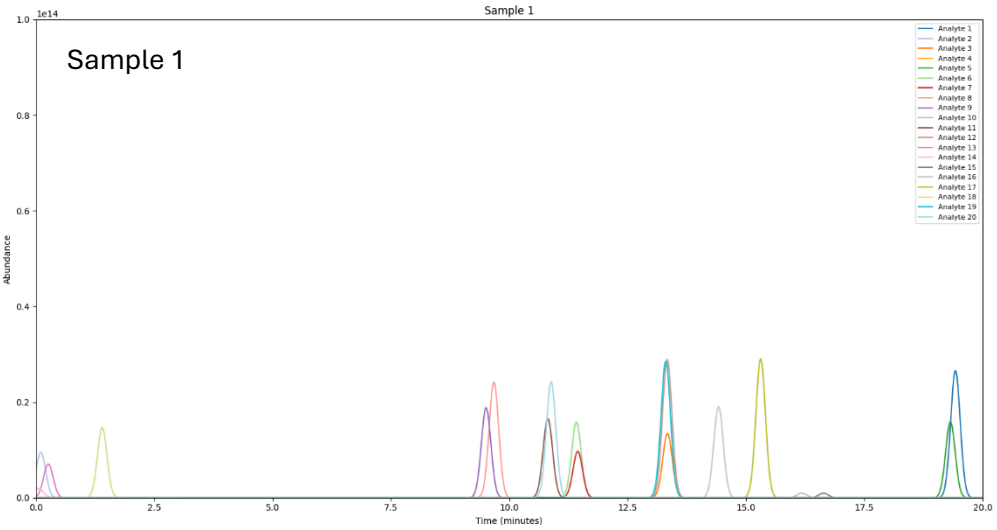
Your team of toxicologists have collected samples from 5 different sites. Find each of the sample sites that were damaged, marked on the map of Nowhere Village. **Can you put together the map?**

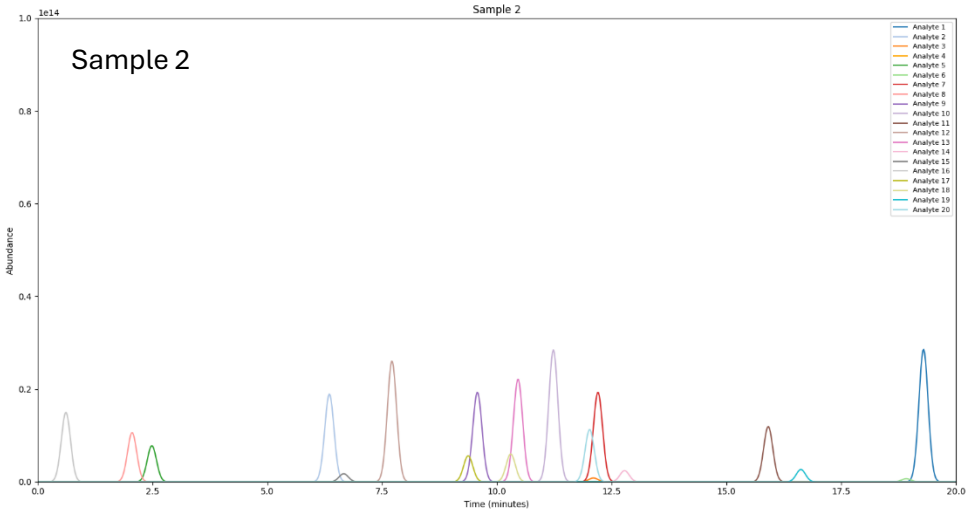
The samples collected from 5 different sites have been sent to the laboratory for analysis using Liquid Chromatography Mass Spectrometry. Your task is to determine the source of contamination by analysing the data. Carefully examine the chromatograms and compare the intensity of the key unknown compound across the different sample locations. Can you pinpoint the location where the contamination began?

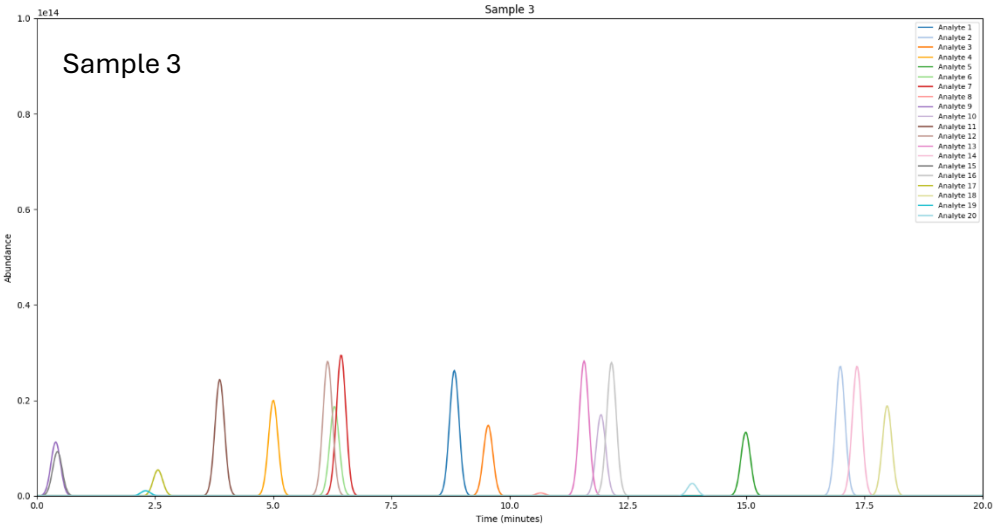
Legend:

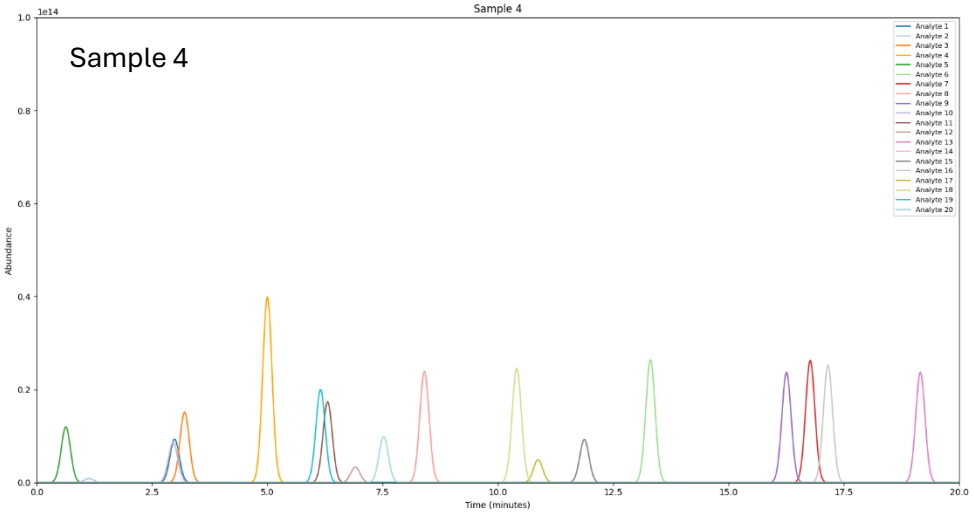
(X and Y-axes are the same scale in all five chromatograms)

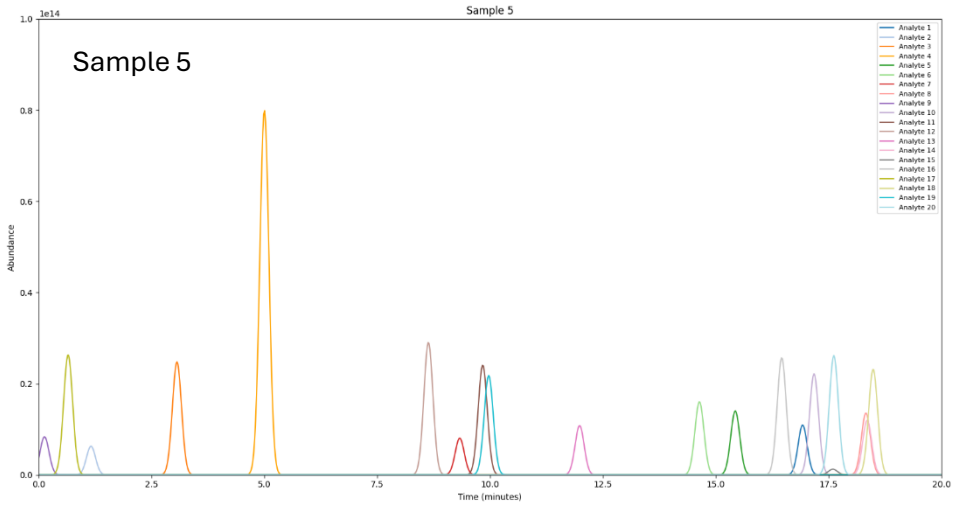



Sample 1
1e14
Abundance
Time (minutes)
Analyte 1
Analyte 2
Analyte 3
Analyte 4
Analyte 5
Analyte 6
Analyte 7
Analyte 8
Analyte 9
Analyte 10
Analyte 11
Analyte 12
Analyte 13
Analyte 14
Analyte 15
Analyte 16
Analyte 17
Analyte 18
Analyte 19
Analyte 20

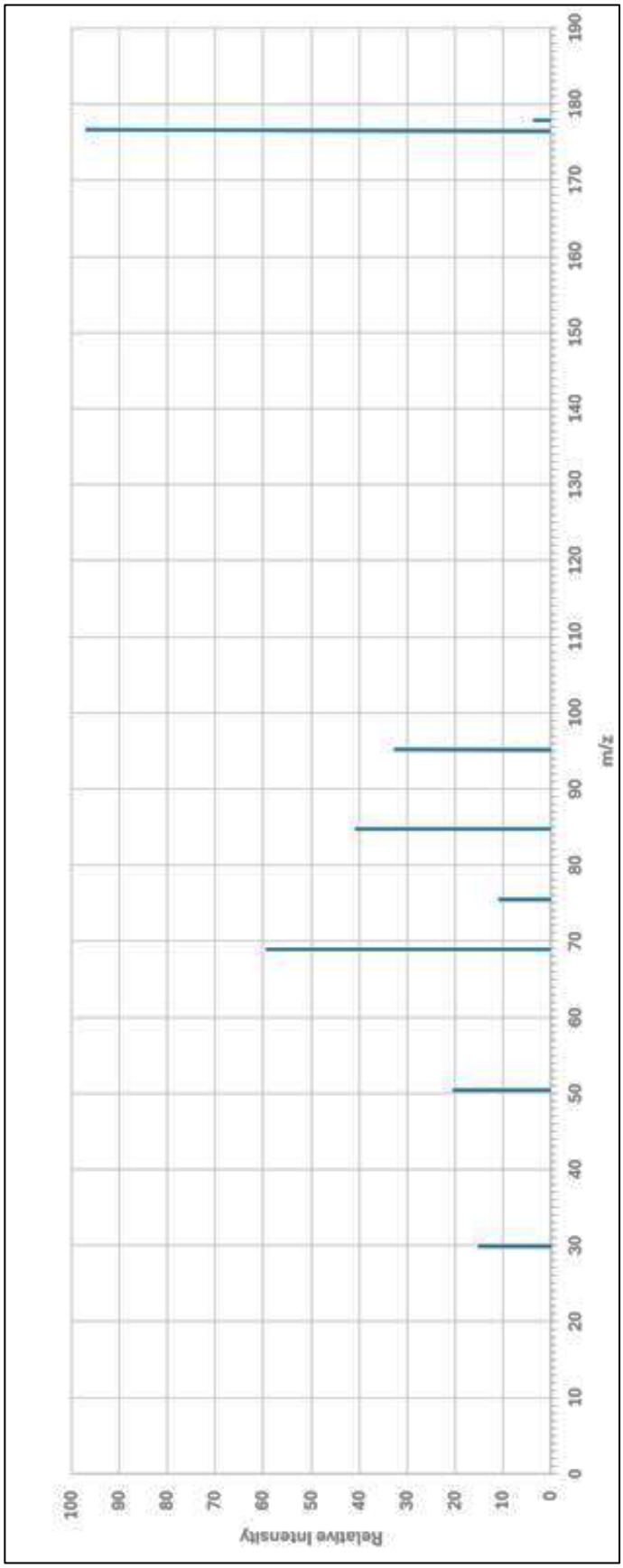

Sample 2
1e14
Abundance
Time (minutes)
Analyte 1
Analyte 2
Analyte 3
Analyte 4
Analyte 5
Analyte 6
Analyte 7
Analyte 8
Analyte 9
Analyte 10
Analyte 11
Analyte 12
Analyte 13
Analyte 14
Analyte 15
Analyte 16
Analyte 17
Analyte 18
Analyte 19
Analyte 20


Sample 3
1e14
Abundance
Time (minutes)
Analyte 1
Analyte 2
Analyte 3
Analyte 4
Analyte 5
Analyte 6
Analyte 7
Analyte 8
Analyte 9
Analyte 10
Analyte 11
Analyte 12
Analyte 13
Analyte 14
Analyte 15
Analyte 16
Analyte 17
Analyte 18
Analyte 19
Analyte 20

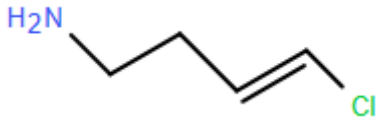
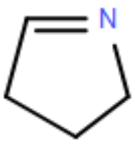
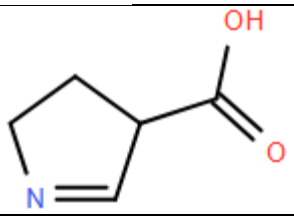
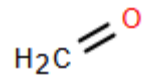
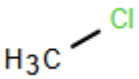
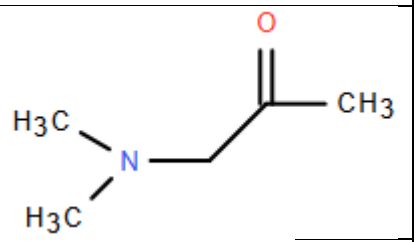
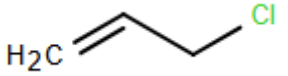
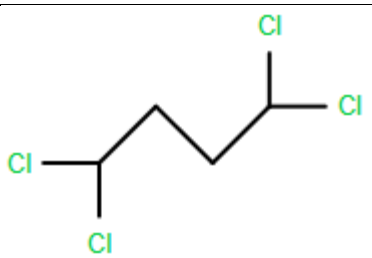
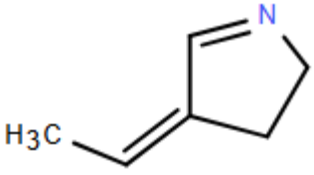

Sample 4
Sample 4
1e14
Abundance
Time (minutes)
Analyte 1
Analyte 2
Analyte 3
Analyte 4
Analyte 5
Analyte 6
Analyte 7
Analyte 8
Analyte 9
Analyte 10
Analyte 11
Analyte 12
Analyte 13
Analyte 14
Analyte 15
Analyte 16
Analyte 17
Analyte 18
Analyte 19
Analyte 20

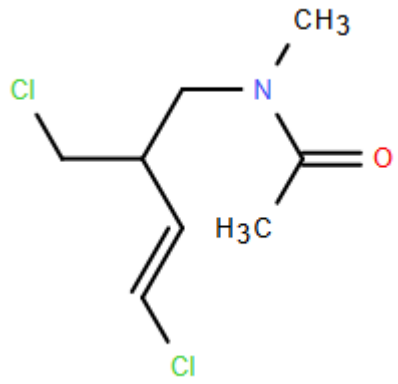
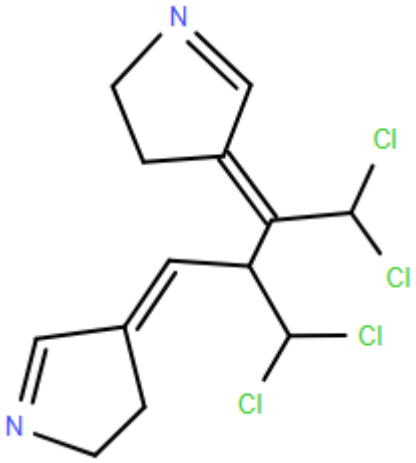
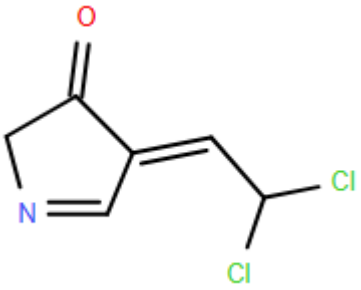
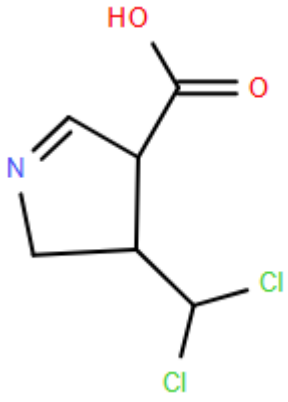

Sample 5
Sample 5
1e14
Abundance
Time (minutes)
Analyte 1
Analyte 2
Analyte 3
Analyte 4
Analyte 5
Analyte 6
Analyte 7
Analyte 8
Analyte 9
Analyte 10
Analyte 11
Analyte 12
Analyte 13
Analyte 14
Analyte 15
Analyte 16
Analyte 17
Analyte 18
Analyte 19
Analyte 20

4.


m/z
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
Relative Intensity
100
90
80
70
60
50
40
30
20
10
0

So now you have the especially important task of revealing what the compound that is causing all this commotion is. Use the mass spectrogram and the reference table to identify the fragments of the chemical to put it together. There was a clue left at the scene, which gives us 4 options. Which one is it?

m/z	Structure
121.46	
69.10	
113.06	
30.02	
50.48	
	
76.52	
84.91	
	
95.14	

	Liverpoolate
	Congressin
	NESTrovium
	BTSone

5.

You will find the name of your villain hidden in the images below:

-um

-ll
-a

ey=ia

6.

Want to know how to neutralise my mystery compound? Here's how:

This Cypher Text was found in the villain's secret laboratory:

A	P	G	C	R	J	Y	J	L	P	D	T	T	J	F	O	U	Y	A	I	R	B	X	G	D	C	C

Name: _

Message: _

Let's hope you can piece this together, but only if you know my name, can you solve this riddle. Line each letter of my surname with the letters in the cypher text above. Repeat my surname as many times as necessary to the same letter length as the cypher text. Then 1) Go to the column (in the deciphering grid below) of the corresponding letter of my name; 2) Go down that column till you find the corresponding letter of the Cypher Text; 3) The first letter of that row belongs to the secret message.

N	E	S	T	O	X	I	C	A	B	D	F	G	H	J	K	L	M	P	Q	R	U	V	W	Y	Z
E	S	T	O	X	I	C	A	B	D	F	G	H	J	K	L	M	P	Q	R	U	V	W	Y	Z	N
S	T	O	X	I	C	A	B	D	F	G	H	J	K	L	M	P	Q	R	U	V	W	Y	Z	N	E
T	O	X	I	C	A	B	D	F	G	H	J	K	L	M	P	Q	R	U	V	W	Y	Z	N	E	S
O	X	I	C	A	B	D	F	G	H	J	K	L	M	P	Q	R	U	V	W	Y	Z	N	E	S	T
X	I	C	A	B	D	F	G	H	J	K	L	M	P	Q	R	U	V	W	Y	Z	N	E	S	T	O
I	C	A	B	D	F	G	H	J	K	L	M	P	Q	R	U	V	W	Y	Z	N	E	S	T	O	X
C	A	B	D	F	G	H	J	K	L	M	P	Q	R	U	V	W	Y	Z	N	E	S	T	O	X	I
A	B	D	F	G	H	J	K	L	M	P	Q	R	U	V	W	Y	Z	N	E	S	T	O	X	I	C
B	D	F	G	H	J	K	L	M	P	Q	R	U	V	W	Y	Z	N	E	S	T	O	X	I	C	A
D	F	G	H	J	K	L	M	P	Q	R	U	V	W	Y	Z	N	E	S	T	O	X	I	C	A	B
F	G	H	J	K	L	M	P	Q	R	U	V	W	Y	Z	N	E	S	T	O	X	I	C	A	B	D
G	H	J	K	L	M	P	Q	R	U	V	W	Y	Z	N	E	S	T	O	X	I	C	A	B	D	F
H	J	K	L	M	P	Q	R	U	V	W	Y	Z	N	E	S	T	O	X	I	C	A	B	D	F	G
J	K	L	M	P	Q	R	U	V	W	Y	Z	N	E	S	T	O	X	I	C	A	B	D	F	G	H
K	L	M	P	Q	R	U	V	W	Y	Z	N	E	S	T	O	X	I	C	A	B	D	F	G	H	J
L	M	P	Q	R	U	V	W	Y	Z	N	E	S	T	O	X	I	C	A	B	D	F	G	H	J	K
M	P	Q	R	U	V	W	Y	Z	N	E	S	T	O	X	I	C	A	B	D	F	G	H	J	K	L
P	Q	R	U	V	W	Y	Z	N	E	S	T	O	X	I	C	A	B	D	F	G	H	J	K	L	M
Q	R	U	V	W	Y	Z	N	E	S	T	O	X	I	C	A	B	D	F	G	H	J	K	L	M	P
R	U	V	W	Y	Z	N	E	S	T	O	X	I	C	A	B	D	F	G	H	J	K	L	M	P	Q
U	V	W	Y	Z	N	E	S	T	O	X	I	C	A	B	D	F	G	H	J	K	L	M	P	Q	R
V	W	Y	Z	N	E	S	T	O	X	I	C	A	B	D	F	G	H	J	K	L	M	P	Q	R	U
W	Y	Z	N	E	S	T	O	X	I	C	A	B	D	F	G	H	J	K	L	M	P	Q	R	U	V
Y	Z	N	E	S	T	O	X	I	C	A	B	D	F	G	H	J	K	L	M	P	Q	R	U	V	X
Z	N	E	S	T	O	X	I	C	A	B	D	F	G	H	J	K	L	M	P	Q	R	U	V	X	Y

7.

What a ride!

We are finally almost there.

One last action remains: we need to formulate the neutralising agent. Fortunately, the Environmental Protection Office has the right recipe to help with this.

But what's that? The file is stored on an old machine and only returns the information in the form of light signals. It goes like this:

- .... . / ..-. --- ..- .-. / -. ..- -- -... . .-. ... / .. -. / - .... . /

.–. . –.–. .. .––. . / --. .. ...- . / -.-- --- ..- / - .... . / -.-. --- -.. . /

..-. --- .-. / - .... . / .-.. --- -.-. -.- /.-.-.- /

..- ... . / ....- / .--. .- .-. - ... / --- ..-. / - .... . /

-. . ..- - .-. .- .-.. .. .. -. --. / .- --. . -. - / .. -. / .---- /

.-.. .. - . .-. / .-- .- - . .-. /.-.-.- /

... .- -.- . / .-- .. .-.. -.. .-.. -.-- / ..-. --- .-. / - .... .-. . . /

-- .. -. ..- - . ... / .- -. -.. / .- .--. .--. .-.. -.-- / - --- /

-.-. --- -. - .- -- .. -. .- - . -.. / .-- .- - . .-. / ..-. --- .-. / .- - /

.-.. . .- ... - / ----. / .... --- ..- .-. ... /--..-- /

.--. .-. . ..-. . .-. .- -... .-.. -.-- / --- ...- . .-. / -. .. --. .... - /.-.-.-//

Morse code

Letters

a	.−	i	..	r	.−.
b	−...	j	.−−−	s	...
c	−.−.	k	−.−	t	−
d	−..	l	.−..	u	..−
e	.	m	−−	v	...−
é	..−..	n	−.	w	.−−
f	..−.	o	−−−	x	−..−
g	−−.	p	.−−.	y	−.−−
h	....	q	−−.−	z	−−..

Numbers

1	.−−−−	6	−....
2	..−−−	7	−−...
3	...−−	8	−−− ..
4	....−	9	−−−−.
5	.....	0	−−−−−

Punctuation

Full stop (period) [.] .−.−.−

Comma [,] −−..−−

JIGSAW TO CUT OUT – leave on last page and ensure not double-sided!