



Customer Focused. Planet Obsessed.

May 7, 2024

Luke LeMond
Site Manager
Solid Waste Program
State of Washington Dept. of Ecology
Central Regional Office
1250 West Alder St.
Union Gap, WA 98903-0009

Re: DTG Yakima – Agreed Order No. DE 21624 – Monthly Progress Letter – April

Dear Mr. LeMond:

In accordance with Section 7.3 of Agreed Order (AO) No. DE 21624, the following is a description of the actions taken during April 2024 to implement the requirements of this AO.

Activities:

On-site activities included weekly ambient and gas probe sampling. The once per month regulatory review meeting was also held on April 18, 2024 to assess conditions and the data. The data summary through April 2024 from Landfill Fire Control, Inc. (LFCI) is attached.

Ambient air sampling frequency was reduced to every other week on April 19, 2024.

Air sampling results from the sampling performed March 26-28, 2024 were received from the laboratory on April 18. Parametrix reviewed the data and responded to the laboratory. Final results are expected in May 2024.

Revisions to Limited Remedial Investigation (RI) Work Plan have been underway in accordance with the January 22, 2024 Ecology letter and the January 26, 2024 review meeting with Ecology. The due date for the Work Plan was extended to May 31, 2024.

Deviations from Plans (if any):

None.

Deviations Description from the Scope of Work and Schedule:

The due date for the Limited RI Work Plan was extended to May 31, 2024.



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All Data Received or Collected:

Ambient and gas probe data for gases and temperature were emailed, separately, to Ecology weekly after measurements were taken. Gas probe data was entered into the tracking spreadsheets and assessed by LFCl. The summary of the data has been included as an attachment.

Final air sampling data will be provided once received from the laboratory.

Deliverables for the Upcoming Month:

Deliverables will include:

- Final Air Sampling Work Plan results
- Weekly ambient and gas probe data
- Draft Limited RI Work Plan
- Groundwater well drilling will begin May 6, 2024

Please contact me to discuss any of the above items.

Respectfully,

A handwritten signature in blue ink, appearing to read "Ian Sutton".

Ian Sutton
Director of Engineering
DTG Recycle
isutton@dtgrecycle.com

Enclosures: Monthly Data Assessment Report DTG Yakima Landfill Fire Incident – April 2024

cc: mbrady@parametrix.com
steven.newchurch@co.yakima.wa.us



- Fire Safety Training
- Fire Safety Audits
- Fire Prevention and Response Plans
- Fire Extinguishment Strategies
- Fire Extinguishment Services
- Fire Monitoring
- Environmental Monitoring
- Forensic Investigations

May 6, 2024

LFCIPRJ-2023-001

Mr. Ian Sutton, Director of Engineering
DTG Recycle
P.O. Box 14302 Mill Creek, WA 98082

By email: isutton@dtgrecycle.com

Re: Monthly Data Assessment Report DTG Yakima Landfill Fire Incident – April 2024

Dear Mr. Sutton,

LFCI has prepared a monthly review and update of gas and temperature monitoring data that is being collected at the DTG Recycle Landfill Fire in Yakima, Washington. The update includes maps showing the spatial distribution of heat and CO within the monitoring area and presents the data collected, highlighting trends and interpreting the results.

Considering the available data, the oxygen suppression appears to be working, but the fire suppression response is slow on account of low biological activity within the landfill. Nevertheless, the highest observed temperatures at GP-3 continue to decline at a steady rate. Temperatures and CO concentrations at the bar hole punch locations continue to trend downward, with T-3 decreasing to readable levels for the past 3 weeks.

Plotting of the temperature and CO data in plan view clearly shows that the area affected by fire has markedly decreased over time. Based on the available data, LFCI believes that a small smolder continues to be active in close proximity to GP-3, and that the rate of combustion of the smolder is steadily decreasing.

Based on this, LFCI recommends that monitoring continue on a weekly basis until it can be shown that CO levels in all locations have decreased to below 200ppm. At that time, monitoring can be decreased for prevention purposes. We are also aware of air samples that are being processed in a laboratory to determine how much hydrogen interference is being recorded in the CO measurements. These results should be available in the next report.

We trust that this report provides the information you require, and should you need anything else please don't hesitate to contact the undersigned.

Sincerely,

LANDFILL FIRE CONTROL INC.

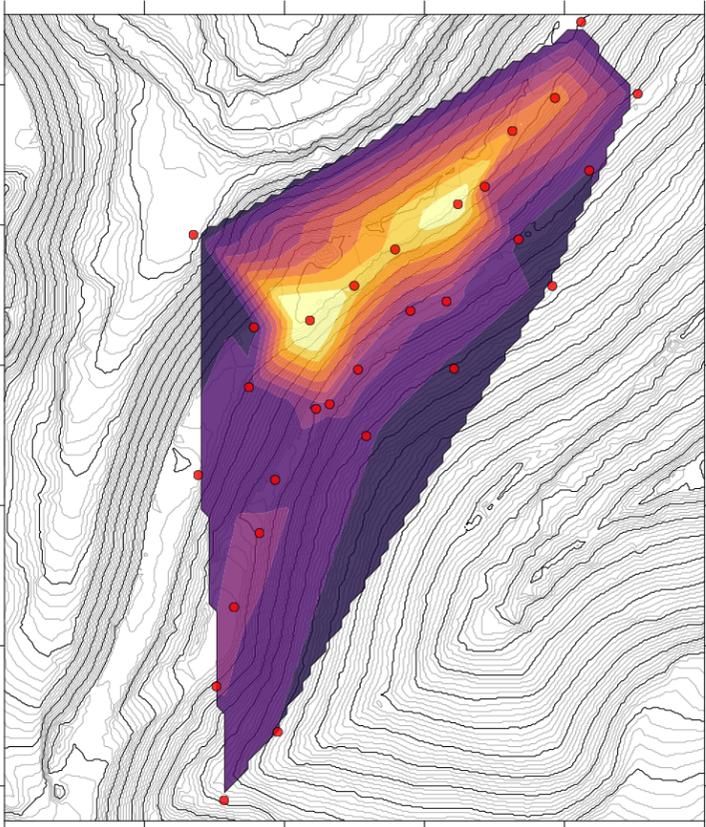
Dr. Tony Sperling, P.Eng.
President



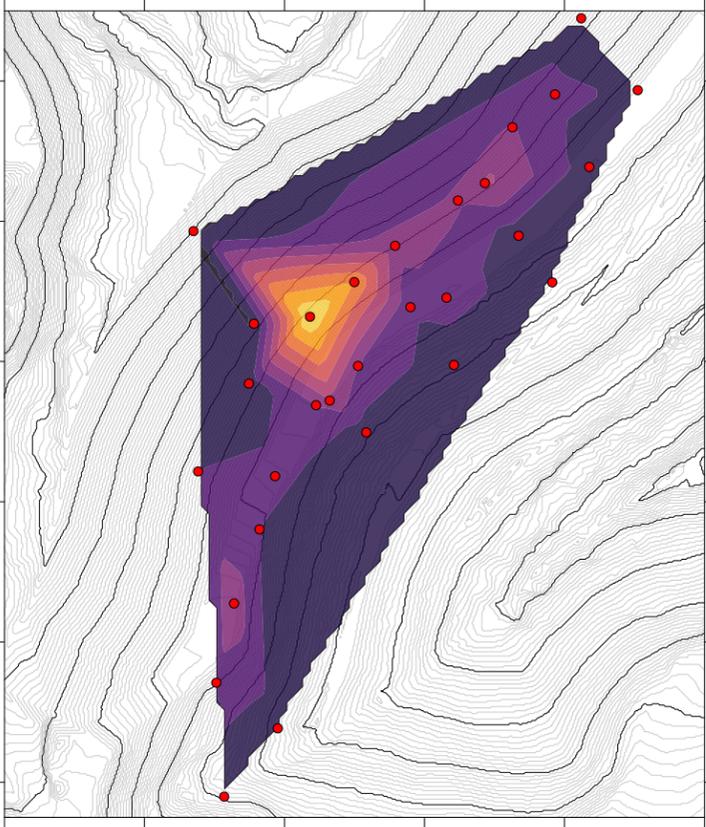
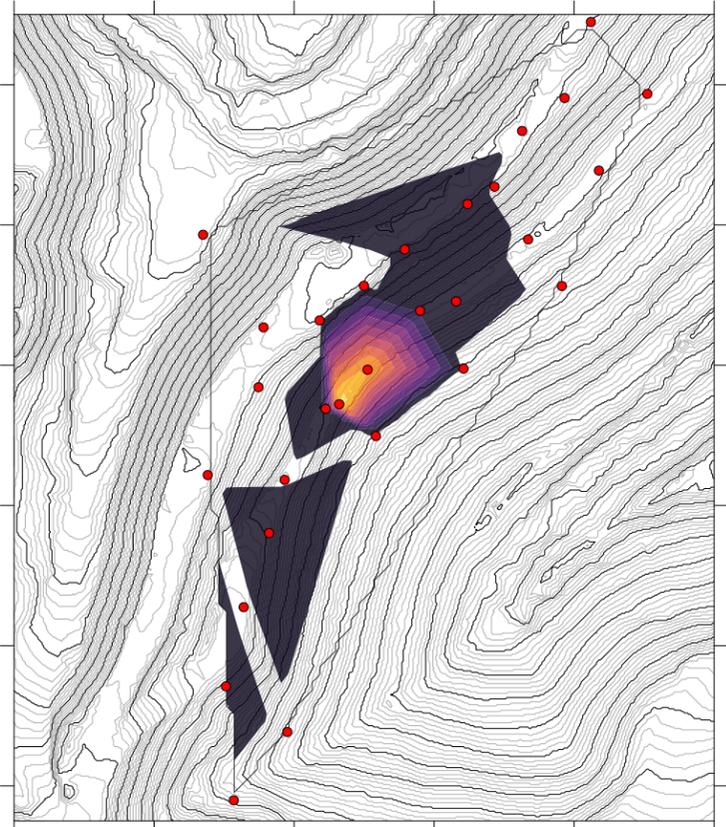
May 6th, 2024

LANDFILL FIRE CONTROL INC.

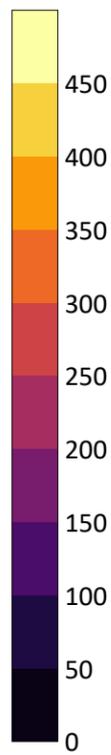
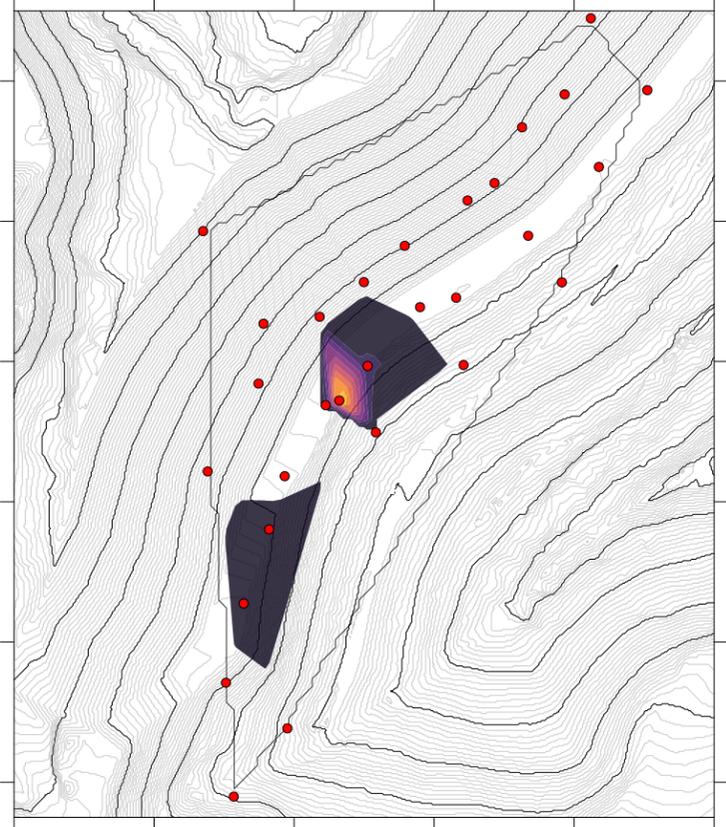
#8-1225 East Keith Rd., North Vancouver, BC – V7J 1J3
P: (604)-986-7723 E: sperling@sperlinghansen.com
www.landfillfire.com



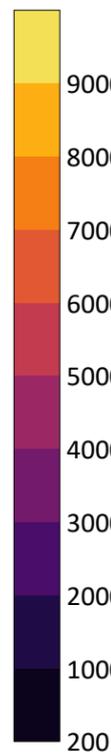
October 6, 2023
Before Cover Fill is Placed



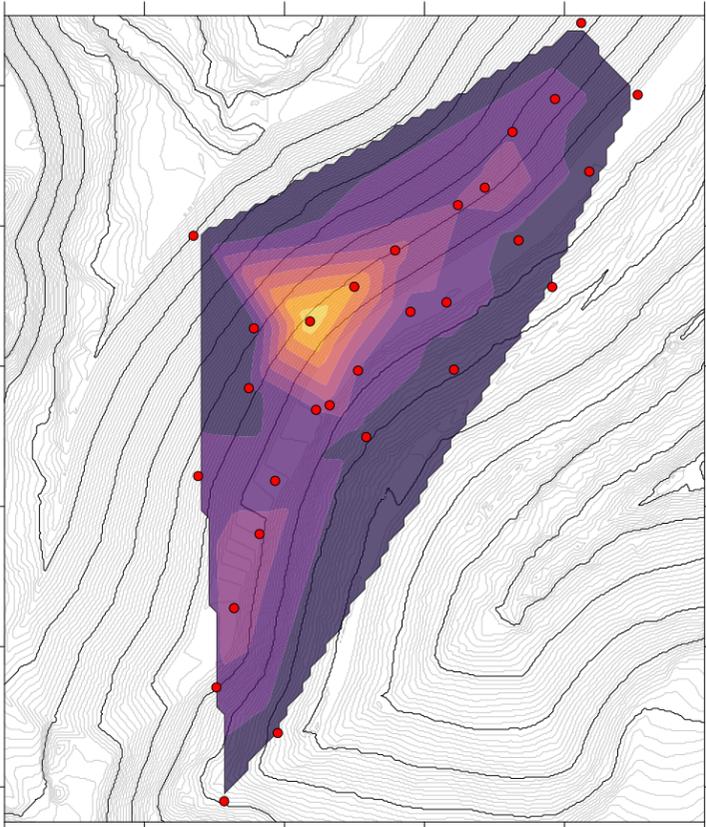
April 5, 2024
Last Event From March Update



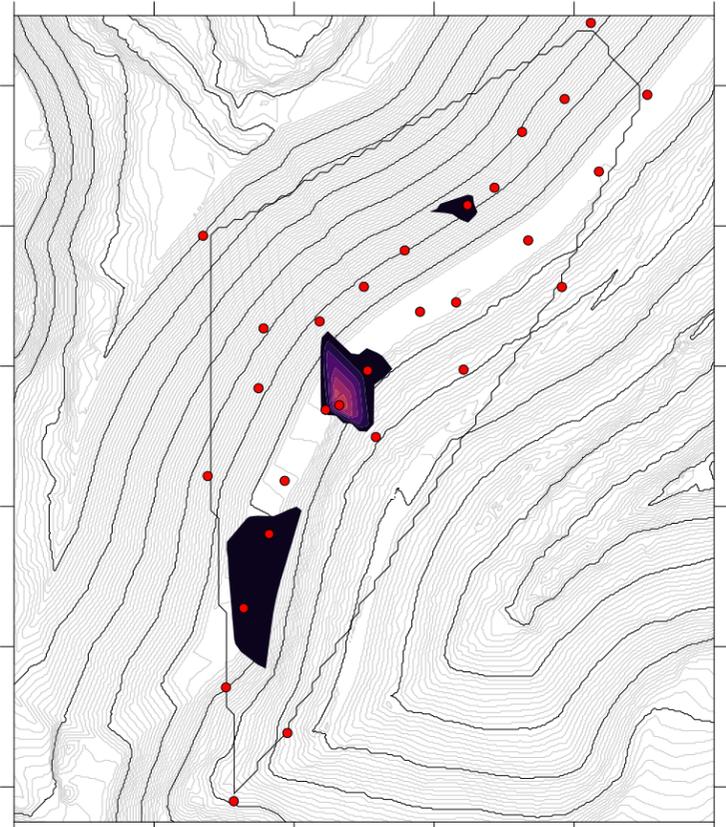
Temperature
Degrees F



CO
ppm



April 26, 2024
Last Monitoring Event



BARRO AUSTRALIA LANDFILL FIRE

**QUARTERLY MONITORING
SPATIAL MAPS**

DRAWING NO.	REV	SHEET
LFCI-2023-001-2	1	1



No.	DATE yr/m/day	REVISIONS	DRAWN	CHK'D	APP'D
1	2024/04/30	ISSUED FOR REVIEW	MD	TS	TS

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DRAWN BY: M. DOORBOS

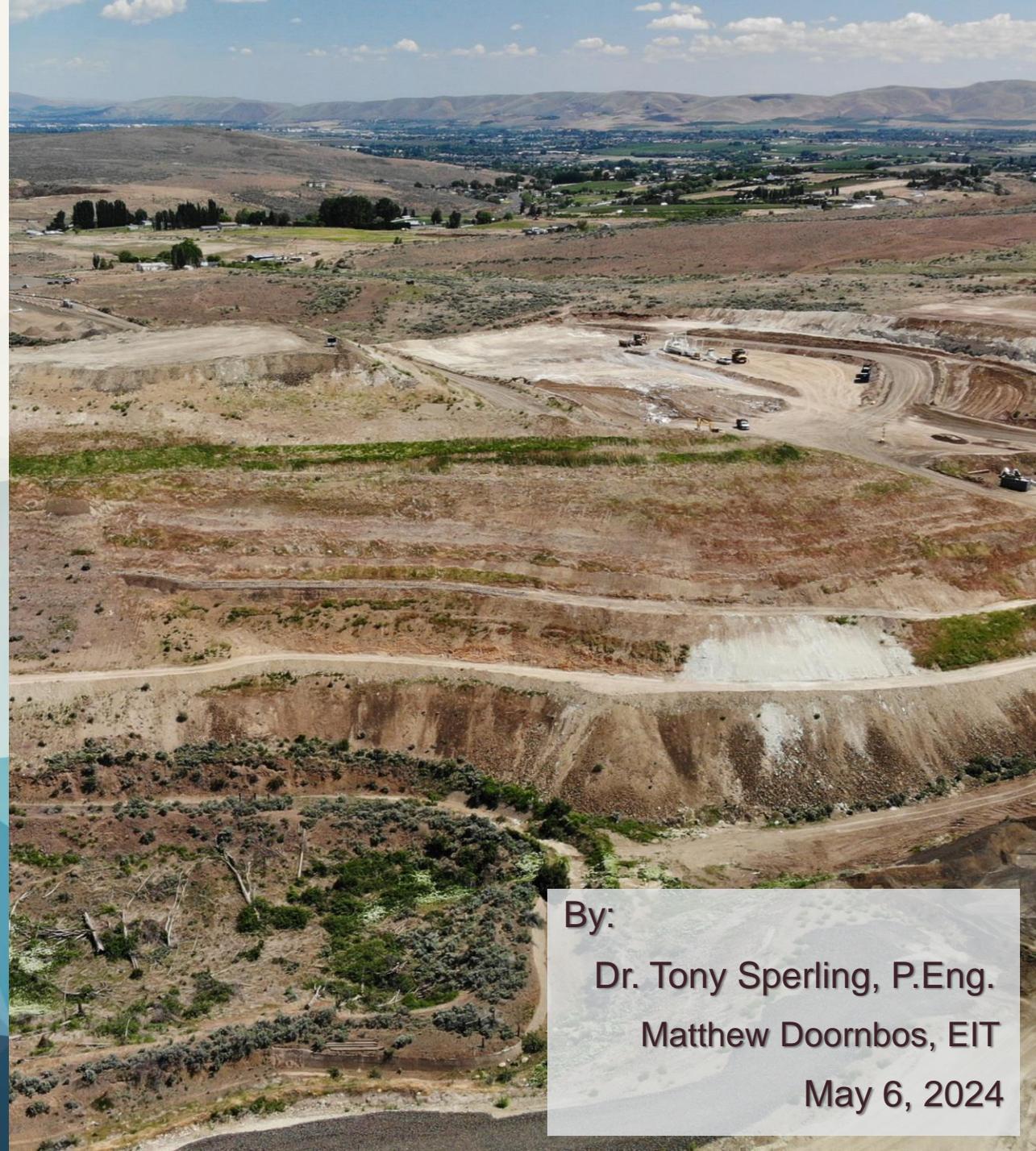
DATE CREATED: 2024/04/30

SHA PROJECT # LFCI-2023-001



DTG LPL LANDFILL FIRE INVESTIGATIONS AND MITIGATION

Monthly Monitoring Data Review



By:

Dr. Tony Sperling, P.Eng.

Matthew Doornbos, EIT

May 6, 2024

Agenda

Monitoring Data Review

CO, Temp, O₂, VOC, H₂S, LEL, CH₄

Thermistor Temperature Data

Overall Interpretation

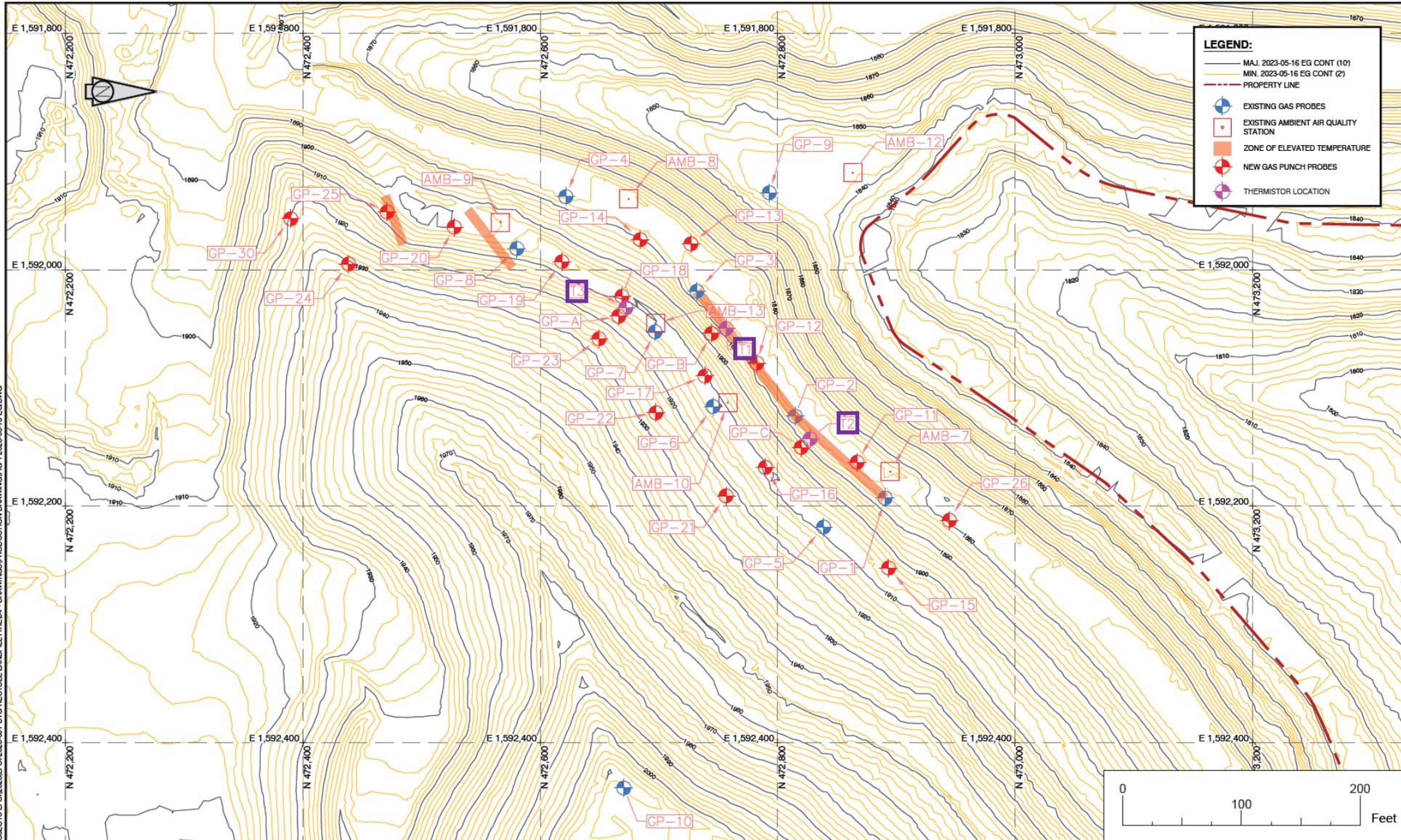




- Existing GPs
- New GPs

GP-15
5
GP-16
6
GP-21
GP-22
GP-23
GP-17
7
GP-18
GP-19
8
GP-20
GP-24
GP-25
1
GP-11
2
T2
GP-12
T1
3
GP-13
GP-14
4

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**SPERLING
 HANSEN
 ASSOCIATES**

Landfill Services Group
 • Landfill Siting
 • Design & Operations Plans
 • Landfill Closure
 • Environmental Monitoring

#8 - 1225 Keith Road East
 North Vancouver, B.C. V7J 1J3
 Phone: (604) 966-7723

NO.	DATE	REVISIONS	DRAWN	CHKD	APPD

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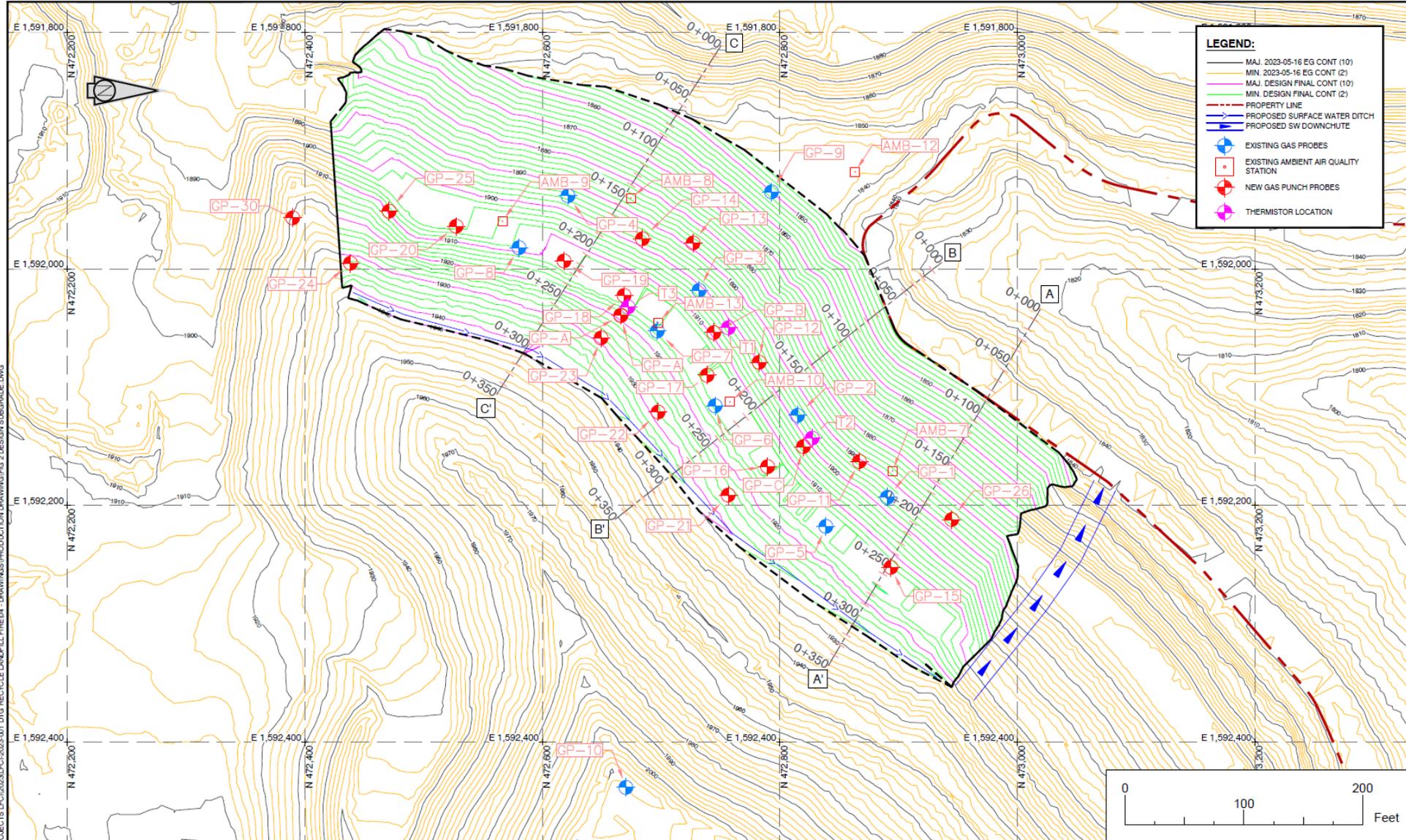
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DRAWN BY: A.TSANG	DATE CREATED: 5/16/2023
CHECKED BY: T.SPERLING	HORIZONTAL SCALE: 1" = 70'
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DTG RECYCLE LANDFILL FILL		
EXISTING TOPOGRAPHY 2023-05-16		
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2023-001-001	--	001

ADJUST SCALE 50% FOR 34"x22" SHEET

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DRAWN BY: A.TSANG
CHECKED BY: T.SPERLING
APPROVED BY: --

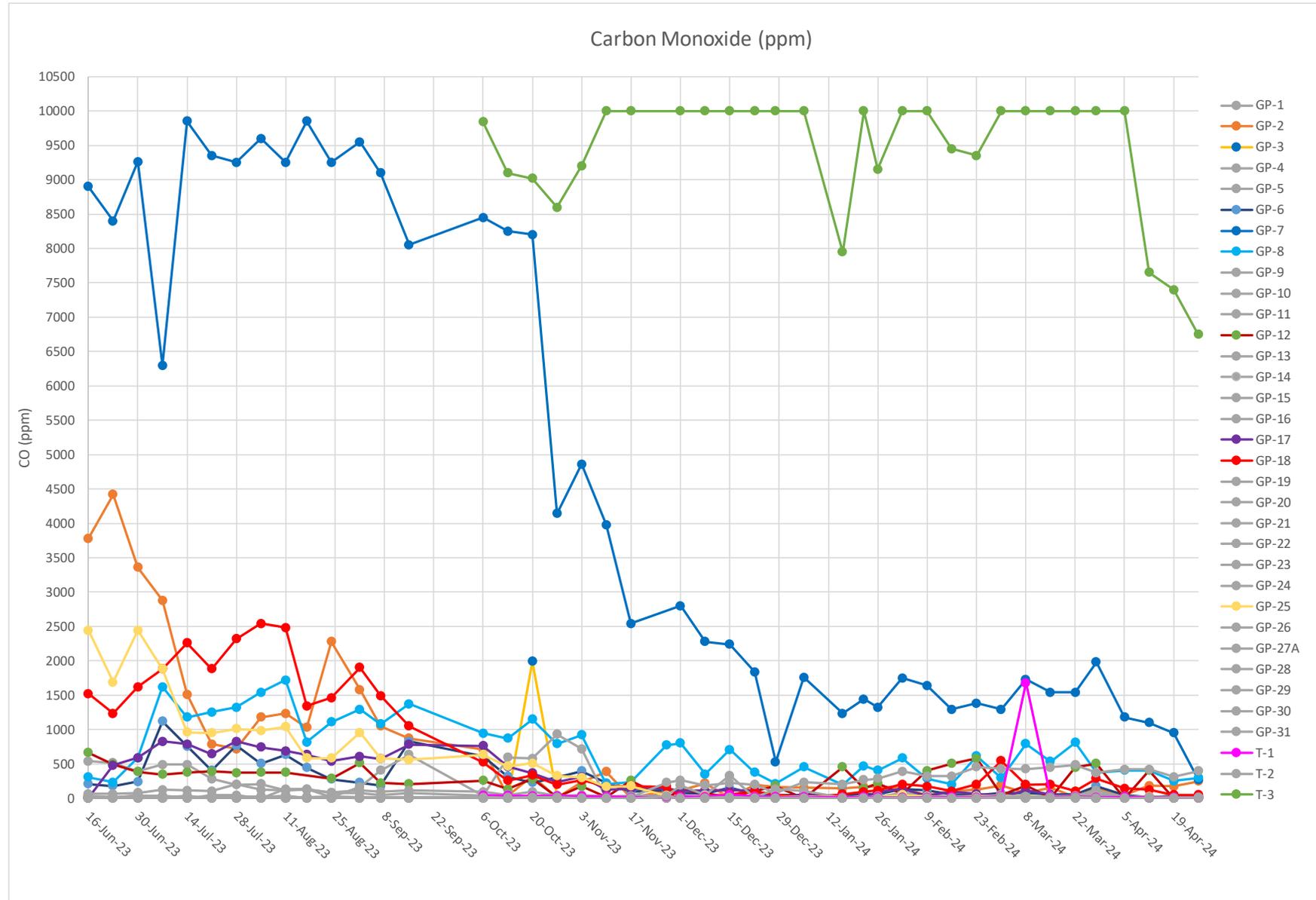
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VERTICAL SCALE:	1" = 75'	2023-001-003	--
ADJUST SCALE 50% FOR 34"x22" SHEET		SHEET	003

SEAL

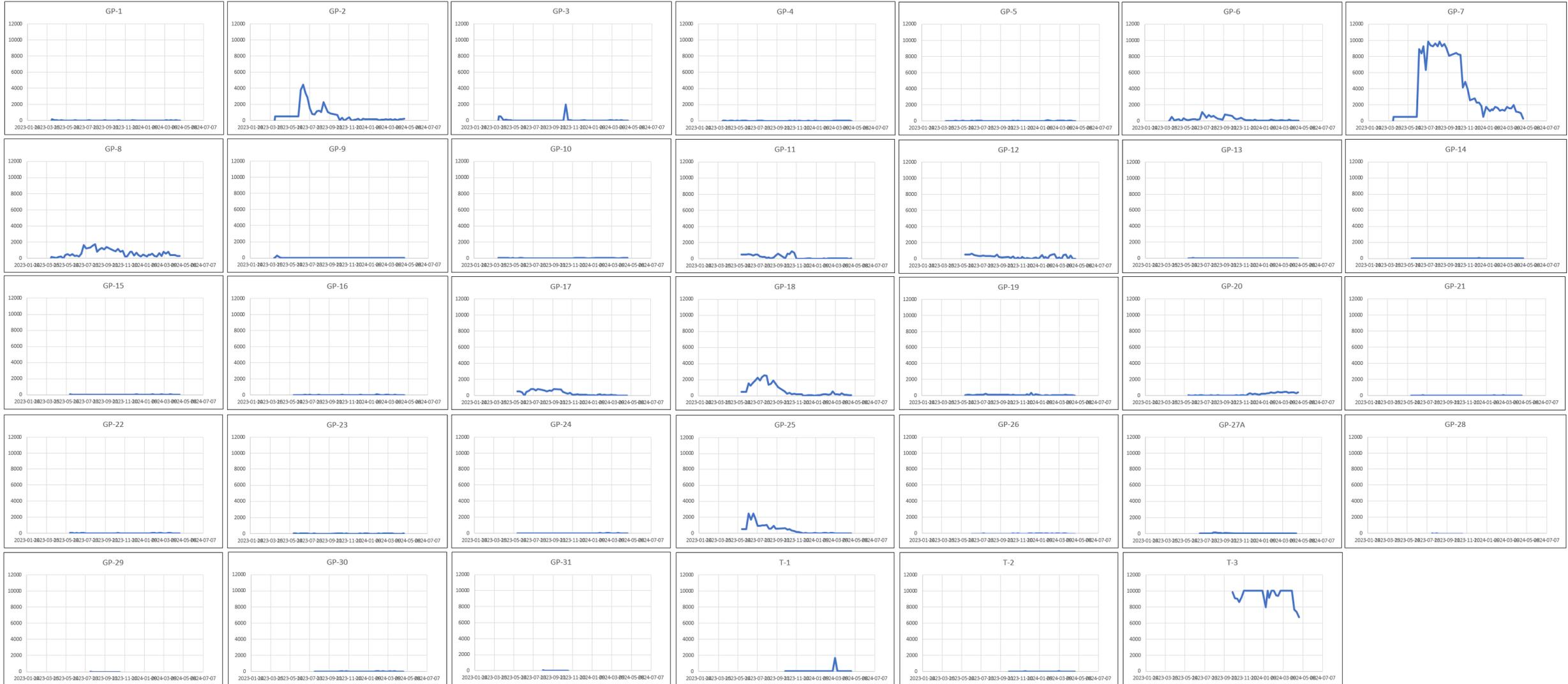
Carbon Monoxide

T-3 has decreased significantly over the last month.

GP-7 has also decreased significantly, to under 500ppm.



CO Levels by Individual Wells

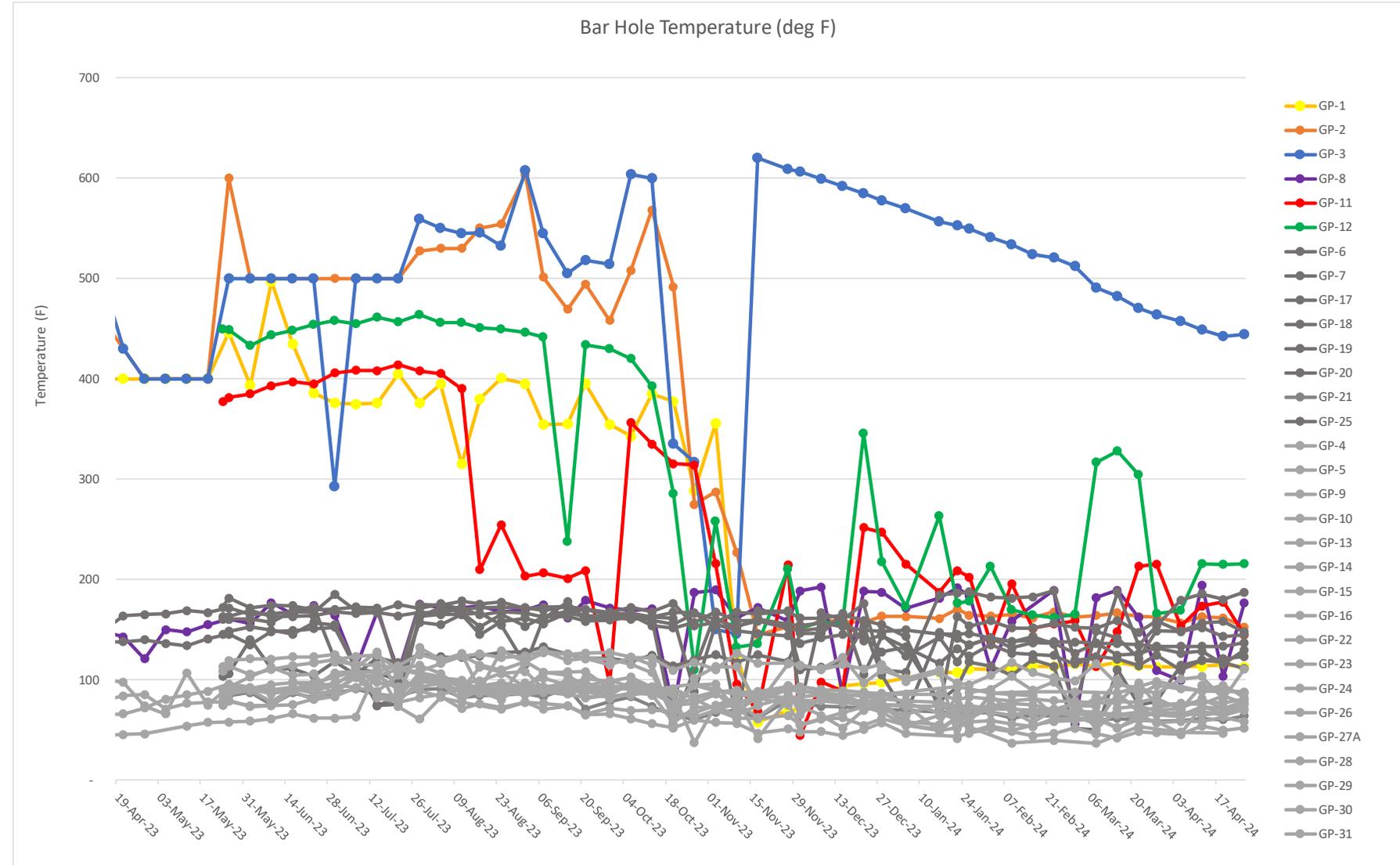


Temperature (F)

Temperature has continued to decrease in GP-3, with a slight uptick in last weeks monitoring event.

This matches with higher temperatures in T-1 at 30' below ground, currently around 350F.

All other wells have remained low, with some variability possibly caused by atmospheric pressure swings.

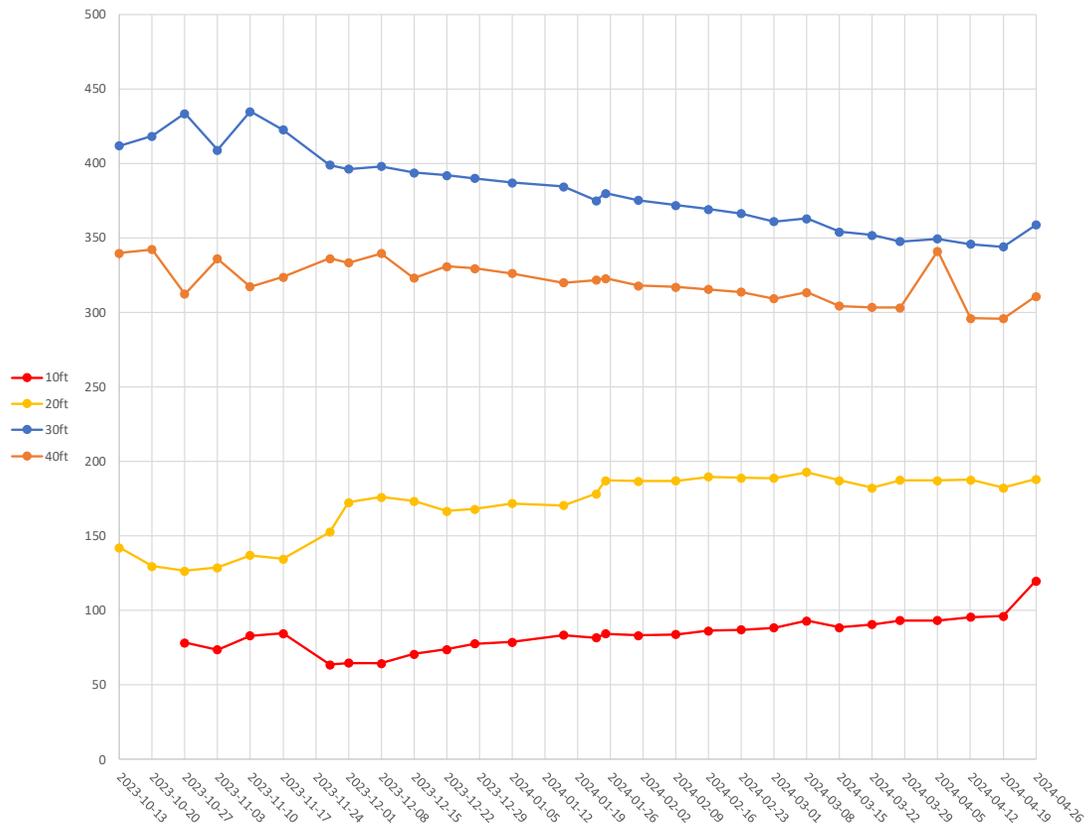


Thermistor Temperatures

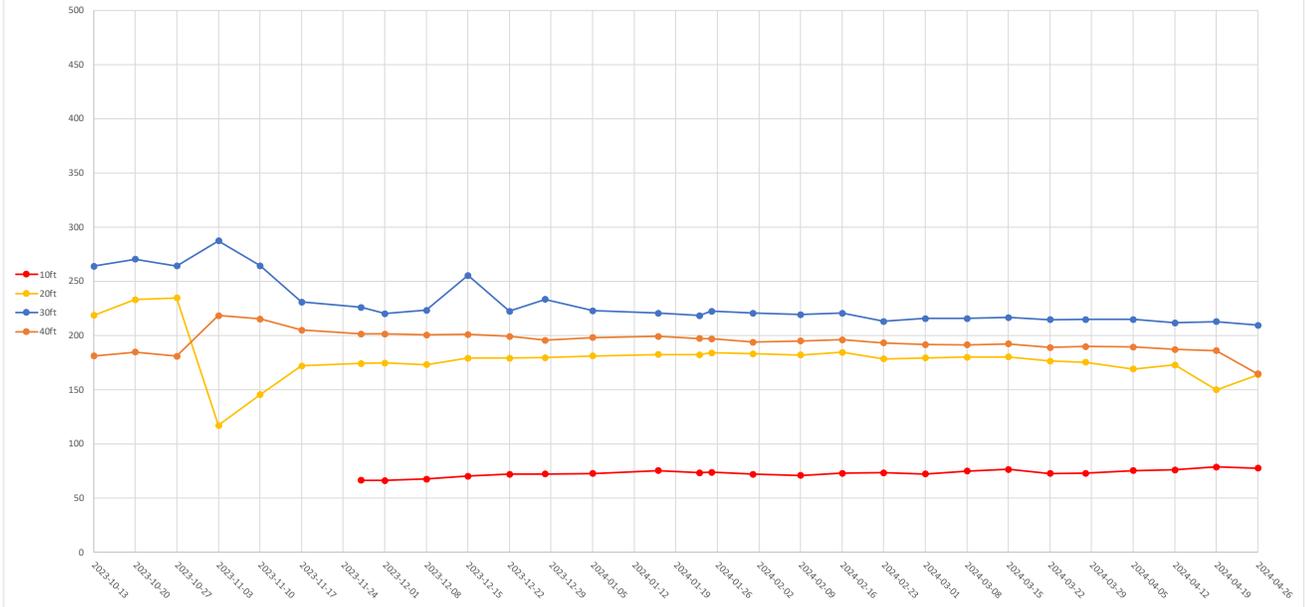
Thermistor temperatures mostly stable. Slight uptick in temperatures in T-1 this week, but overall stable/decreasing trend continues.

Will keep a close eye on T-1 to ensure no major changes.

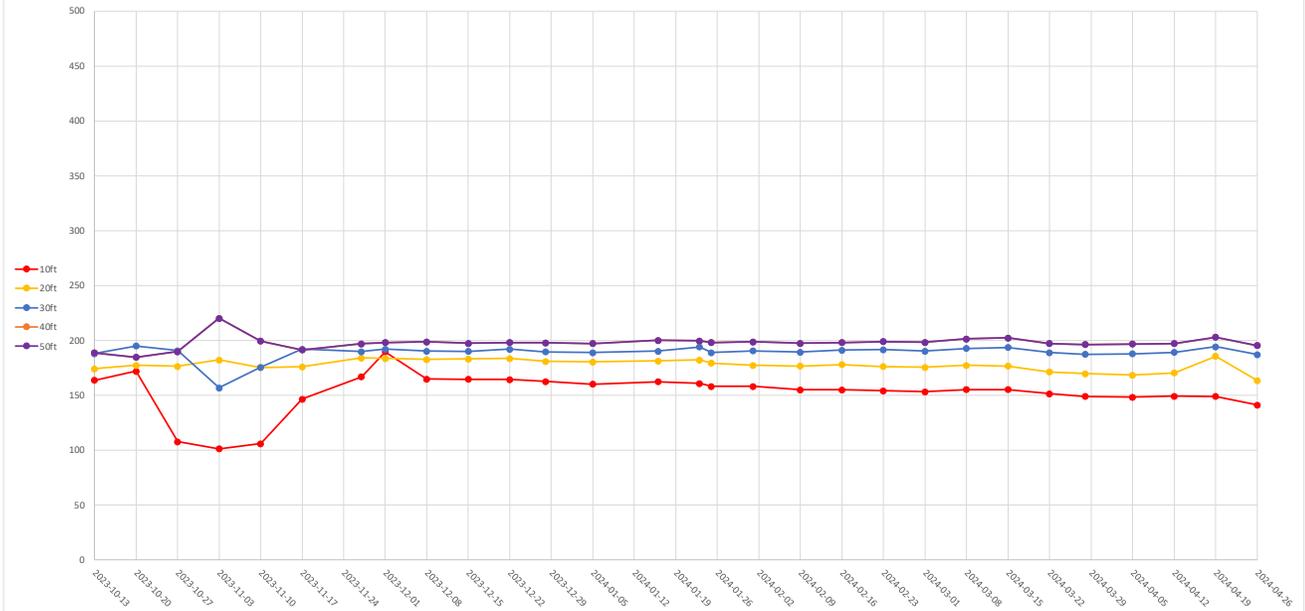
Thermistor 1



Thermistor 2



Thermistor 3

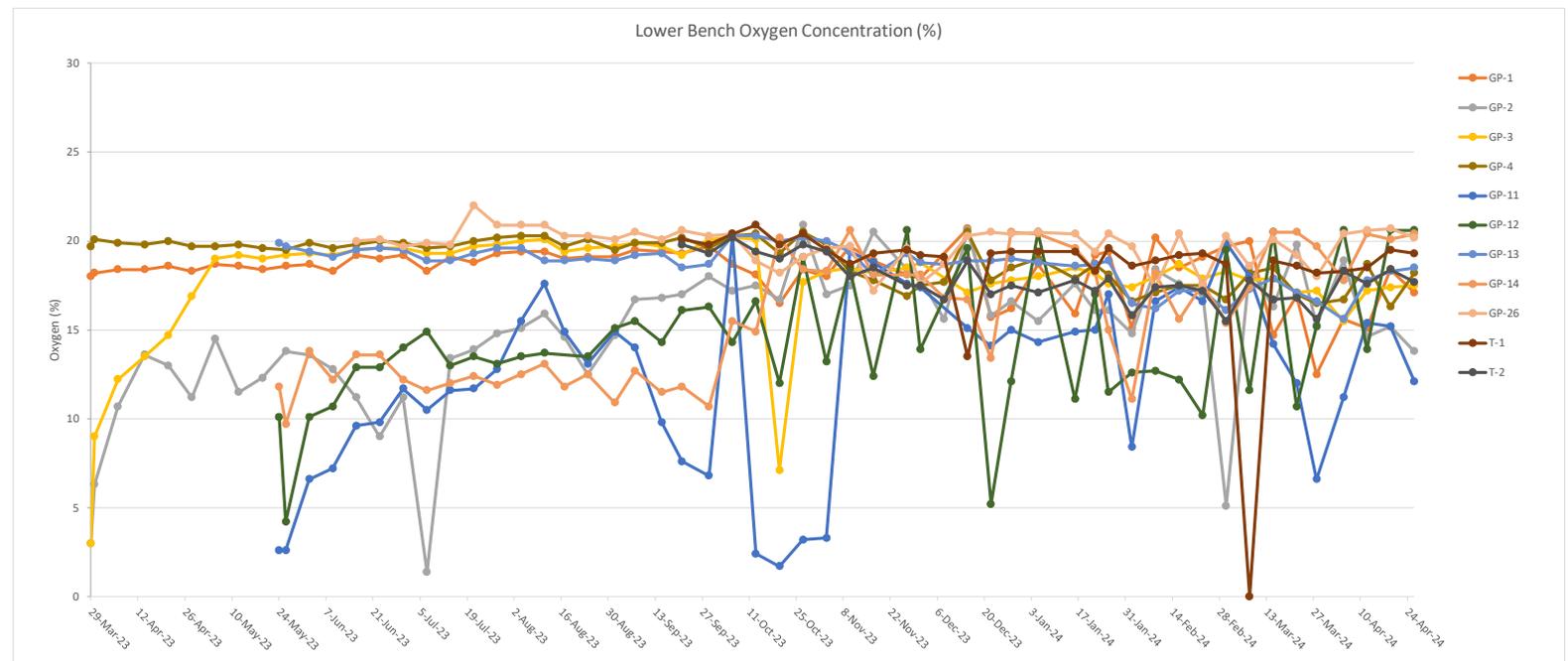
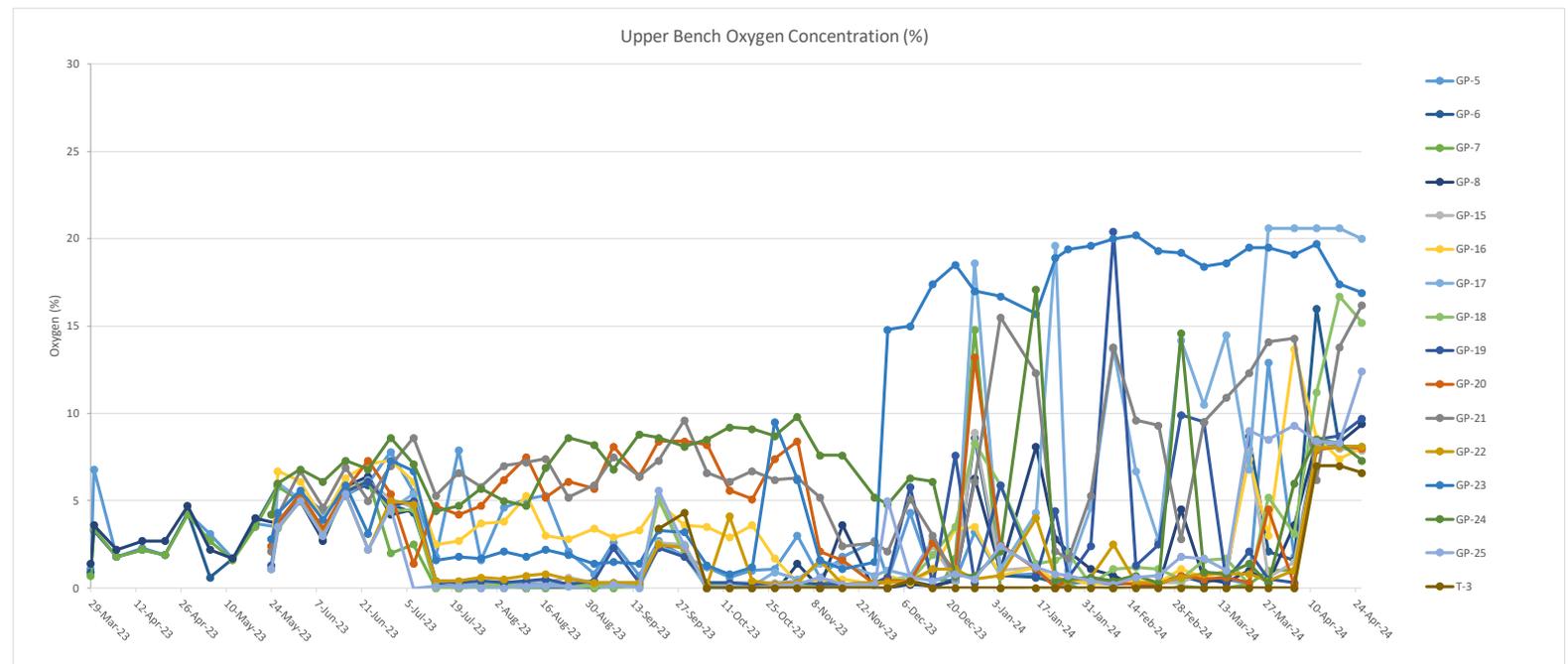




Both areas of landfill (upper and lower bench) are reading high oxygen in past two weeks. This may be due to the fire not consuming any more of the oxygen.

Oldest portion of Landfill is probably relatively inert and biologically inactive, producing very little methane. As a result, pore space is full of atmospheric air.

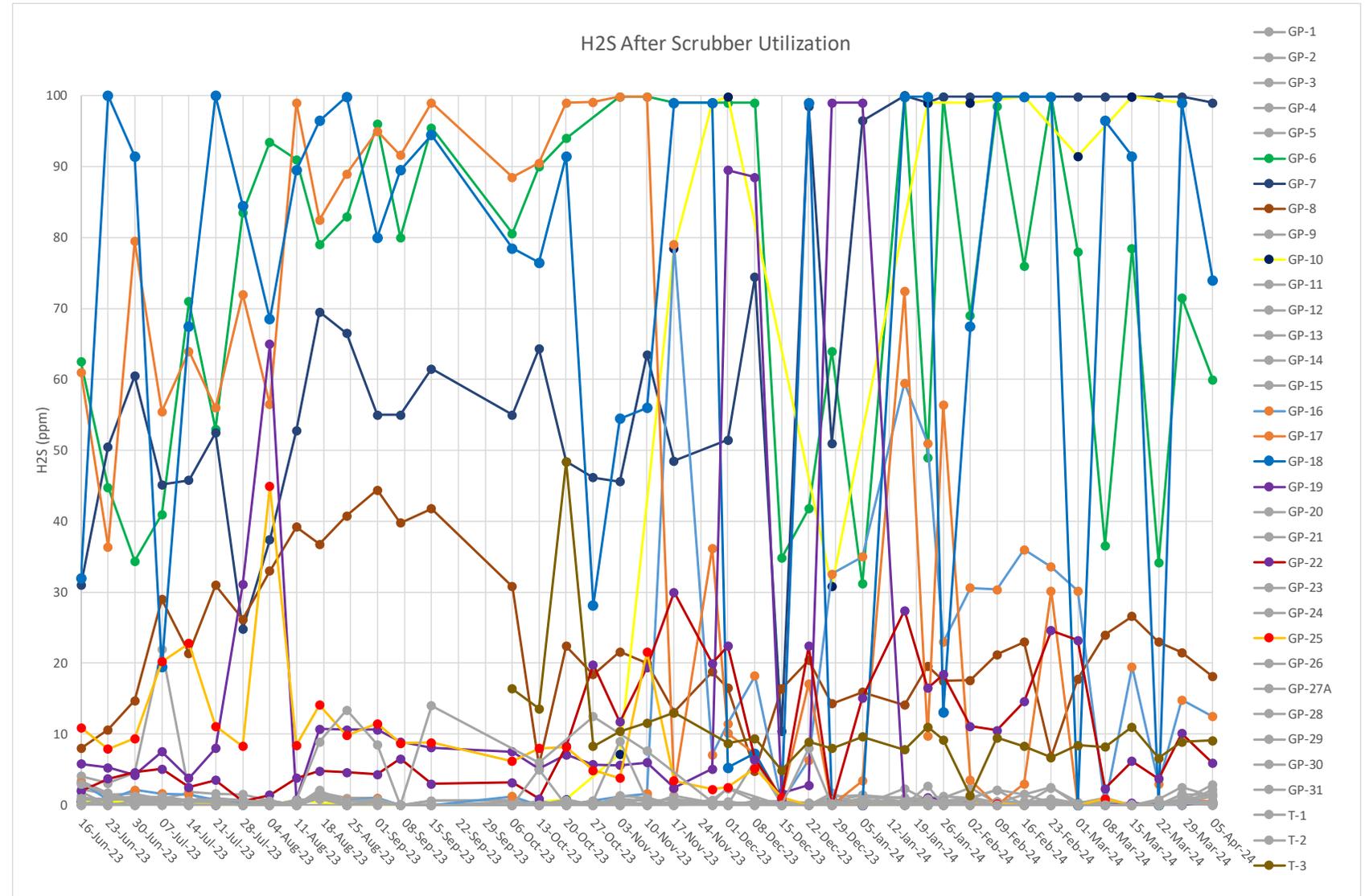
Some GPs likely susceptible to swings in pressure – LFCI believes this is causing the spikes.



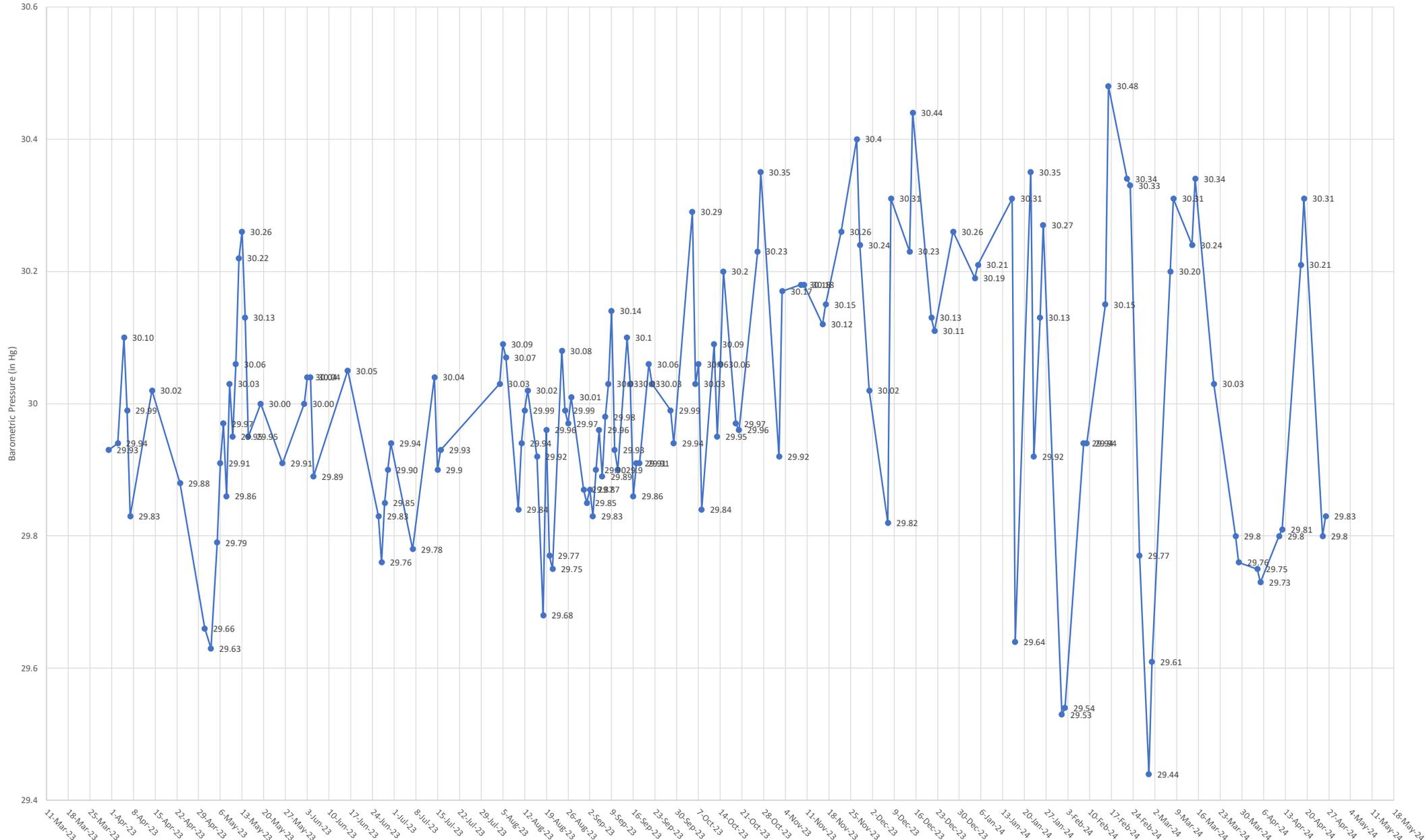
H₂S

H₂S data continues to be noisy, likely affected by atmospheric pressure fluctuation.

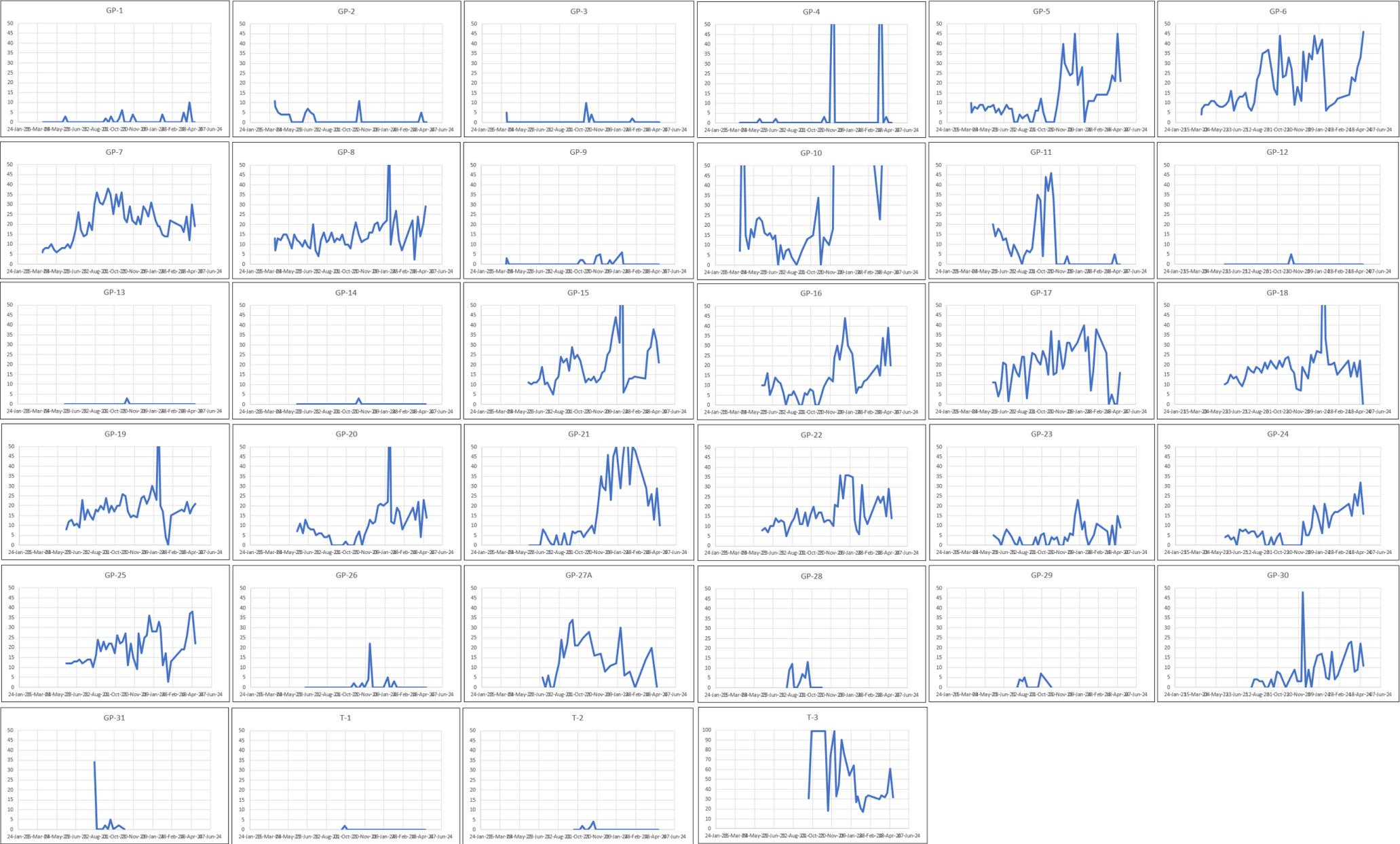
Of note, GP-7 has remained high for past few months, and T-3 has remained stable around 10ppm.



Barometric Pressure



LEL for individual GP

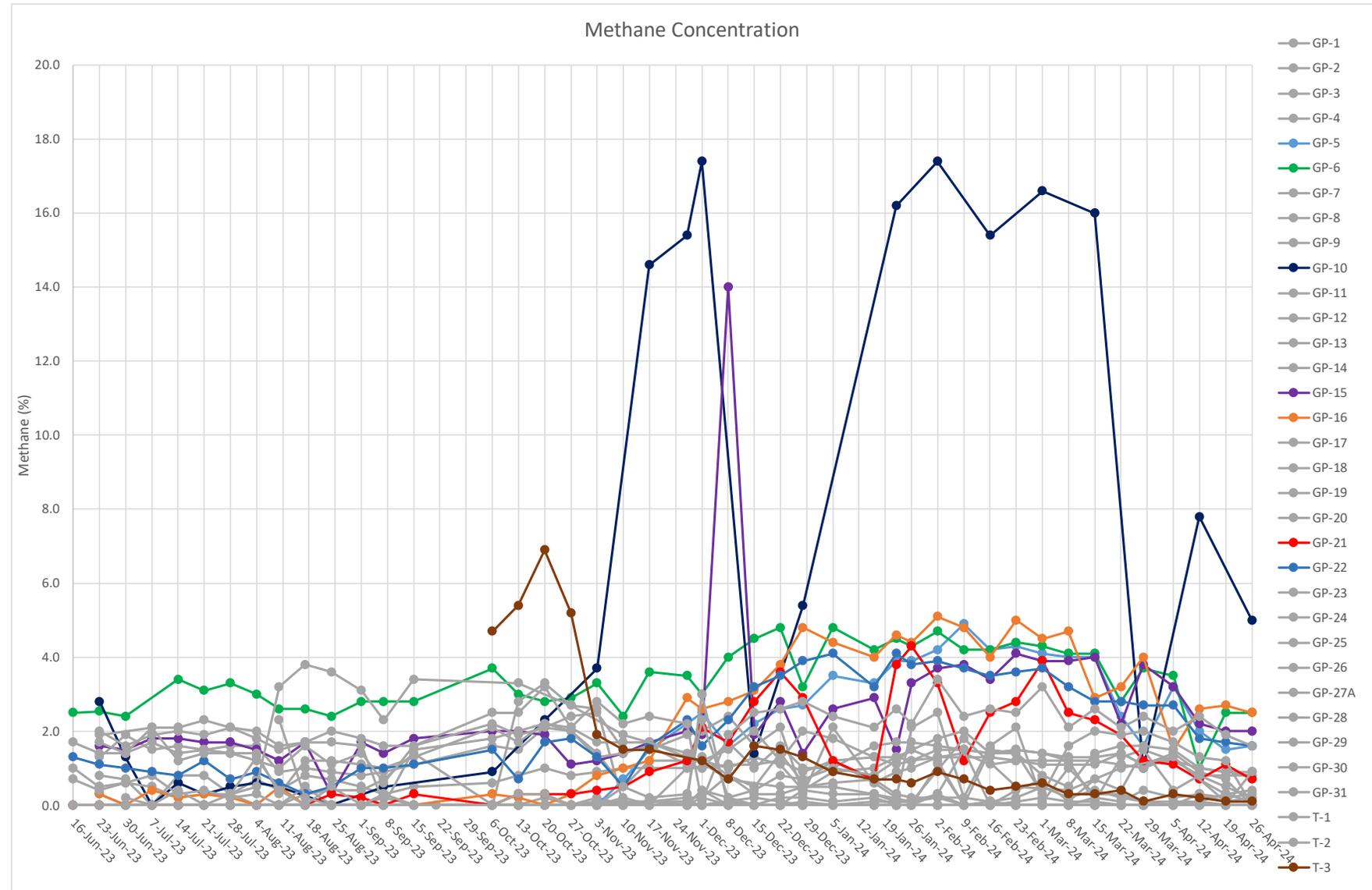


CH₄ (%)

GP-10 has dropped significantly since last month.

South upper bench area slightly elevated, at around 2-4%.

Methane has increased slightly, then decreased since early March as a result of very large atmospheric pressure swings. Now CH₄ is down below 3% in all wells except GP-10.





● High Temp

□ High CO

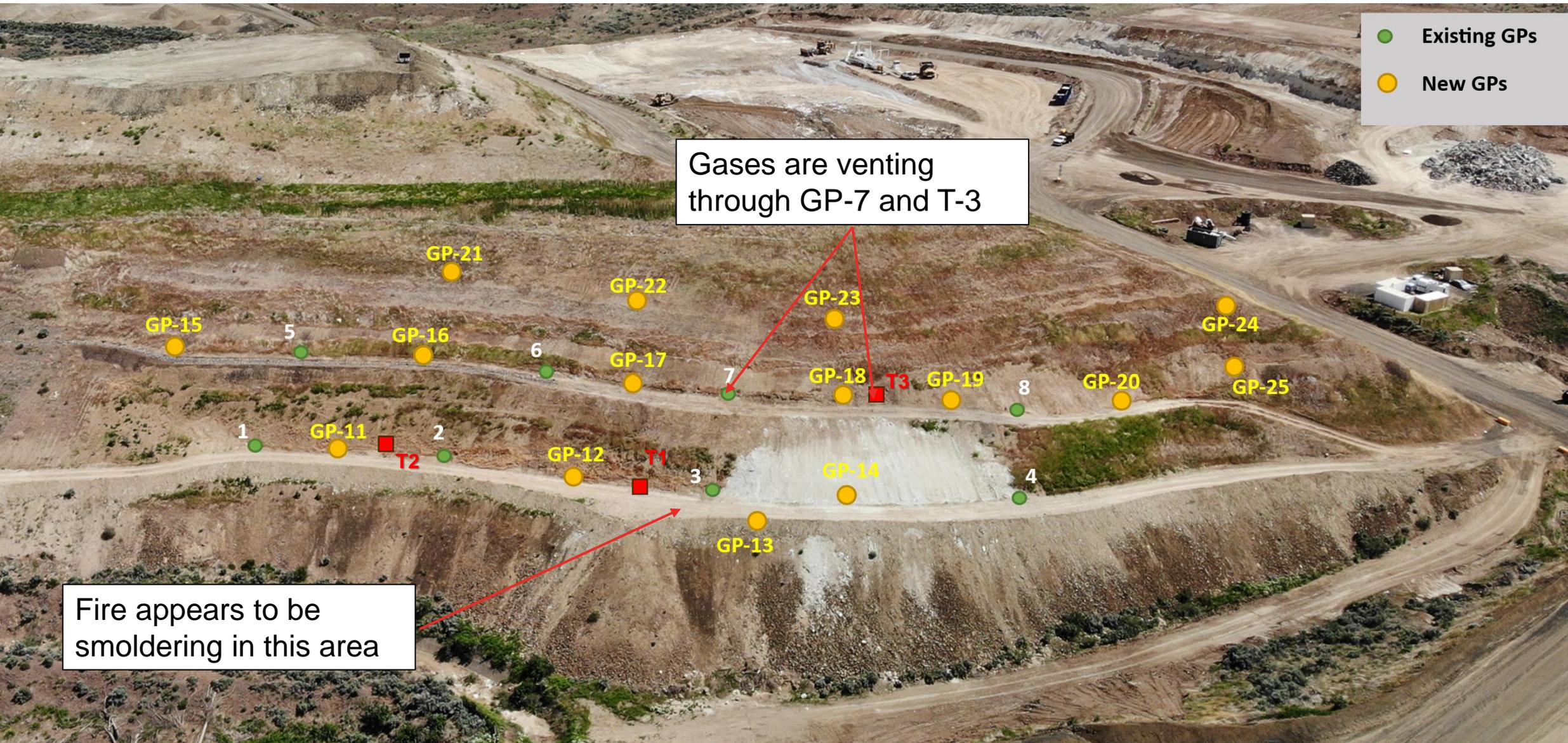
▲ High H2S

▼ High VOC

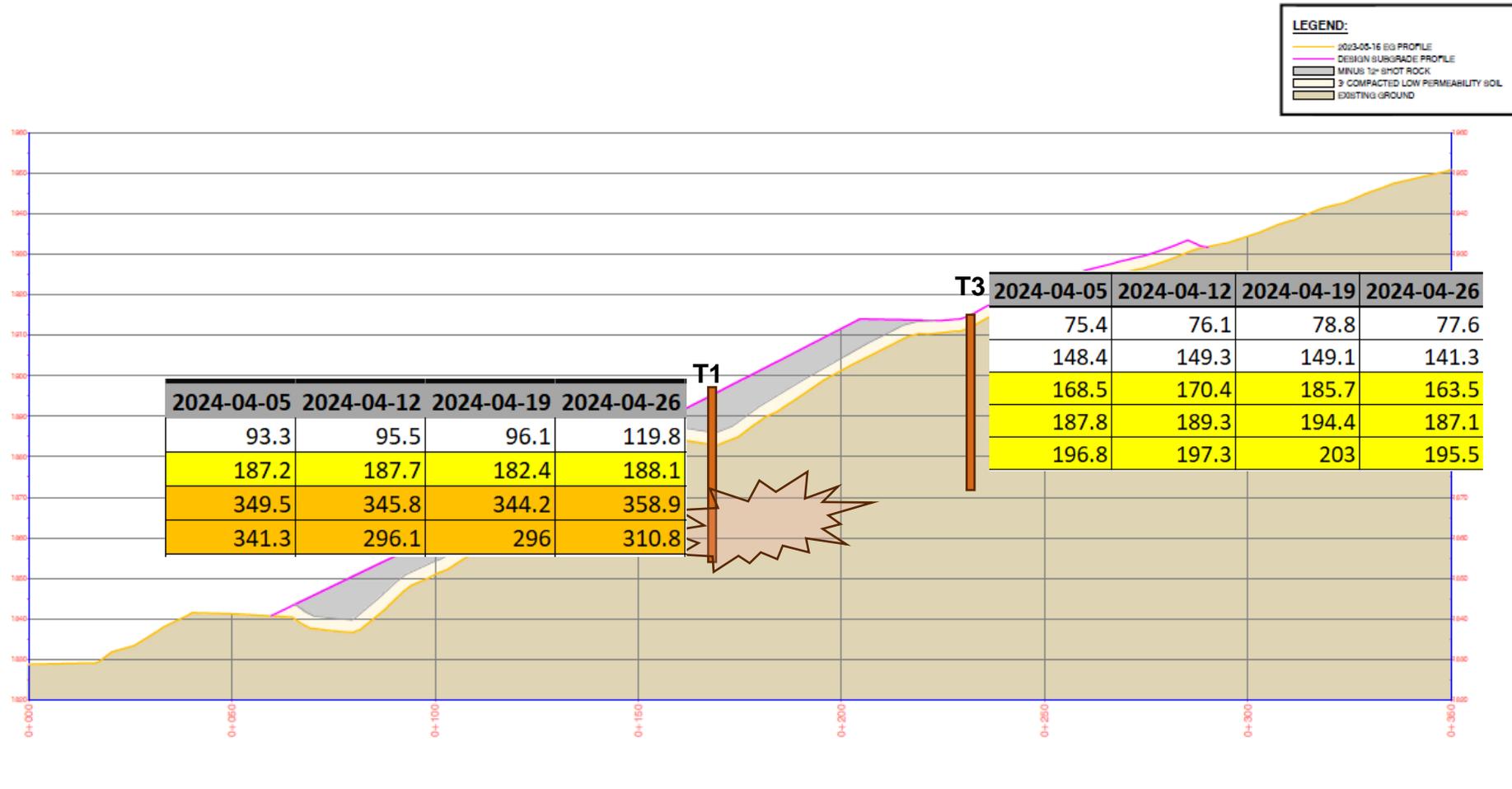
● Existing GPs
● New GPs



Fire Path



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	2024-04-05	2024-04-12	2024-04-19	2024-04-26
	93.3	95.5	96.1	119.8
	187.2	187.7	182.4	188.1
	349.5	345.8	344.2	358.9
	341.3	296.1	296	310.8

	2024-04-05	2024-04-12	2024-04-19	2024-04-26
	75.4	76.1	78.8	77.6
	148.4	149.3	149.1	141.3
	168.5	170.4	185.7	163.5
	187.8	189.3	194.4	187.1
	196.8	197.3	203	195.5

SECTION B - B'
 H - 1" = 25'
 V - 1" = 25'

<p> SPEARLING HANSEN ASSOCIATES Landfill Services Group • Landfill Design • Design & Operations Plans • Landfill Closure • Environmental Monitoring #8 - 1225 Keith Road East North Vancouver, B.C. V7J 1J5 Phone: (604) 960-7729 </p>	SEAL	<table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>REVISIONS</th> <th>DRAWN</th> <th>CHECK</th> <th>APPD</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	NO.	DATE	REVISIONS	DRAWN	CHECK	APPD																																											<p>REUSE OF DOCUMENTS</p> <p>This drawing is of a confidential nature and shall not be reproduced in any manner nor used for any purpose whatsoever except by written permission of Sperling Hansen Associates.</p> <p>This drawing is not approved for construction unless it bears a signed and sealed engineers stamp, effixed on or after the date of the last revision.</p>	CLIENT:	<table border="1"> <tr> <td>DESIGN BY:</td> <td>T.SPEARLING</td> <td>SHA PROJECT #</td> <td>2023-001</td> </tr> <tr> <td>DRAWN BY:</td> <td>A.TSANG</td> <td>DATE CREATED:</td> <td>5/16/2023</td> </tr> <tr> <td>CHECKED BY:</td> <td>T.SPEARLING</td> <td>HORIZONTAL SCALE:</td> <td>1" = 25'</td> </tr> <tr> <td>APPROVED BY:</td> <td>-</td> <td>VERTICAL SCALE:</td> <td>1" = 25'</td> </tr> </table>	DESIGN BY:	T.SPEARLING	SHA PROJECT #	2023-001	DRAWN BY:	A.TSANG	DATE CREATED:	5/16/2023	CHECKED BY:	T.SPEARLING	HORIZONTAL SCALE:	1" = 25'	APPROVED BY:	-	VERTICAL SCALE:	1" = 25'	<table border="1"> <tr> <td colspan="3">DTG RECYCLE LANDFILL FILE</td> </tr> <tr> <td colspan="3" style="text-align: center;">SECTION B-B'</td> </tr> <tr> <td>DRAWING NO.</td> <td>REV</td> <td>SHEET</td> </tr> <tr> <td>2023-001-005</td> <td>-</td> <td>005</td> </tr> </table>	DTG RECYCLE LANDFILL FILE			SECTION B-B'			DRAWING NO.	REV	SHEET	2023-001-005	-	005
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Data Interpretation

Suppression efforts are working. CO levels and temperatures have decreased dramatically since cover fill was placed.

Slight uptick in temperatures in T-1 and GP-3 this week.

In LFCI experience, CO has been best indicator of suppression at other landfill sites. CO levels in GP-7 and T-3 have dropped significantly in past month.

High O₂ below lower bench road continues, has expanded to extent of monitoring - this is likely due to large atmospheric pressure swings and pervious waste mass allowing entry of ambient air.

Temperature has dropped significantly all around, especially in GP-3.

Overall, it appears that the waste is smoldering underneath GP-3 and T-1 (elevated temperature) and a 'chimney' effect is occurring, causing higher CO and VOC's in T-3 and GP-7.