

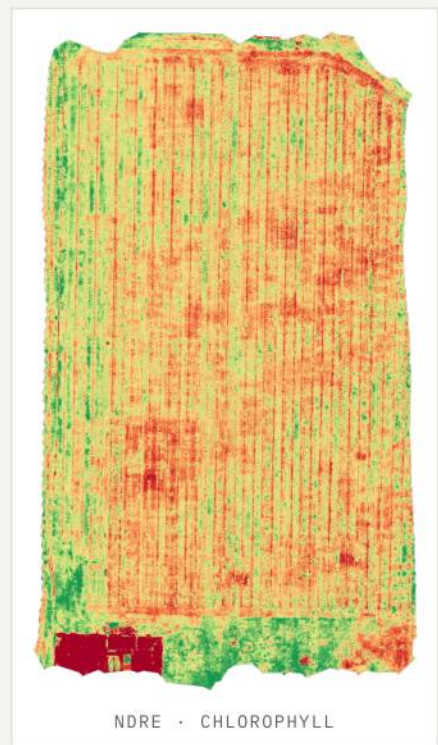
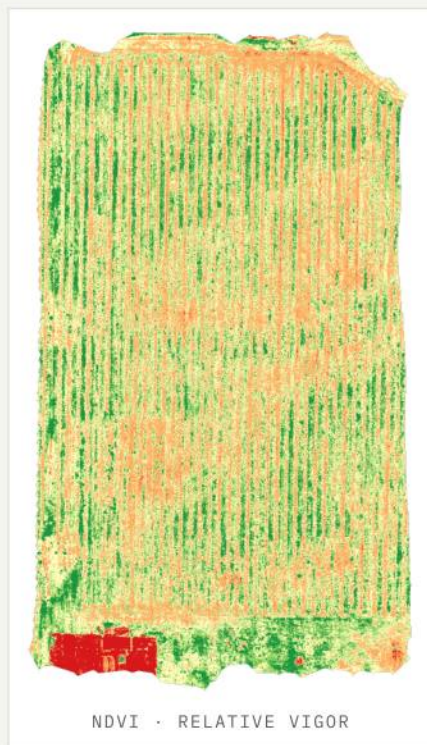
MULTISPECTRAL CROP INTELLIGENCE · RELATIVE-VIGOR REPORT

Blair Vineyard Relative-Vigor Report

Five-index vegetation analysis of a vineyard block in the Okanagan Valley, BC — captured with a multispectral drone and prepared for grower and agronomist review. Processed June 2026.

1,199 IMAGES · RTK FIX	5 VEGETATION INDICES	0.49 cm MS PIXEL SPACING	0.44 ha VINE CANOPY MAPPED
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DJI MAVIC 3M · 4-BAND MULTISPECTRAL + RGB · SUNLIGHT SENSOR · PROCESSED IN DJI TERRA



Demonstration capture on our own vineyard block — presented as a sample of the deliverable, not client work. Relative-vigor mapping; not a nutrient, disease, or irrigation diagnosis.

The block, in true colour

This is simply a photograph of your block — stitched from 1,199 overlapping drone photos into one true-to-scale image. Every coloured map in this report sits exactly on top of it, so anything we flag can be walked to in the rows.



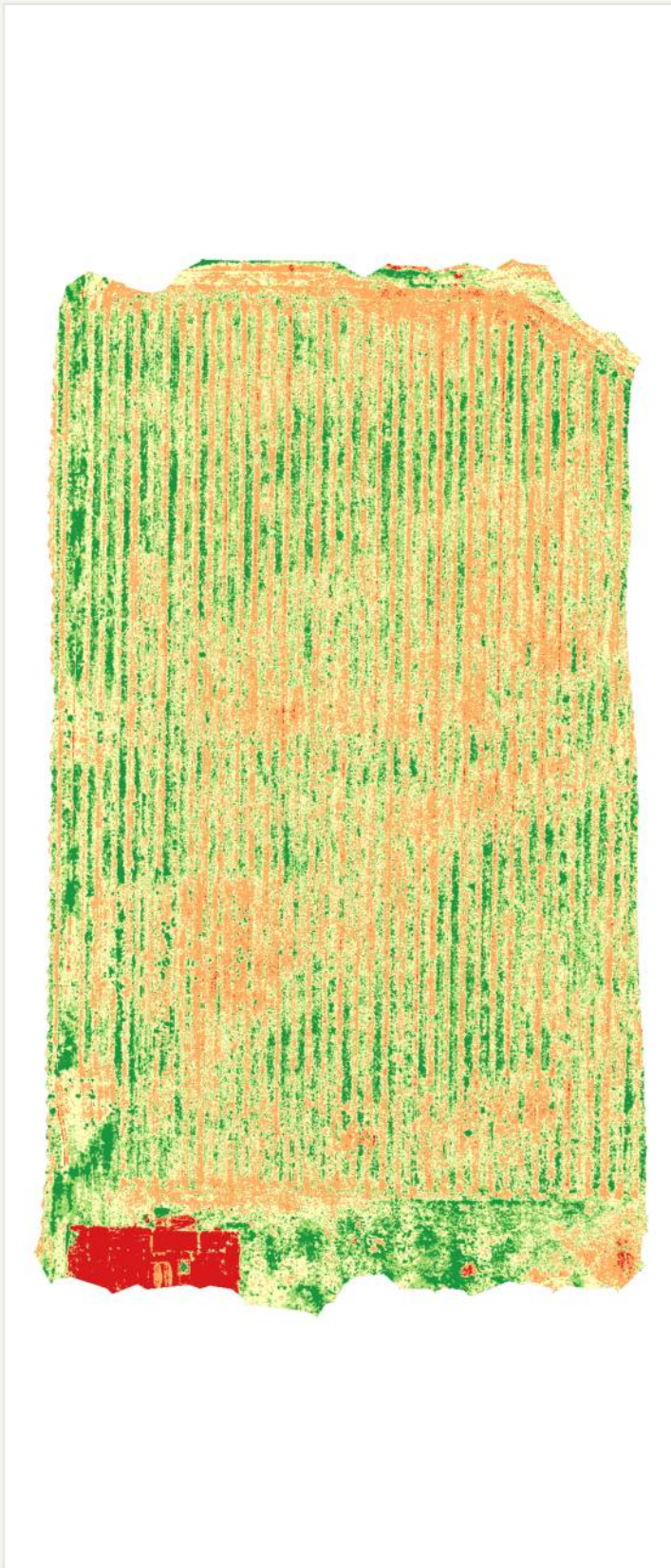
Capture

AIRCRAFT	DJI Mavic 3M (multispectral)
SENSORS	Green · Red · Red-edge · NIR (5 MP each) + 20 MP RGB + sunlight sensor
POSITIONING	RTK — all 1,199 images FIX
PROCESSING	DJI Terra 5.1.30.1, reflectance workflow
RGB SPACING	~0.29 cm/pixel (delivered)
MS SPACING	~0.49 cm/pixel (delivered)
INTERNAL FIT	2.5 cm RMSE (processing residual; not independently verified)
VINE CANOPY	0.44 ha (38.4% of mapped ground)
DATE	Processed June 2026

The capture extent includes some non-vineyard ground at the south edge; field-wide statistics are labelled accordingly, and vine-canopy statistics isolate the planting itself.

NDVI — overall canopy vigor

The standard vegetation index (near-infrared vs red light). Healthy, dense canopy reads high (green); weak or sparse growth reads low (red). Whole-field view — inter-row ground is included and labelled.



How to read this map: each pixel is about half a centimetre of ground. Green means dense, healthy leaf; yellow is moderate; red is weak growth or bare soil. The stripes are your vine rows — the ground *between* rows naturally reads red, and that's normal, not a problem.

Field-wide class distribution — share of the whole block in each band

CLASS	NDVI	AREA
Very low	< 0.20	1.9%
Low	0.20–0.35	29.2%
Moderate	0.35–0.50	34.7%
Good	0.50–0.65	22.5%
Very high	> 0.65	11.7%

Vine canopy only (rows isolated)

The same data with the ground between rows removed — just your vines:

median NDVI **0.553**
 mean NDVI **0.559**
 good-very-high **67.7%** of canopy
 very-low **~0%**
 uniformity CV **19.7%**

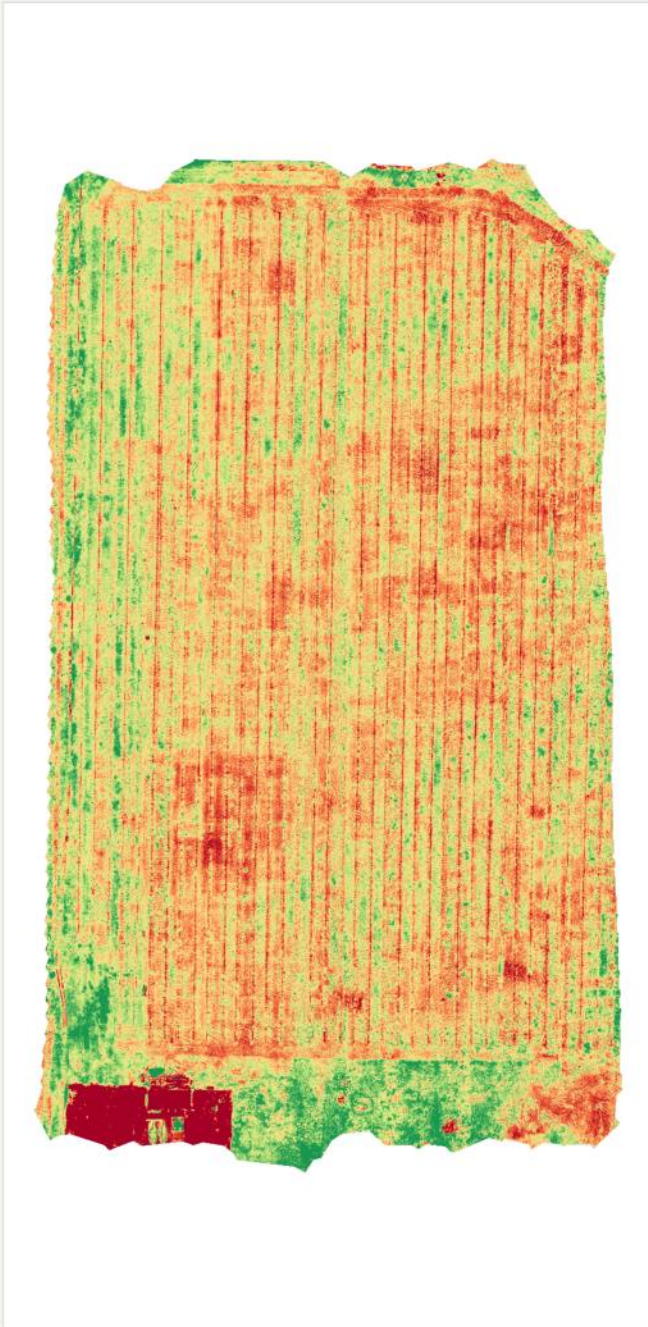
Whole-field numbers run lower than vine health suggests because bare inter-row ground dilutes the average — the canopy-only figures above are the truer read of the vines.

NDVI · RELATIVE VIGOR CLASSES (WHOLE-FIELD)

■ < 0.20
 ■ 0.20–0.35
 ■ 0.35–0.50
 ■ 0.50–0.65
 ■ > 0.65

NDRE & LCI — reading deeper into the canopy

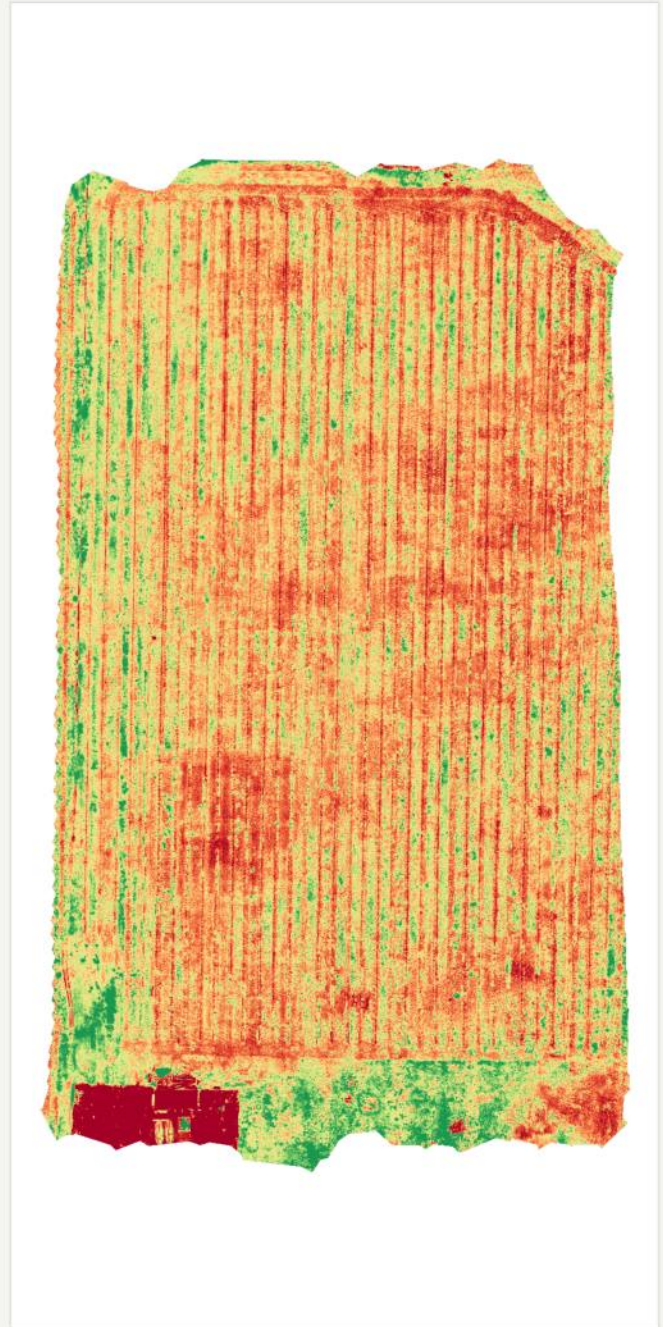
Same block, two more ways of measuring it. Red-edge light reads deeper into dense leaves than the red light NDVI uses — think of these as the mid-season check-up. When they agree with NDVI, that agreement is itself the finding.



NDRE · RELATIVE (2-98% STRETCH)
0.061 0.203

NDRE median 0.129

Normalized-difference red-edge. The go-to index once canopy fills in: a zone reading low here before it shows in NDVI is an early flag worth a walk-through.



LCI · RELATIVE (2-98% STRETCH)
0.07 0.282

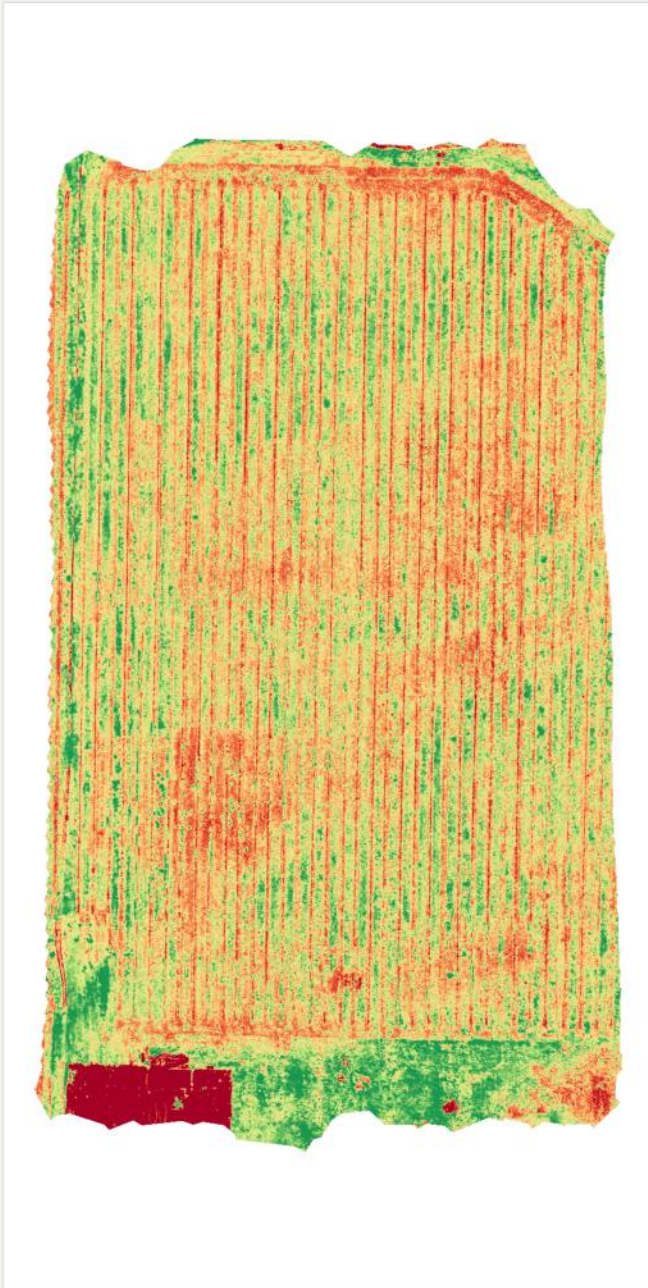
LCI median 0.16

Leaf chlorophyll index. A second, independent chlorophyll-sensitive view — agreement between LCI and NDRE patterns adds confidence that variation is real.

Both maps are relative (2-98% stretch of this flight's values). Patterns that repeat across NDVI, NDRE and LCI are the ones worth a field check.

GNDVI & OSAVI — greenness and soil correction

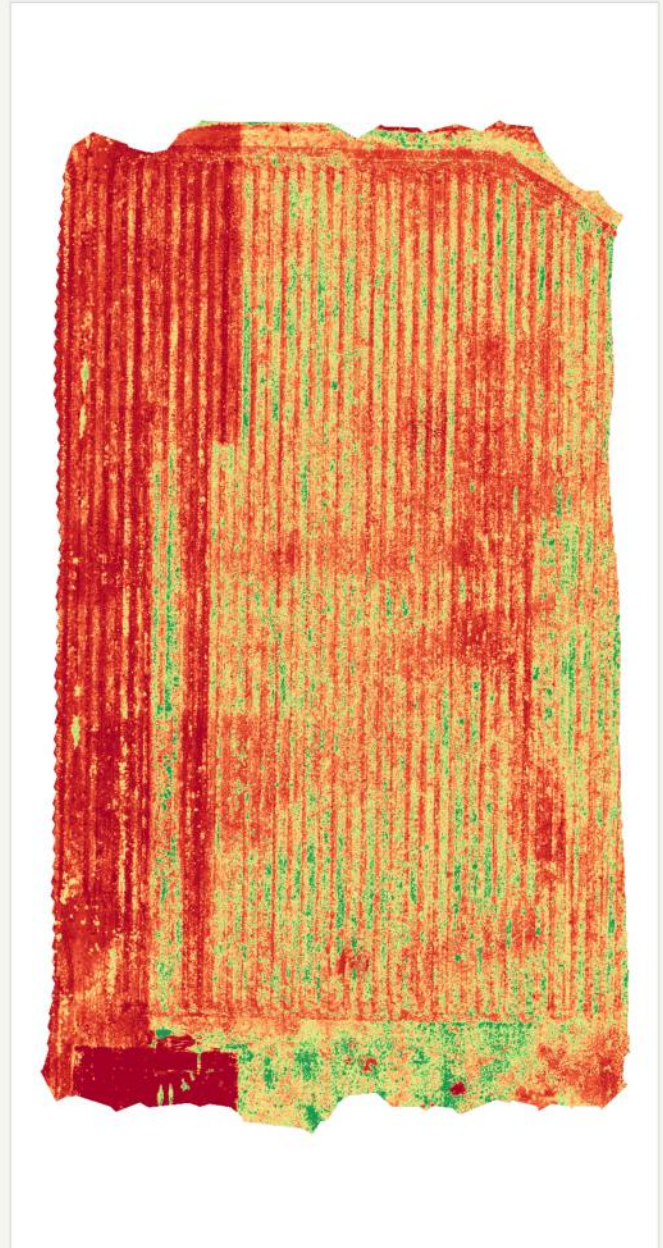
Two cross-checks on the same ground. GNDVI reads overall greenness; OSAVI mutes the bare soil that shows between vine rows, so the vines stand out from the dirt. Patterns that survive all five maps are the ones that matter.



GNDVI · RELATIVE (2-98% STRETCH)
0.276 0.689

GNDVI median 0.486

Green normalized-difference index. Saturates less than NDVI in dense canopy and is commonly read alongside nitrogen-status variability — flagged here for agronomist review, not as a nutrient diagnosis.



OSAVI · RELATIVE (2-98% STRETCH)
0.01 0.087

OSAVI median 0.033

Optimized soil-adjusted vegetation index. Reduces the brightness influence of exposed soil between rows. Note: values follow DJI Terra's processing scale, which differs from the textbook 0-1 range — read the spatial pattern (relative), not the magnitude.

Five indices, one flight, one georeferenced grid — every map overlays the same centimetre-level ground, so a zone flagged in one index can be cross-checked in all of them.

Observations for grower & agronomist review

Plain-English findings from the five maps. The job of this page is simple: point your time at the right rows.

Observed in this flight

- **Vigor is consistent across the planting.** Canopy uniformity CV of 19.7% with 67.7% of vine canopy in the good-to-very-high classes and effectively no very-low canopy.
- **No coherent problem zones within the planting.** Low whole-field readings concentrate on bare inter-row ground and the non-vineyard area at the south edge — not on the vines.
- **Edge rows read slightly lower** — common at block boundaries (wind, traffic, headland effects) and worth a routine walk-through.
- **Chlorophyll indices agree with NDVI.** NDRE and LCI repeat the same broad pattern, which supports the vigor read rather than suggesting a hidden mid-canopy issue.

What to do with this report

- **Walk the lower-reading spots with the map in hand** — the interactive map that ships with this report zooms to individual vines, so a flagged zone becomes a specific row to stand in.
- **Give your agronomist this report plus the GeoTIFF files.** The maps tell them *where*; the ground tells them *why*. Zone files (shapefile/CSV) come free on request.
- **Where readings dip, check the simple causes first** — vigor variability is commonly associated with irrigation coverage, soil changes, or vine age. Your agronomist confirms which on the ground.
- **Book the next flight at the growth stage your agronomist cares about.** Season-tracking flights use a certified reflectance panel so values compare date-to-date — one snapshot becomes a trend.

A vigor map's job is simple: make sure the time you spend in the rows is spent in the right rows.

When a flight finds a problem

This block reads healthy, so there is little to act on — that is a good result, not a thin report. On a block with a real issue, the problem shows as a **coherent patch on the vine rows that repeats across NDVI, NDRE and LCI**. When that happens we mark the zone, measure its area, give you the exact location to walk to, and hand your agronomist a GIS zone file that takes them straight to the affected rows.

Reading this report honestly

These are **relative** vigor maps: they rank this block against itself on this day. They do not diagnose nutrients, disease, or water status — they show *where* to look, so ground decisions stay with you and your agronomist.

Limitations

- Single snapshot — conditions change through the season.
- No reflectance panel was used on this flight; values are relative to the flight itself.
- Whole-field maps include inter-row ground (labelled); canopy statistics isolate vines.
- Internal processing fit 2.5 cm; absolute accuracy not independently verified on this capture.

ZONES IDENTIFIED FOR GROWER & AGRONOMIST REVIEW — NOT A PRESCRIPTION

How this report was produced

Capture & processing

FLIGHT	1,199 images, 100% RTK FIX positioning
SENSOR	DJI Mavic 3M — Green 560 nm · Red 650 nm · Red-edge 730 nm · NIR 860 nm (+ RGB, + sunlight sensor)
SOFTWARE	DJI Terra 5.1.30.1 — reflectance workflow; indices computed in Terra
OUTPUTS	RGB orthomosaic (~0.29 cm/px) · 4 band rasters · NDVI, GNDVI, NDRE, LCI, OSAVI (~0.49 cm/px)
CRS	WGS 84; GIS deliverables reprojected on request (UTM 11N / NAD83 CSRS)

Index formulas — for your agronomist; you don't need these to use the report

- NDVI = $(\text{NIR} - \text{Red}) / (\text{NIR} + \text{Red})$
- GNDVI = $(\text{NIR} - \text{Green}) / (\text{NIR} + \text{Green})$
- NDRE = $(\text{NIR} - \text{RedEdge}) / (\text{NIR} + \text{RedEdge})$
- LCI = $(\text{NIR} - \text{RedEdge}) / (\text{NIR} + \text{Red})$
- OSAVI = soil-adjusted NDVI (L = 0.16)

Deliverables with a full engagement

- This PDF report, plus all index maps as **GeoTIFF** for QGIS / ArcGIS
- RGB orthomosaic (GeoTIFF + Google Earth KMZ)
- Interactive web map — zoom to individual vines
- Optional: management-zone shapefiles / CSV per index
- Optional: repeat-flight time series — flown with a certified reflectance panel for flight-to-flight comparability

Planning-grade mapping product. Not a legal cadastral plan; boundary or legal work requires a BC Land Surveyor (BCLS).

Every map in this report can be reproduced from the archived flight data — nothing is hand-edited.

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