



Capture. Map. Inspect

The Drone-Enabled Inspection Playbook for Oil & Gas

A practical guide to safer access, better data, and
smarter inspection decisions.

OIL & GAS INSPECTIONS REIMAGINED FROM ABOVE

MORE VISIBILITY. LESS EXPOSURE.



The Evolution of Industrial Inspections

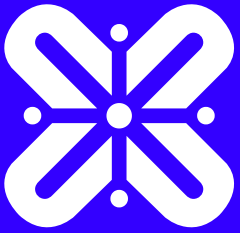
Oil and gas teams are under pressure to inspect more assets, improve documentation, and reduce exposure in complex environments.

Traditional methods still have their place, but they often require crews to climb, enter difficult access areas, or mobilize equipment before the full site condition is clear.

Drone-enabled inspections change that starting point.

Through aerial visuals, thermal imaging, LiDAR mapping, and 3D modeling, operators gain faster visibility, better records, and decision-ready data for maintenance, safety, engineering, and operations.

The goal is not to replace experienced inspectors. It is to give them better information before people, equipment, or production are put at risk.



THE SHIFT TOWARD DRONE-ENABLED INSPECTIONS

Critical infrastructure requires clearer visibility, safer access, and better inspection data.



Oil and gas inspection programs are moving beyond one-time visual checks and manual documentation. Today, operators need safer access, faster site visibility, and inspection data that can be reviewed, measured, shared, and compared over time.

Drone-enabled workflows help teams capture field conditions before decisions are made on the ground. With the right mission plan, aerial data can support safer inspections, clearer documentation, and faster alignment between maintenance, engineering, safety, and operations.

INSIDE, YOU'LL LEARN HOW DRONES HELP TEAMS:

Reduce Risk

Limit unnecessary exposure to heights, confined spaces, hazardous areas, and difficult-access infrastructure.

Increase Visibility

Capture site conditions, asset details, thermal indicators, and mapped data from a safer vantage point.

Improve Decisions

Turn inspection data into usable records for maintenance, safety, engineering, compliance support, and operations planning.

What's Inside:

- 3 Drones across the inspection lifecycle
- 4 Inspect More. Risk Less.
- 5 The Drone Inspection Roadmap
- 6 The Partner Standard
- 7 Built to Capture. Map. Inspect.
- 8 See, understand, and act on industrial assets.

DRONES ACROSS THE INSPECTION LIFECYCLE

Drone-enabled inspections create value before crews mobilize, while data is captured, and long after the flight is complete.

PHASE 1



Inspection Strategy

Aerial planning helps teams understand current site conditions, access limitations, asset priorities, and potential hazards before sending people or equipment into the field.

Supports

- Current site context
- Access and risk review
- Mission planning and flight paths

PHASE 2



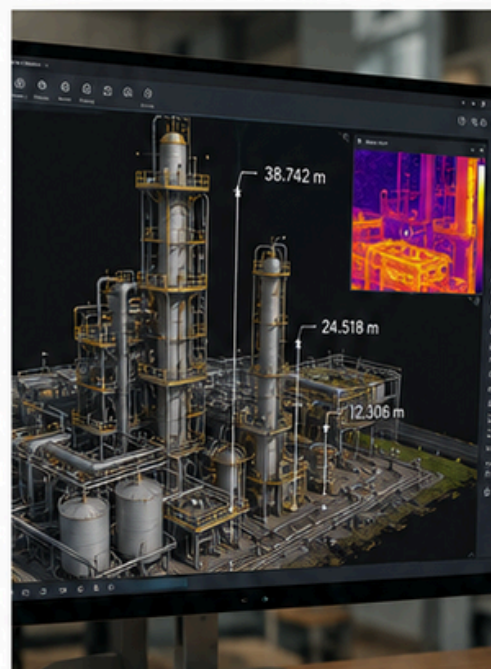
Asset Intelligence Capture

Visual, thermal, LiDAR, and mapping workflows can be matched to the inspection objective, helping teams capture broad site context and close-range asset detail in one coordinated mission.

Supports

- Visual and thermal screening
- Reduced unnecessary exposure
- Mission planning and flight paths

PHASE 3



Decision-Ready Deliverables

Captured data becomes usable records: maps, models, measurements, thermal overlays, annotated visuals, and georeferenced findings that support maintenance, safety, engineering, and operations.

Supports

- CAD-ready files and 3D models
- Trend data across inspection cycles
- Findings tied to location and context

**INSPECT
MORE.
RISK LESS.**

Drone-enabled workflows help operators cover large assets, access difficult infrastructure, reduce unnecessary personnel exposure, and capture visual, thermal, LiDAR, and mapping data with a mission-specific approach.



PIPELINES & RIGHTS-OF-WAY

Monitor corridor conditions, access routes, erosion concerns, vegetation growth, encroachments, and right-of-way changes across long linear assets.

TANKS, VESSELS & STORAGE INFRASTRUCTURE

Inspect roofs, shells, containment areas, exterior components, and connection points without relying on scaffolding, lifts, or unnecessary climbing.

PRODUCTION FACILITIES & REFINERIES

Document piping racks, process equipment, electrical infrastructure, site layouts, and operational areas while reducing personnel exposure in active environments.

CONSTRUCTION & EXPANSION SITES

Track progress, compare plan-versus-build conditions, support stakeholder reporting, and document as-built conditions throughout project development.

METHANE, H₂S & HAZARDOUS LOCATIONS

Support safer inspection planning in areas where gas risk, emissions concerns, or hazardous access conditions may be present. Specialized sensor workflows can be evaluated based on the site, objective, and reporting requirements.

THE DRONE INSPECTION ROADMAP

01 DEFINE THE INSPECTION OBJECTIVE

Start with the asset, risk, decision, and reporting need. The objective should determine the flight method, sensor workflow, and deliverable format.



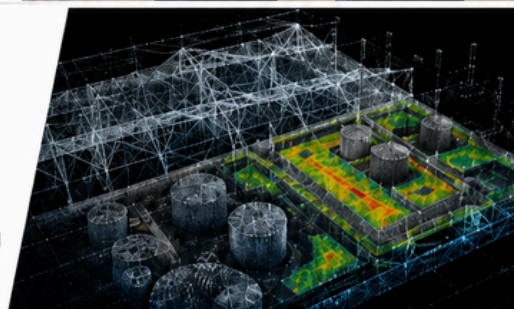
02 PLAN AROUND SAFETY & COMPLIANCE

Review site access, airspace, operating hazards, pilot requirements, communication protocols, and emergency procedures before mobilizing.



03 MATCH THE SENSOR TO THE MISSION

Select the right capture approach for the job, whether visual documentation, thermal screening, LiDAR mapping, 3D modeling, or specialized sensor support.



04 TURN DATA INTO DECISION-READY OUTPUTS

Organize findings into maps, models, annotated visuals, measurements, and reports that maintenance, safety, engineering, and operations teams can use.



05 BUILD A REPEATABLE INSPECTION CADENCE

Standardize routes, naming conventions, deliverable formats, and review cycles so each inspection becomes part of a long-term asset record.



SAVE TIME

Complete inspections in a fraction of the time.



REDUCE RISK

Keep teams safe and operations secure.



LOWER COSTS

Eliminate unnecessary downtime and rework.



IMPROVE DECISIONS

Access reliable data you can act on.



MAXIMIZE ASSETS

Extend asset life with smarter maintenance.

THE PARTNER STANDARD

A drone flight captures footage.

An inspection partner helps turn the right data into safer, smarter decisions.

**IN OIL AND GAS,
THE VALUE OF
DRONE INSPECTION**

**IS NOT JUST
THE FLIGHT.**

It is the planning, sensor selection, safety process, and deliverables that help teams act with confidence.

The right partner understands the asset, the risk, and the decision the inspection is meant to support



Partner Standard	Operational Impact
Safety-First Operations	FAA-certified flight operations, insured coverage, and site-specific planning help reduce risk before anyone mobilizes.
Mission-Specific Workflows	Visual, thermal, LiDAR, mapping, and specialized sensor workflows should be matched to the asset, environment, and inspection objective.
Oil & Gas Context	Findings move quickly from drone data to next steps so teams can move from detection to repair faster.
Decision-Ready Deliverables	Data should be organized into maps, models, annotated visuals, measurements, and reports your team can actually use.
Scalable Engagement	Start with one site, one corridor, or one inspection objective. Expand once the data, process, and value are clear.








**BUILT
TO:** **Capture.
Map.
Inspect.**



LUMEX PRODUCTIONS HELPS INDUSTRIAL TEAMS TURN AERIAL DATA INTO PRACTICAL INSPECTION INTELLIGENCE.

The goal is not just better footage. It is better inspection intelligence: thermal insight, LiDAR mapping, 3D models, documentation, and reporting that help teams act with confidence.

WHAT WE DO				
				
AERIAL VIDEOGRAPHY	AERIAL PHOTOGRAPHY	MAPPING & 3D MODELING	INSPECTIONS & ANALYTICS	INDUSTRIES WE SERVE
Cinematic visuals that bring your story to life.	High-resolution imagery for marketing, documentation, and reporting.	Accurate geospatial data and 3D models for planning, measurement, and analysis.	Safe, efficient inspections with actionable data and real-time insights.	Oil & Gas, Construction, Energy, Real Estate, Infrastructure & More.

TRANSFORM HOW YOU SEE, UNDERSTAND, AND ACT ON INDUSTRIAL ASSETS.

Drone-enabled inspections
give operators:

- ✓ Safer access to critical assets
- ✓ Complete visual, thermal, and LiDAR coverage
- ✓ Decision-ready outputs for engineering, safety, and operations

The Bottom Line

Safety, clarity, and usable inspection data are the starting point for better asset management. Partner with Lumex to integrate aerial intelligence into your industrial workflows.

Start with one asset, one site, or one inspection challenge and see what better aerial data can make possible with Lumex Productions.



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