

PART 2: THE MATERIAL FLOW

Why This Industry Works for Us

- [2.1 Quarry \(Stone Mining\)](#)
- [2.2 Sand & Gravel Plants](#)
- [2.3 Cement & Lime Plants](#)
- [2.4 Terminals](#)
- [2.5 Ready Mix \(Batch Plants\)](#)
- [2.6 Asphalt Plants](#)
- [2.7 Concrete Recyclers](#)

2.1 Quarry (Stone Mining)

Process:

1. Remove overburden
2. Drill bore holes
3. Blast rock
4. Load shot rock
5. Haul to primary crusher
6. Convey to secondary crushers
7. Separate by size
8. Stockpile finished product

Drone Applications:

- Overburden cut/fill
- Bench progression
- Shot rock volume
- Finished stockpiles
- Monthly reconciliation
- Multi-surface comparisons (RTK required)

2.2 Sand & Gravel Plants

Process:

1. Excavate or dredge
2. Wash material
3. Screen material
4. Separate sand vs gravel
5. Stockpile products

Key Differences vs Quarries:

- Messier sites
- Poor pile definition
- Moisture variability
- Often near rivers
- Heavy wash plant infrastructure

Drone Applications:

- Wet sand volume
- Multi-product tracking
- Dredge progression
- Wash plant feed tracking

2.3 Cement & Lime Plants

Process:

1. Mine limestone
2. Crush material
3. Heat in kiln (extreme temps)
4. Produce clinker/lime
5. Store in silos
6. Fuel kilns with coal

Drone Applications:

- Coal inventory
- Overburden
- Raw material piles
- Outdoor storage
- Terminal inventory

Indoor stockpiles = possible but not preferred.

2.4 Terminals

Function:

- Rail in
- Stockpile
- Load out to trucks
- Serve metro markets

Strategic importance:

- Centrally located
- High throughput
- Recurring inventory need

Terminals are ideal recurring customers.

2.5 Ready Mix (Batch Plants)

Function:

- Store aggregates in bins
- Mix with cement + water
- Load concrete trucks
- Deliver within 30-minute radius

Why We Love Them:

- Extremely dense geographically
- Multiple sites per owner
- Recurring replenishment
- Tight inventory cycles
- Easy visual identification (silos + bins)

2.6 Asphalt Plants

Process:

- Aggregate
- Oil binder
- Heat drum
- Mix
- Load hot

Key marker:

- The “arch” structure over drum system
- RAP (Recycled Asphalt Pavement) piles

Drone Applications:

- RAP volume
- Aggregate inventory
- Multi-yard operations

2.7 Concrete Recyclers

Function:

- Accept demolished concrete
- Crush it
- Screen it
- Sell flex base

Often:

- Messy yards
- Mixed materials
- Irregular piles

Great recurring volume clients.