Timothy M. Keller, Mayor

Danny Nevarez, Acting Director

Cumulative Impacts & Air Quality Permitting

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City of Albuquerque
Environmental Health Department
Air Quality Program

Presented at the February 1, 2018 Air Quality Coalition meeting

Cumulative Impacts

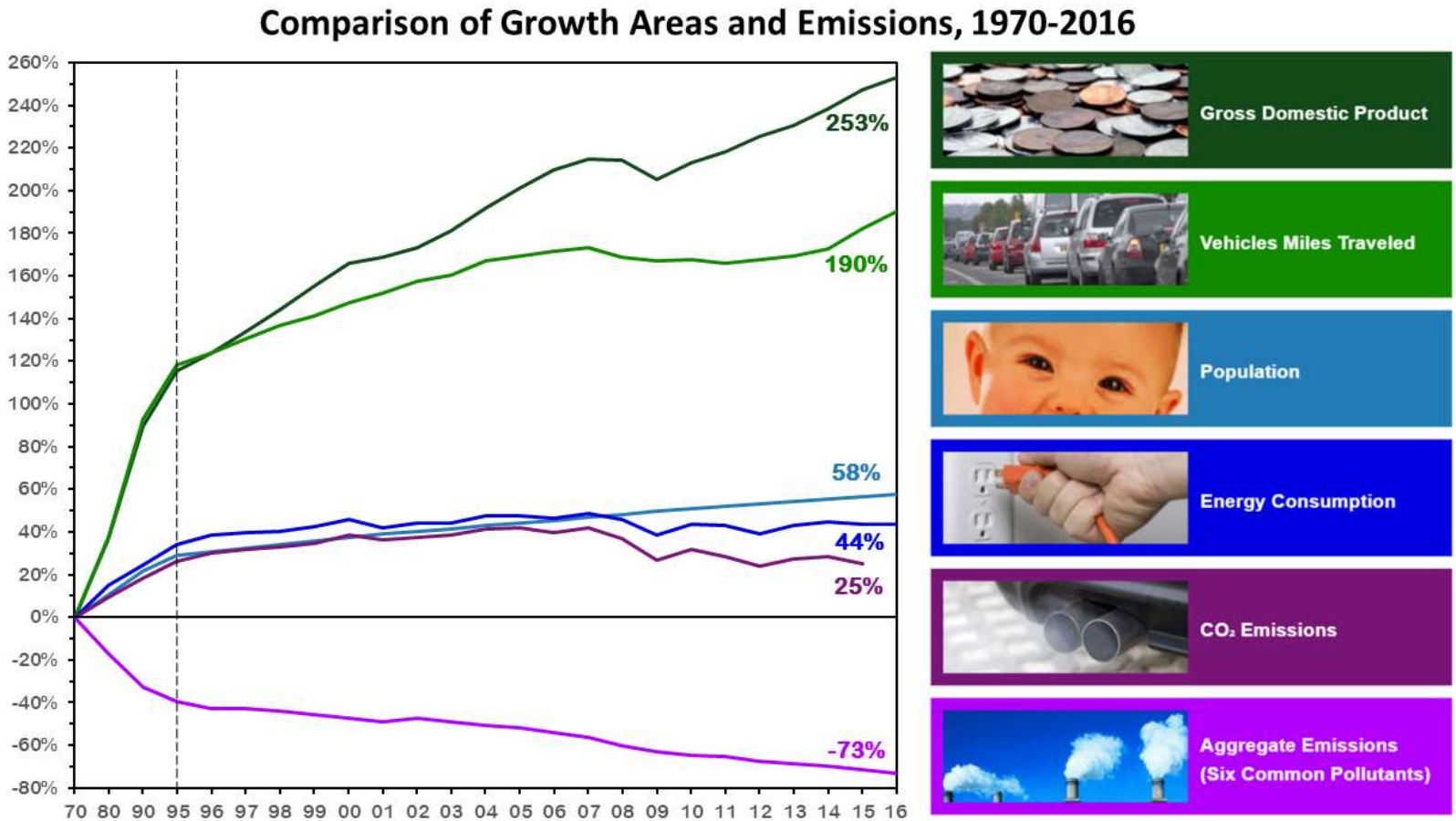
- Recognize community concerns
- Various interpretations
- Cumulative air quality impacts that are evaluated in the permitting process for common pollutants

Two Approaches

- Common Pollutants -- Allowed levels of air pollution in the form of ambient standards (concentration)
  - carbon monoxide (CO)
  - nitrogen oxides (NO_X)
  - sulfur dioxide (SO_2)
  - particulate matter (TSP, PM_{10}, & $PM_{2.5}$)
  - Lead (Pb)
  - hydrogen sulfide (H_2S)

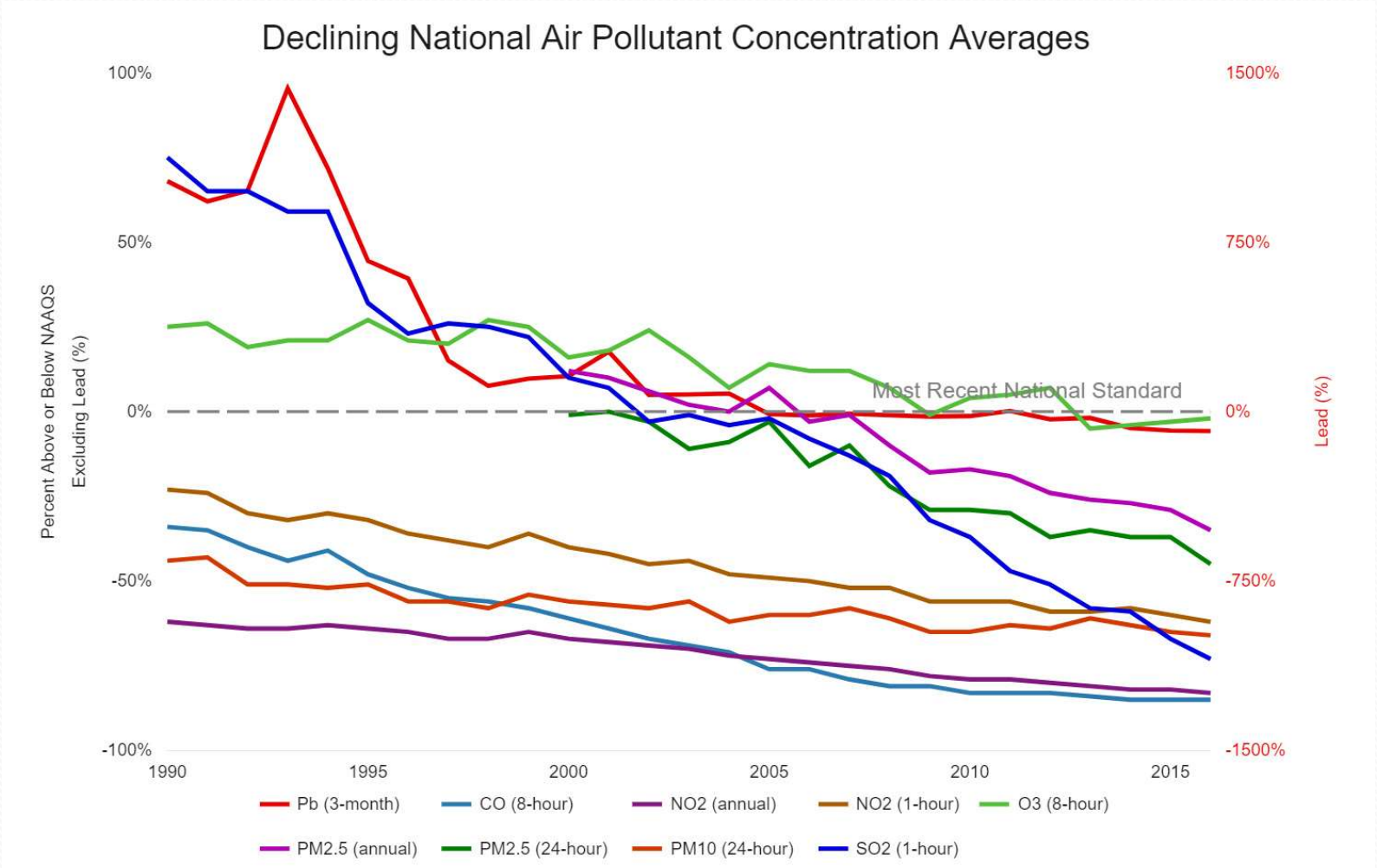
- Performance standards & practices
  - Hazardous air pollutants

Ambient Standards Approach



Note: CO2 emissions estimate through 2015 (Source: 2015 US Greenhouse Gas Inventory Report)
Gross Domestic Product: Bureau of Economic Analysis
Vehicle Miles Traveled: Federal Highway Administration
Population: Census Bureau
Energy Consumption: Dept. of Energy, Energy Information Administration
Aggregate Emissions: EPA's Air Pollutant Emissions Trends Data

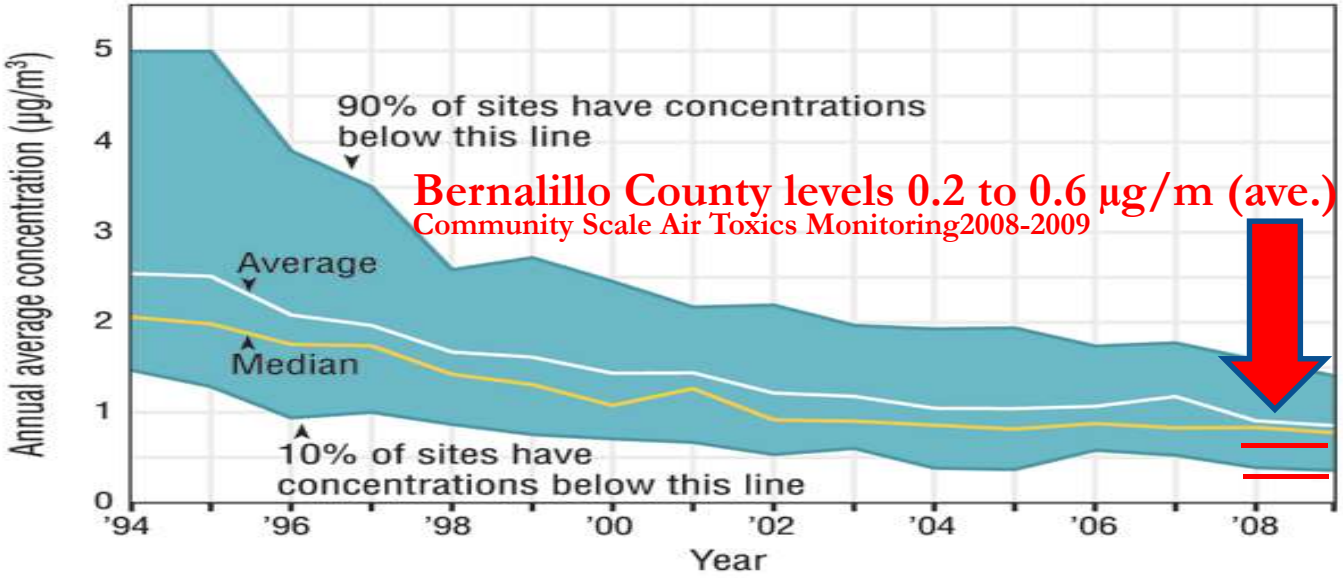
Ambient Standards Approach



Source US EPA Air Quality System, https://gispub.epa.gov/air/trendsreport/2017/#highlights

Hazardous Air Pollutants Approach

Exhibit 2-43. Ambient benzene concentrations in the U.S., 1994-2009[a]



[a] **Coverage:** 22 monitoring sites nationwide (out of a total of 339 sites measuring benzene in 2009) that have sufficient data to assess benzene trends since 1994.

Data source: *U.S. EPA, 2010*

Source US EPA, https://cfpub.epa.gov/roe/documents/BenzeneConcentrations.pdf

Cumulative Impacts - Air Dispersion Modeling

- Environmental Protection Agency approved software and guidelines

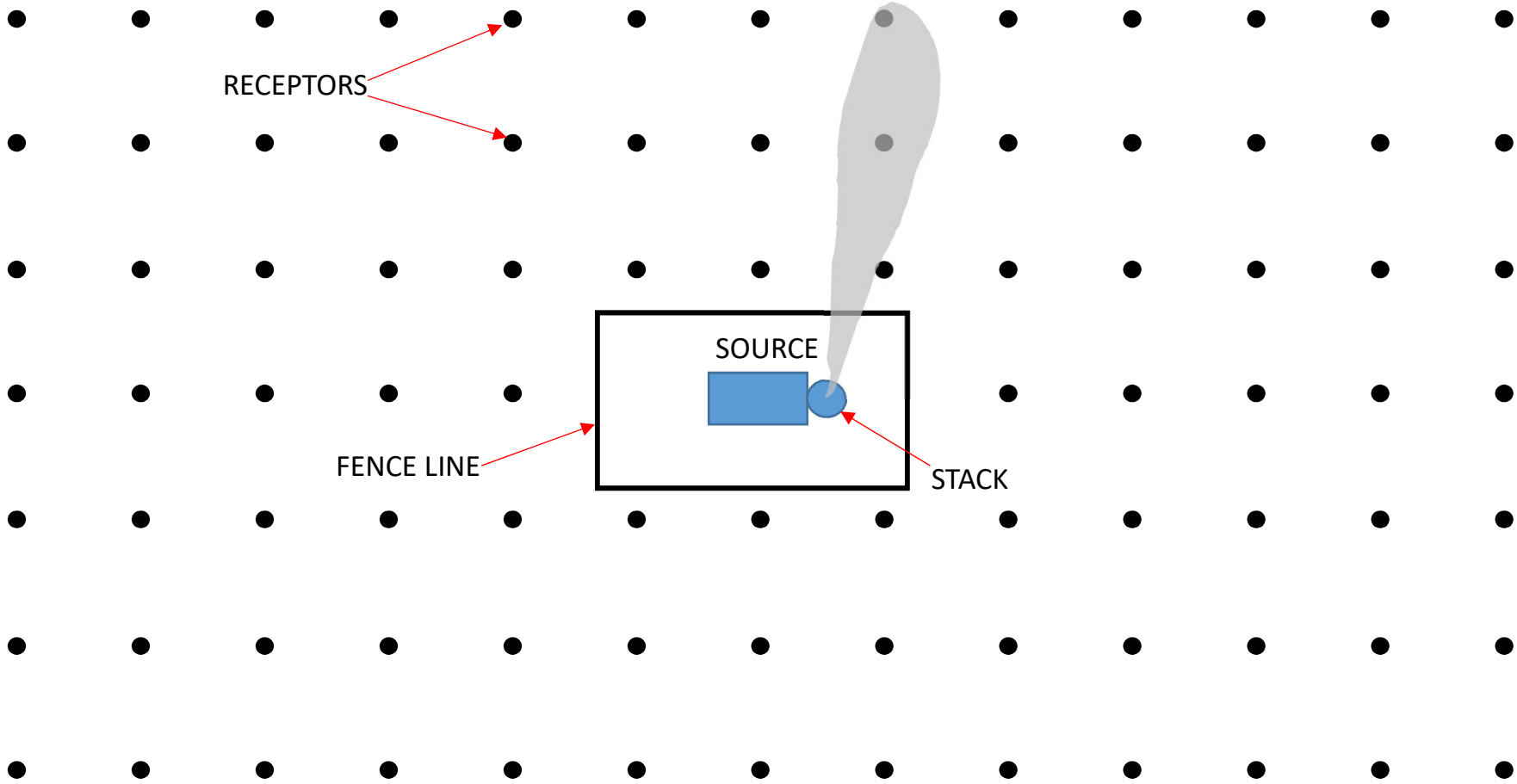
- Existing pollution, air emissions from the proposed stationary source and weather conditions are used in the model

- Increasing complexity

Over Predicts Impacts - Perfect Storm

- Highest Impacts
  - Weather conditions → pollution accumulates
  - Proposed project operating with permitted pollution rates during **all** of the requested operating hours
  - Near-by sources operating with permitted pollution rates during **all** of the requested operating hours

HOUR 1



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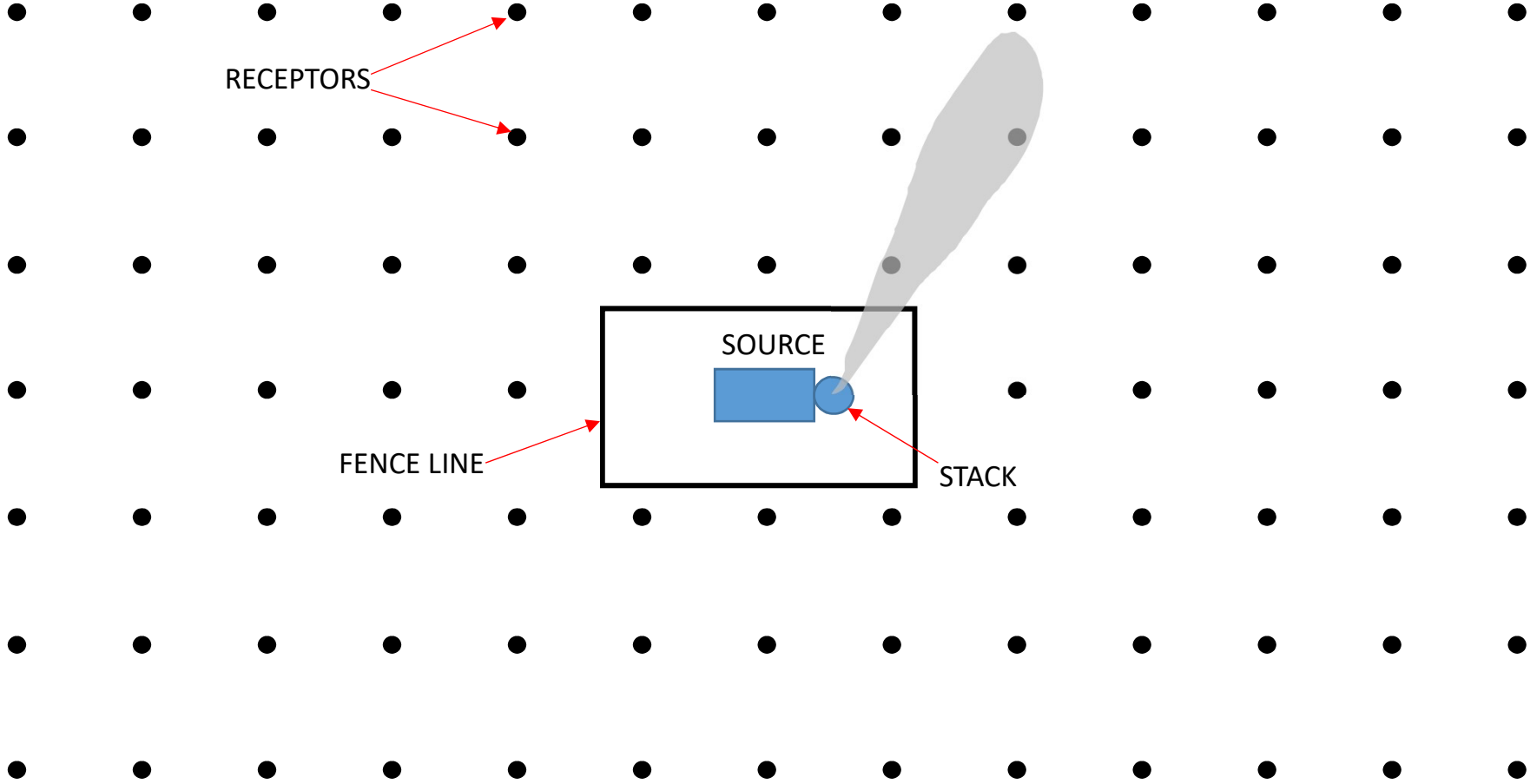

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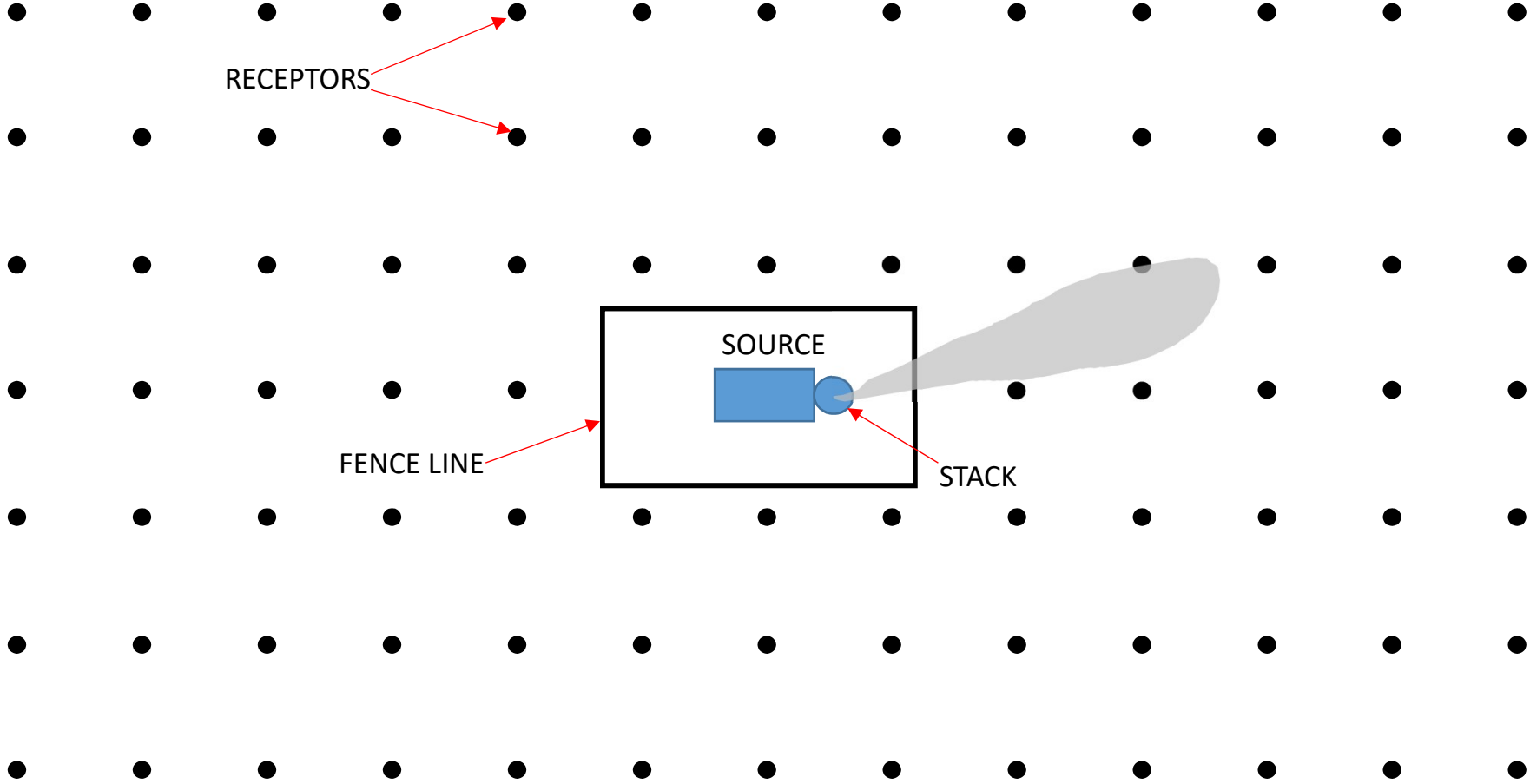

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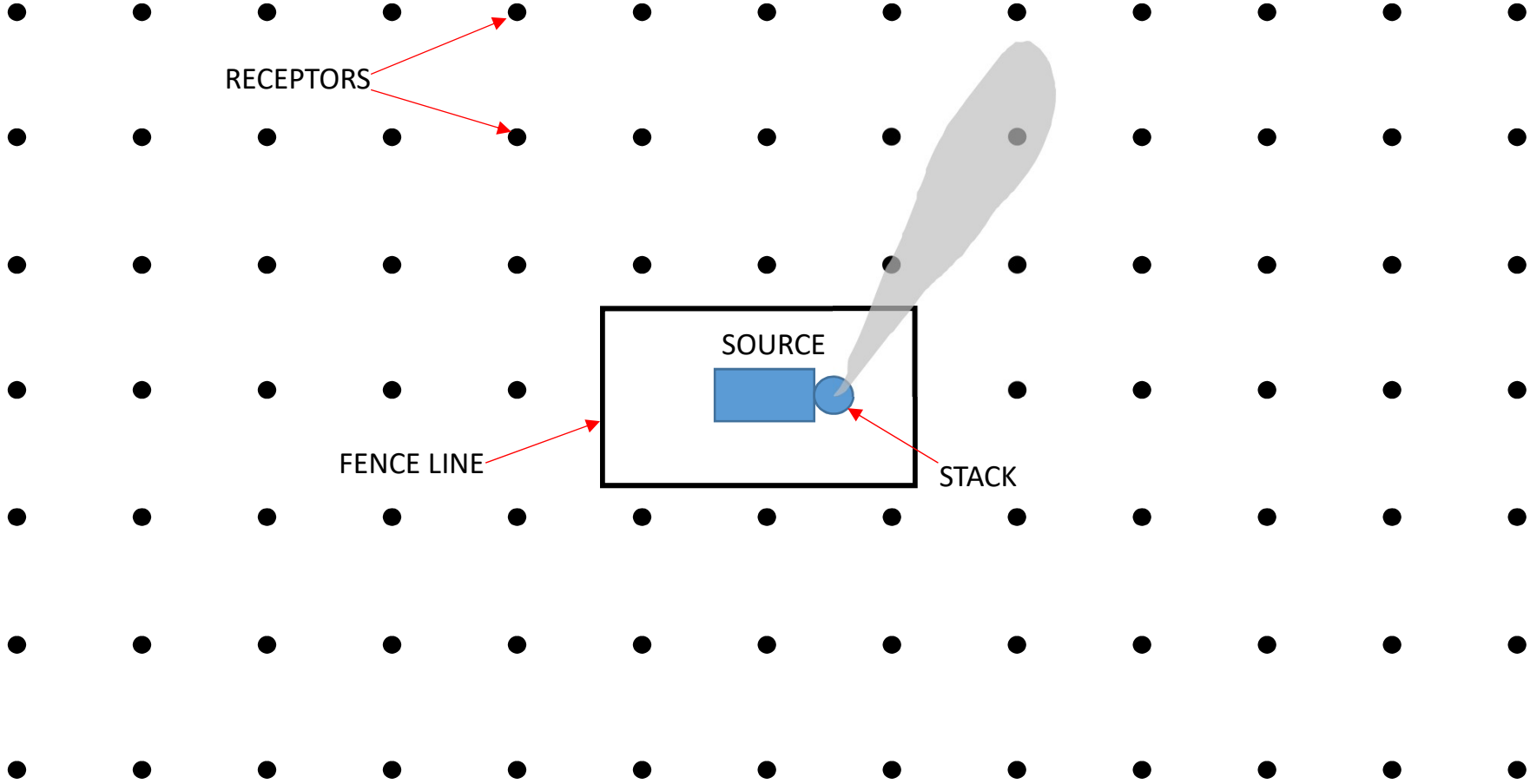

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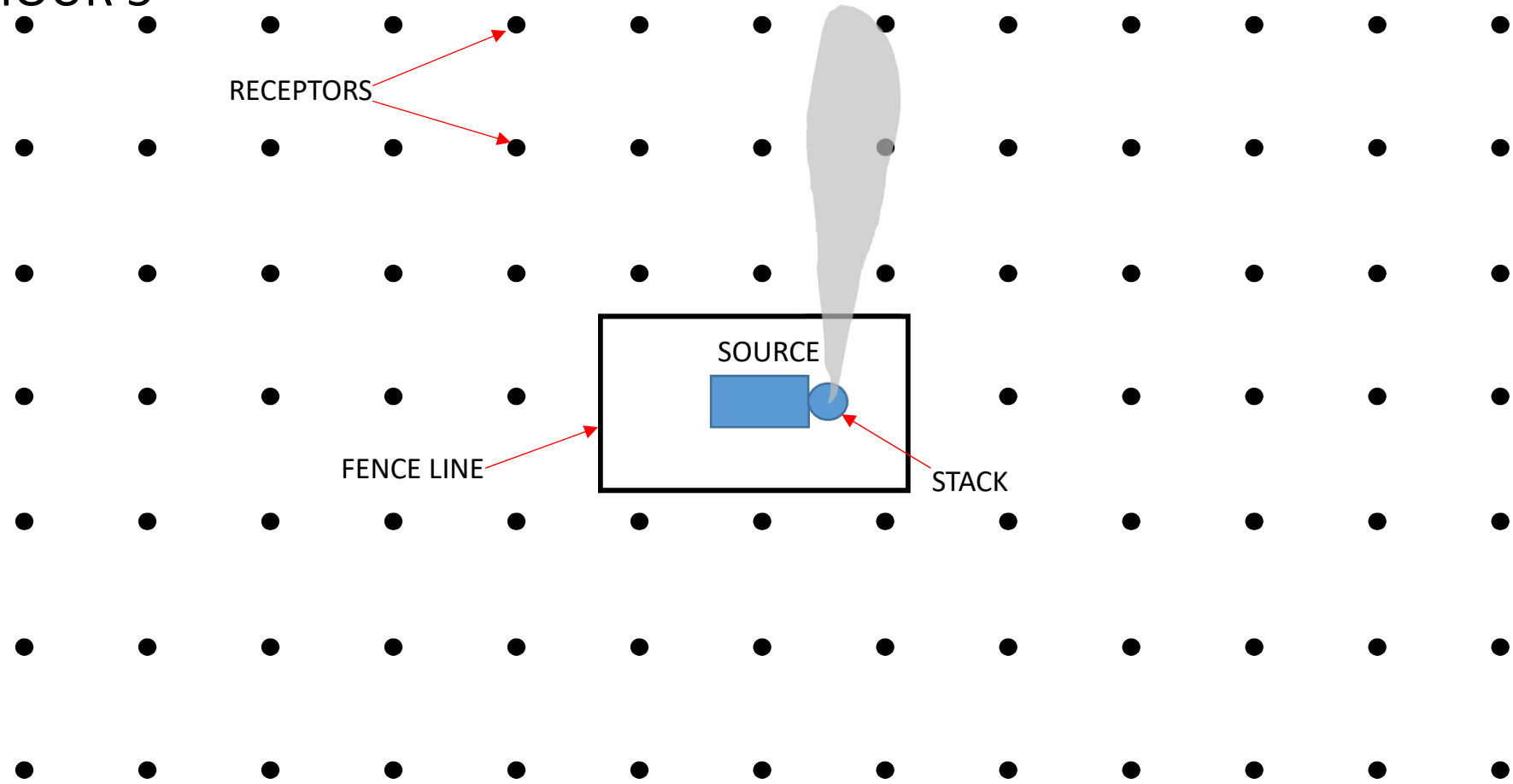

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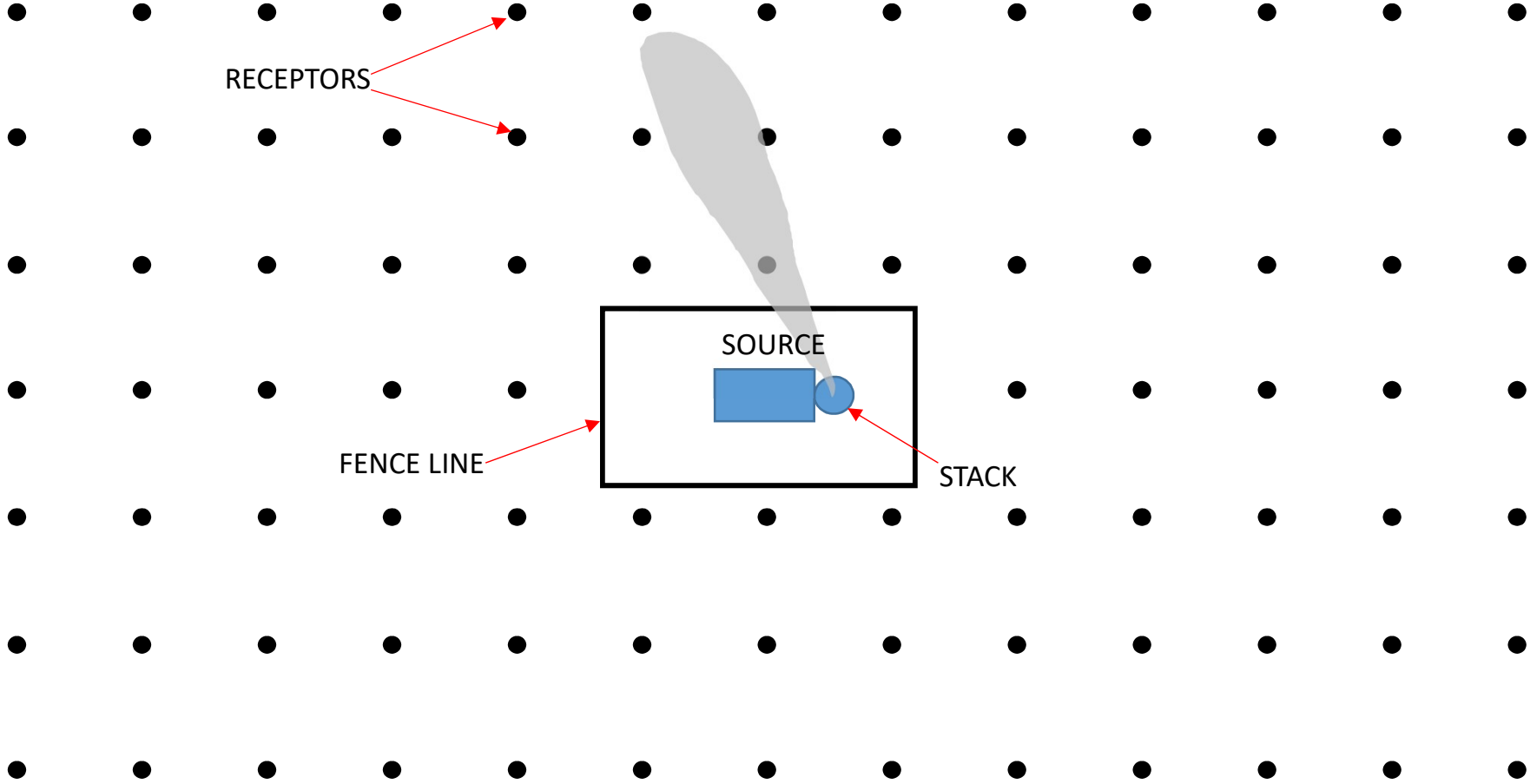

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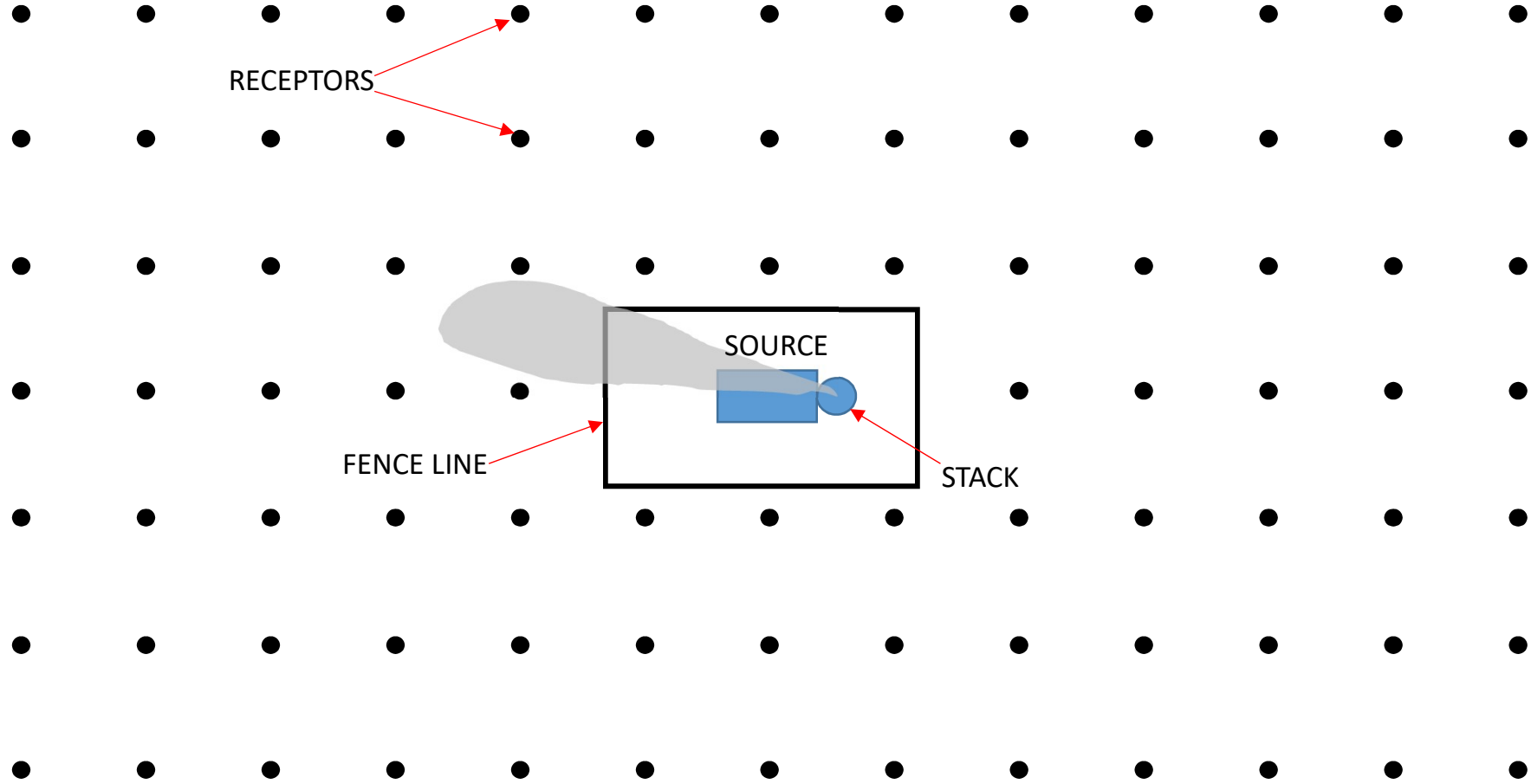

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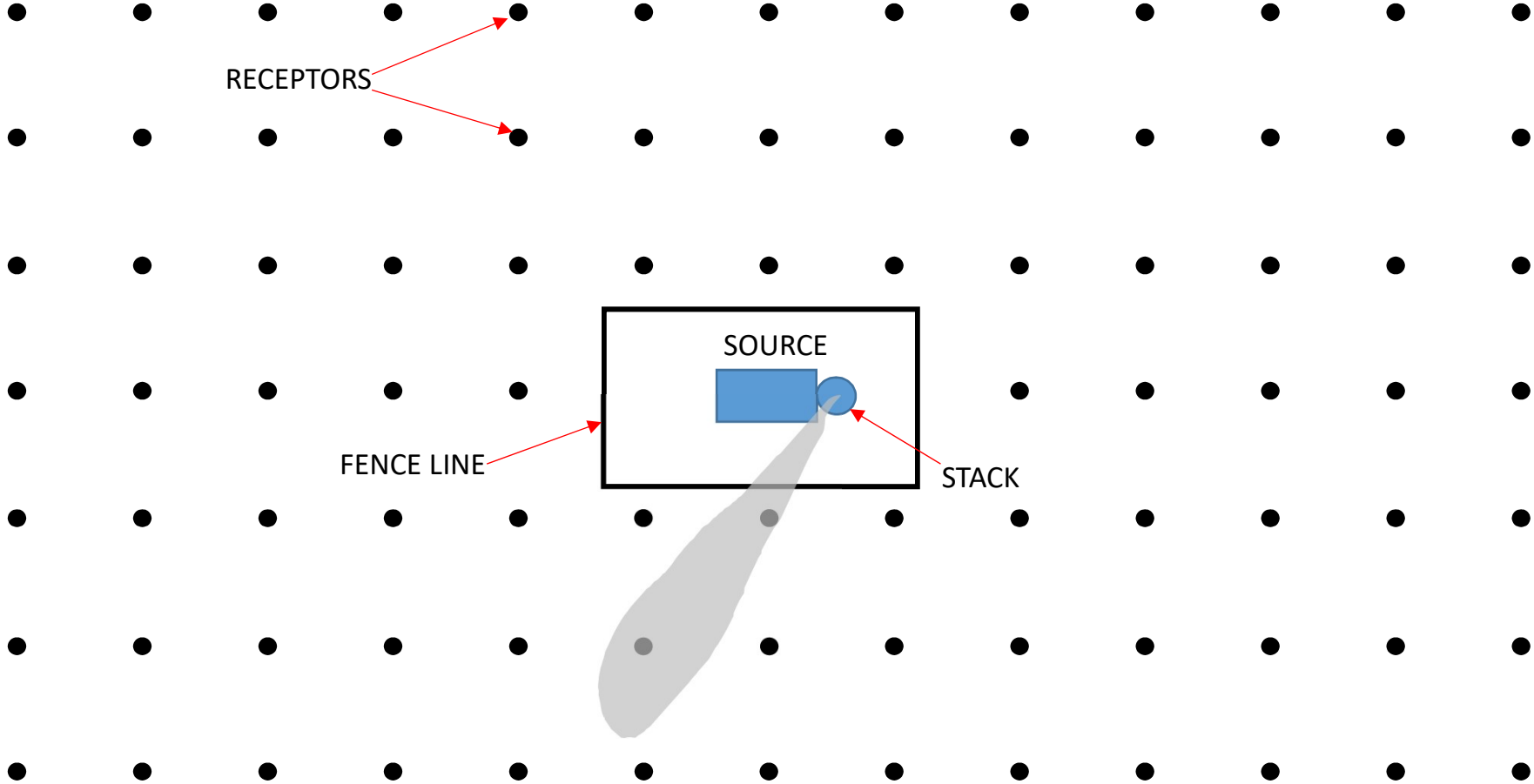

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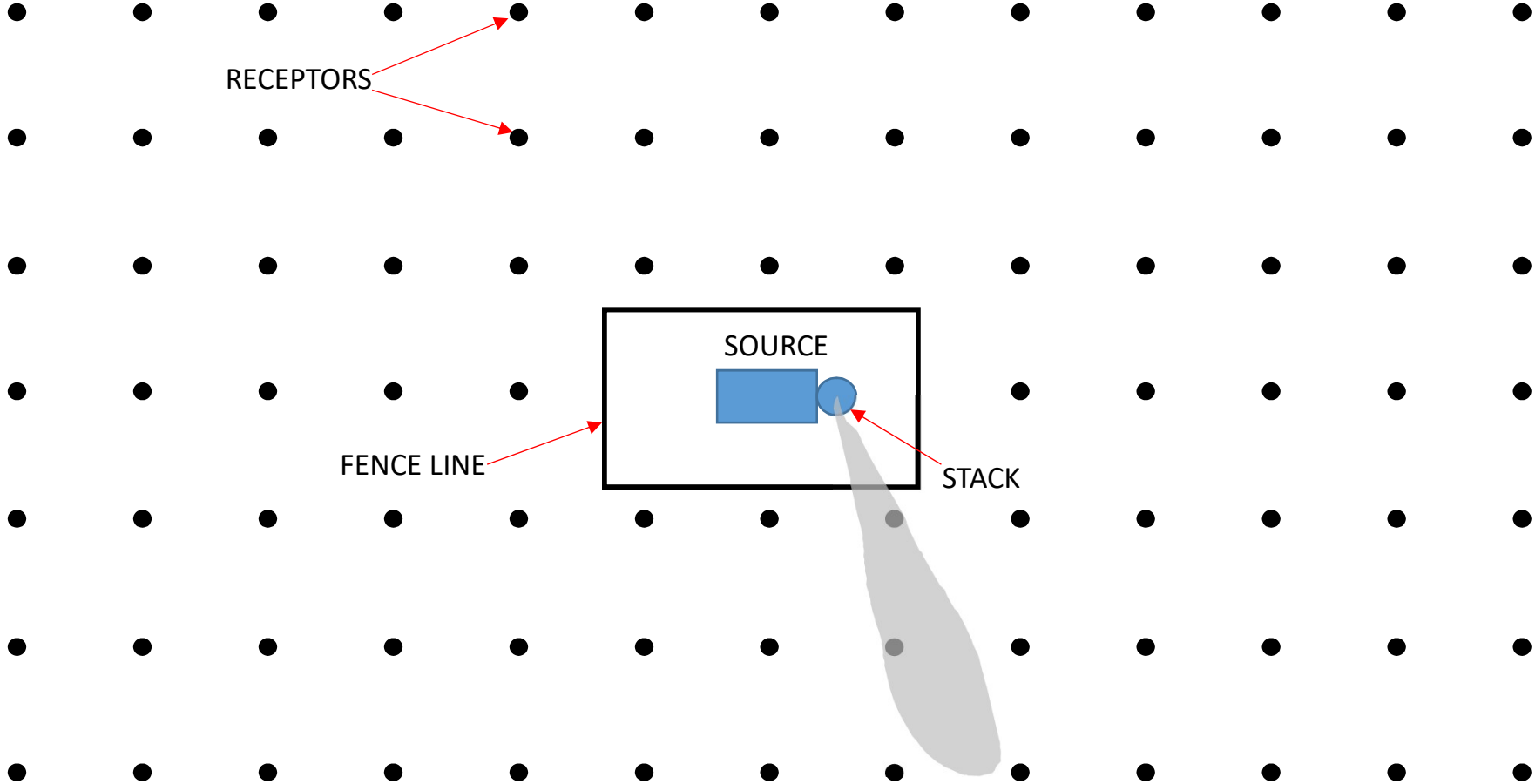

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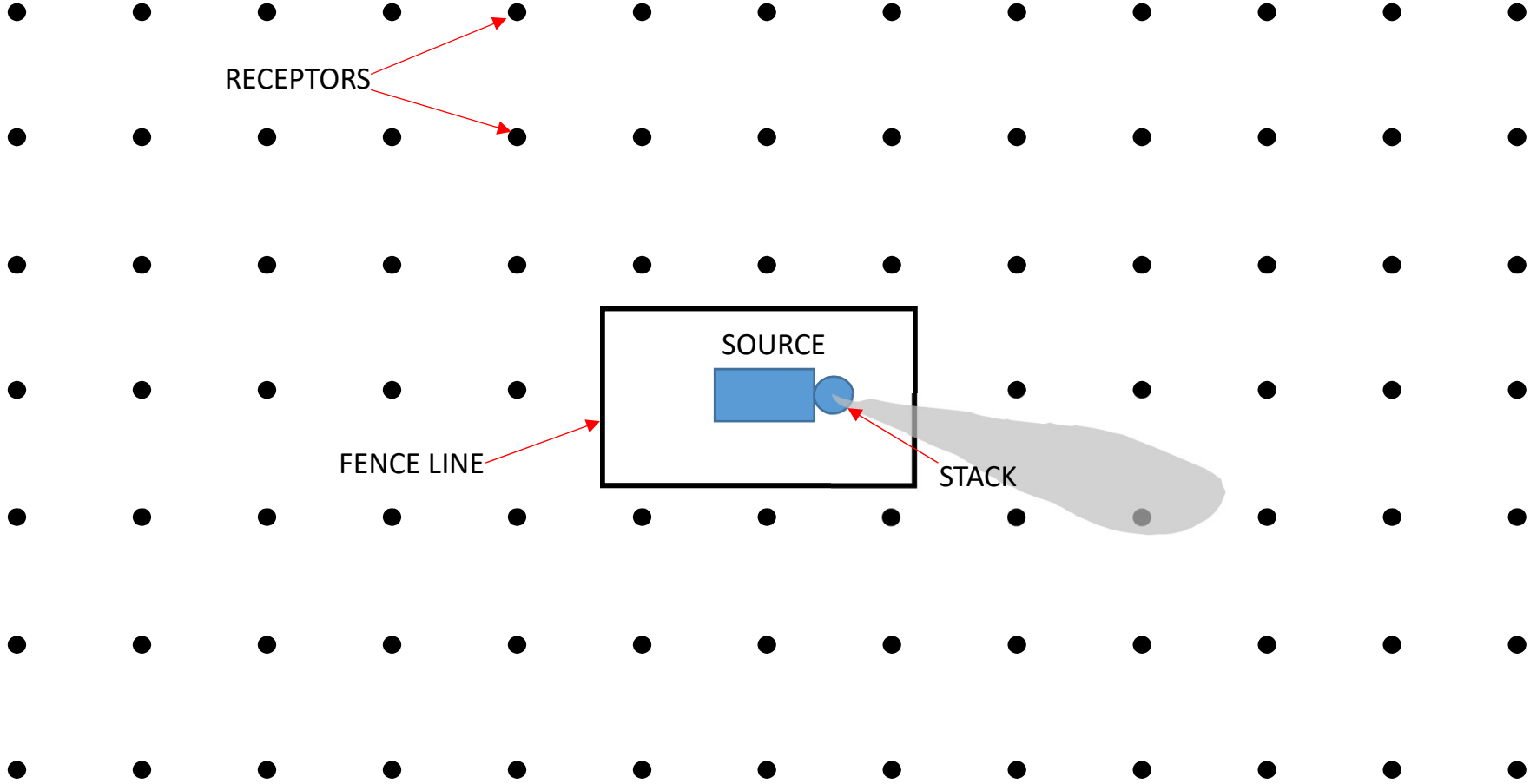

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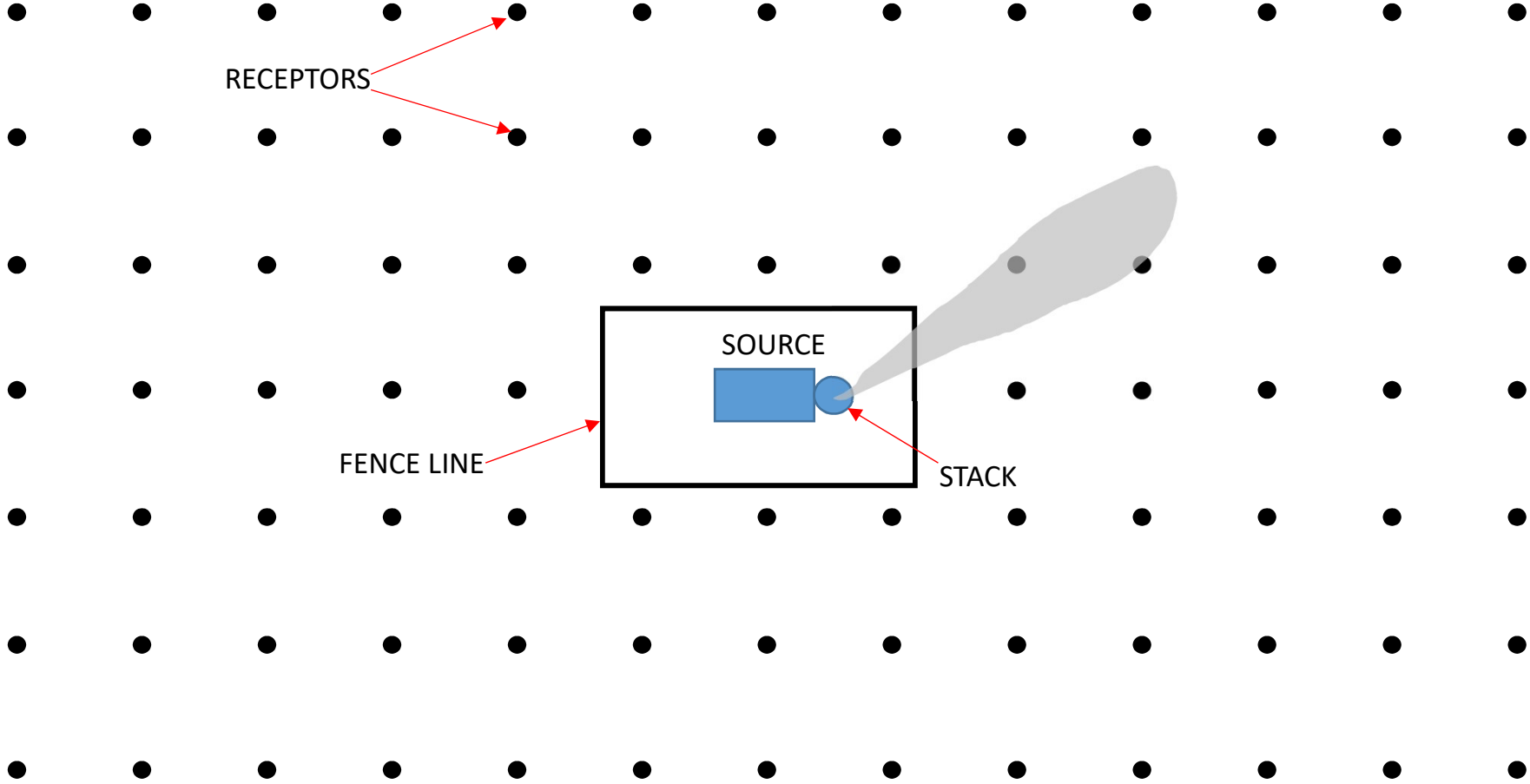

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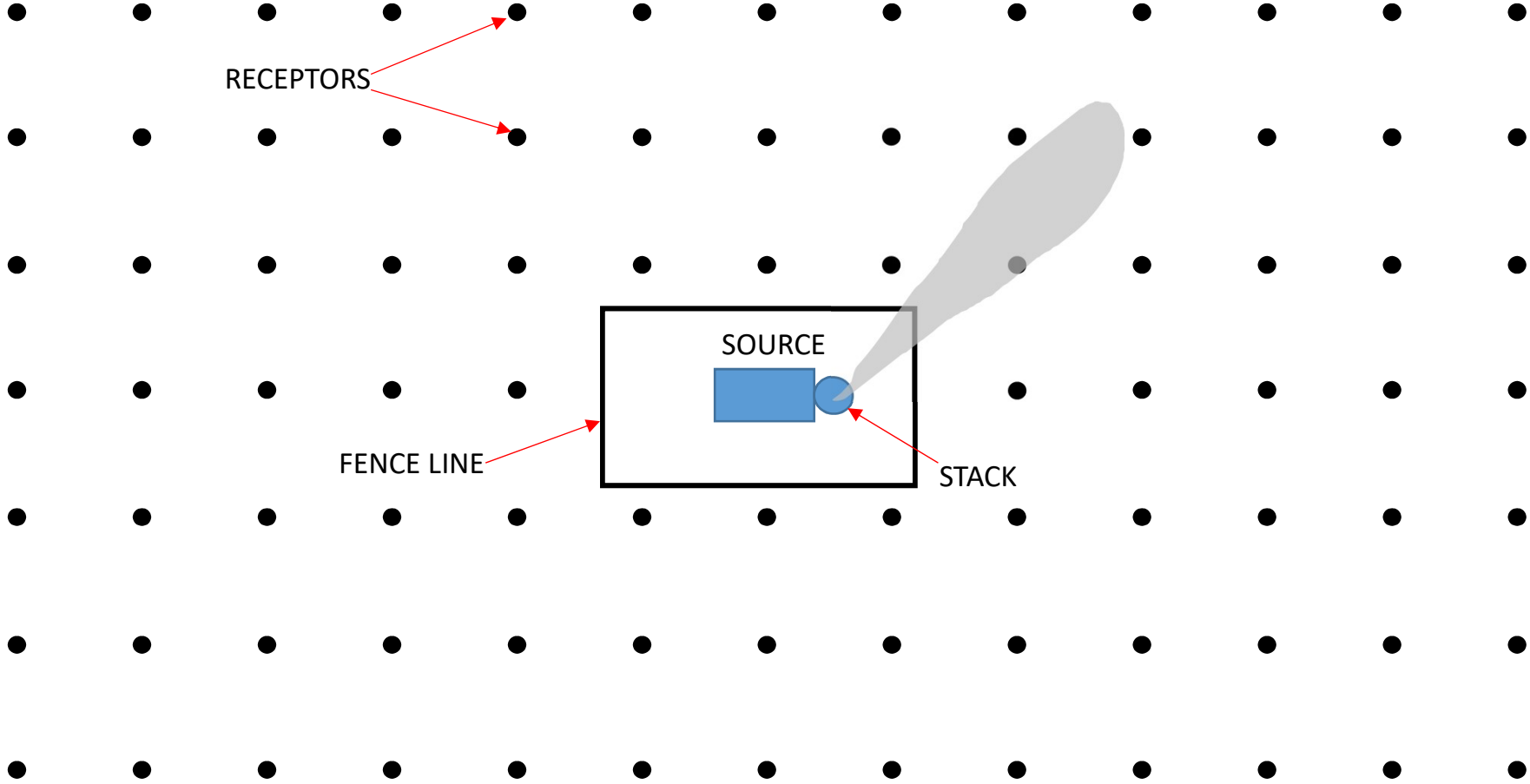

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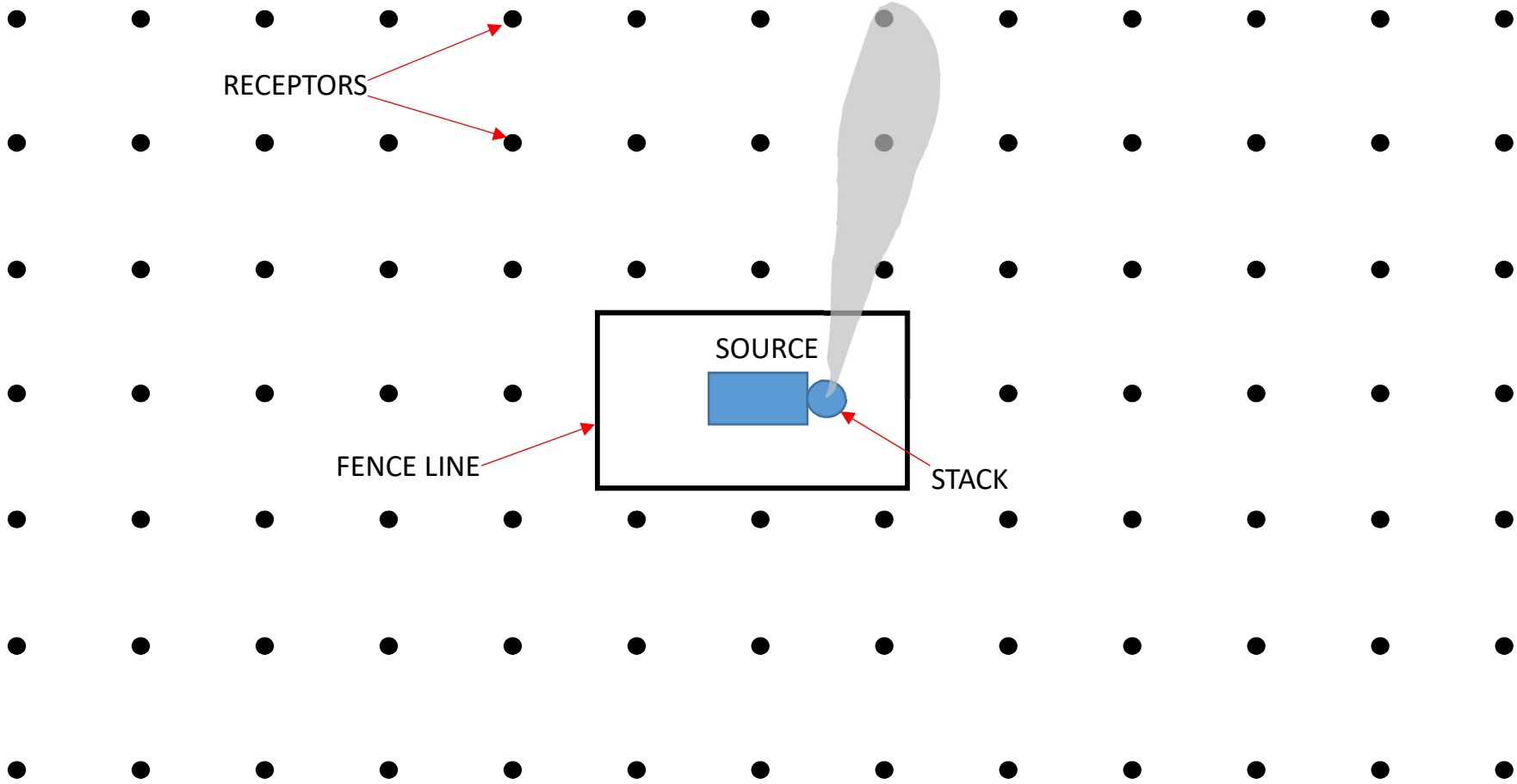

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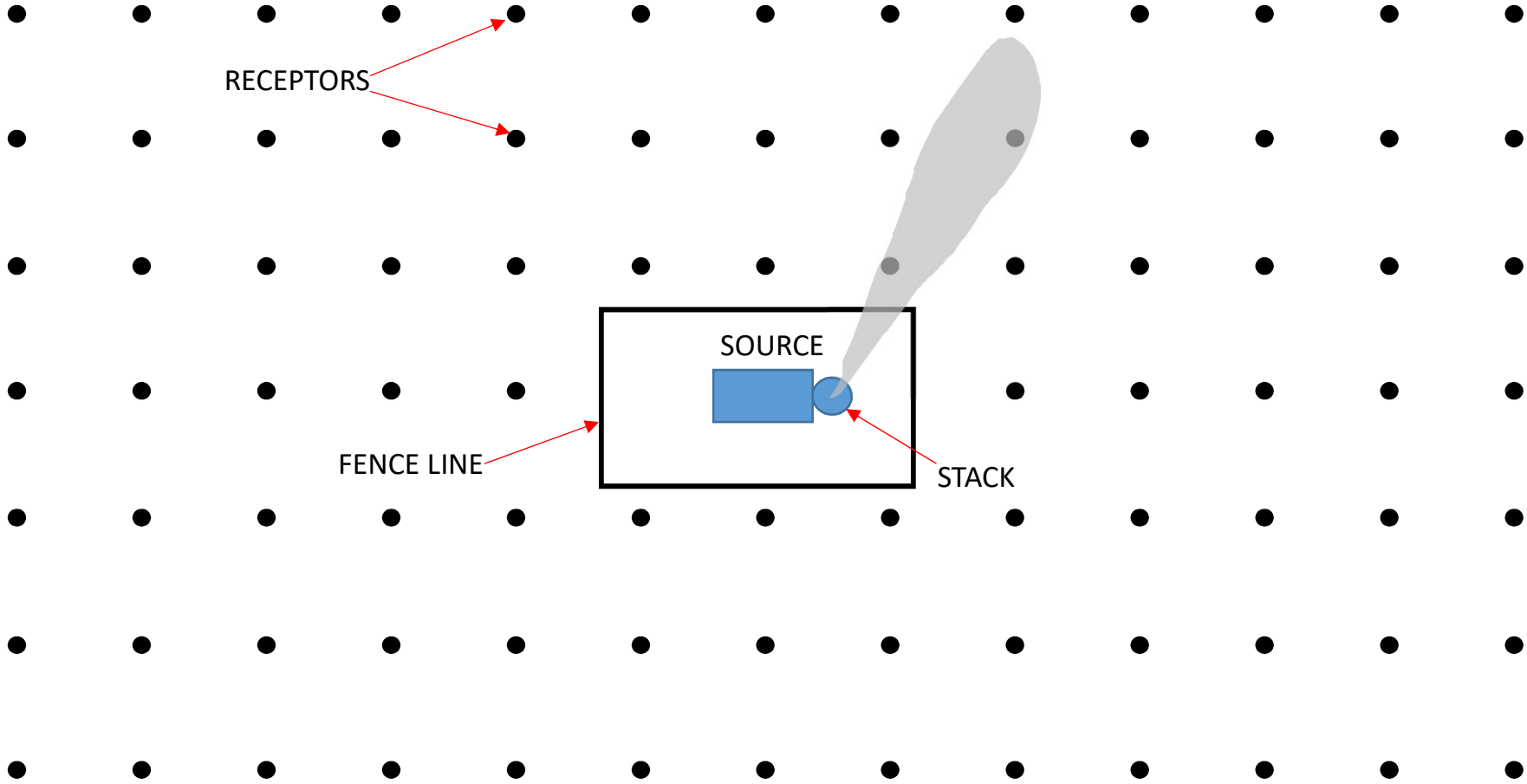

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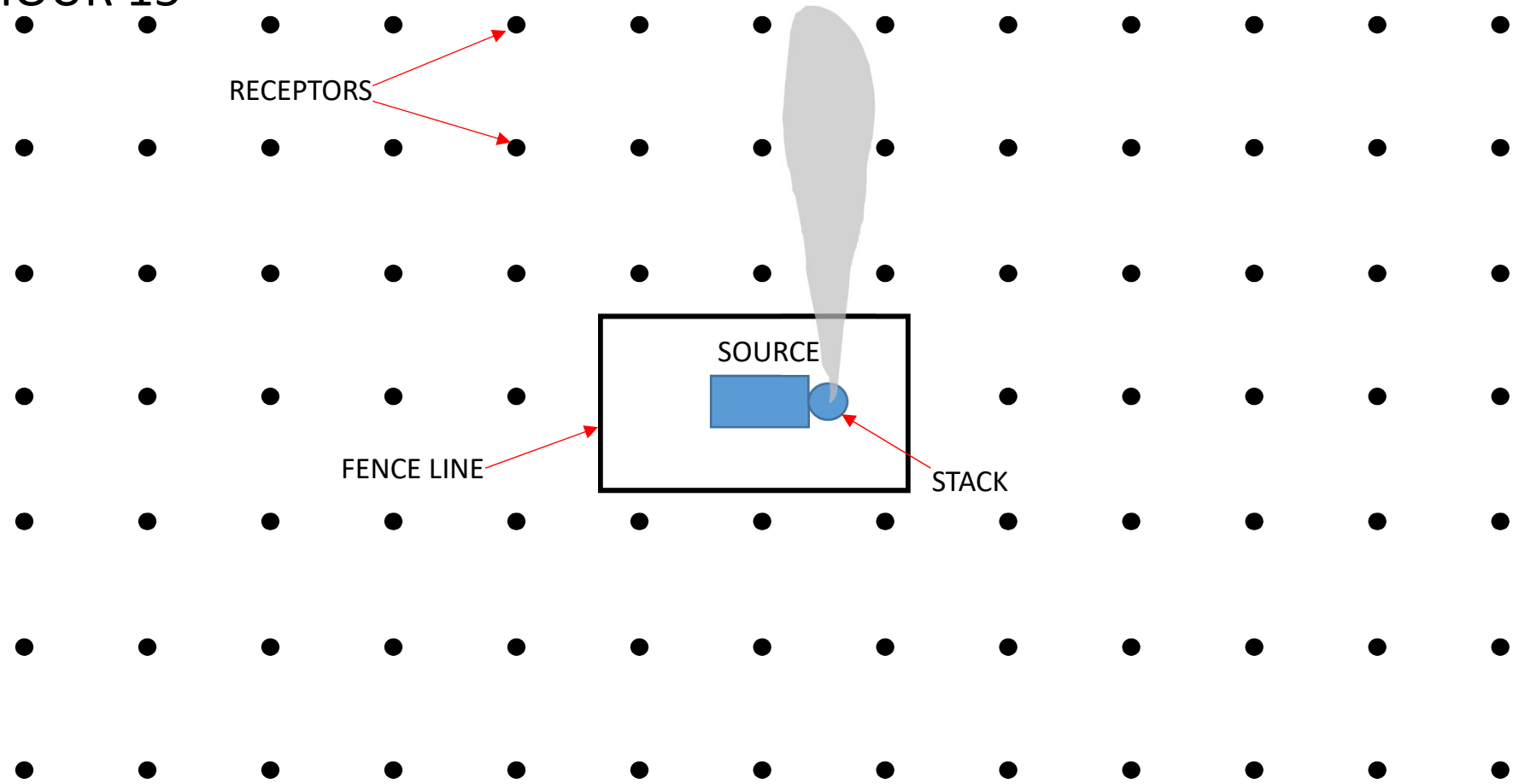

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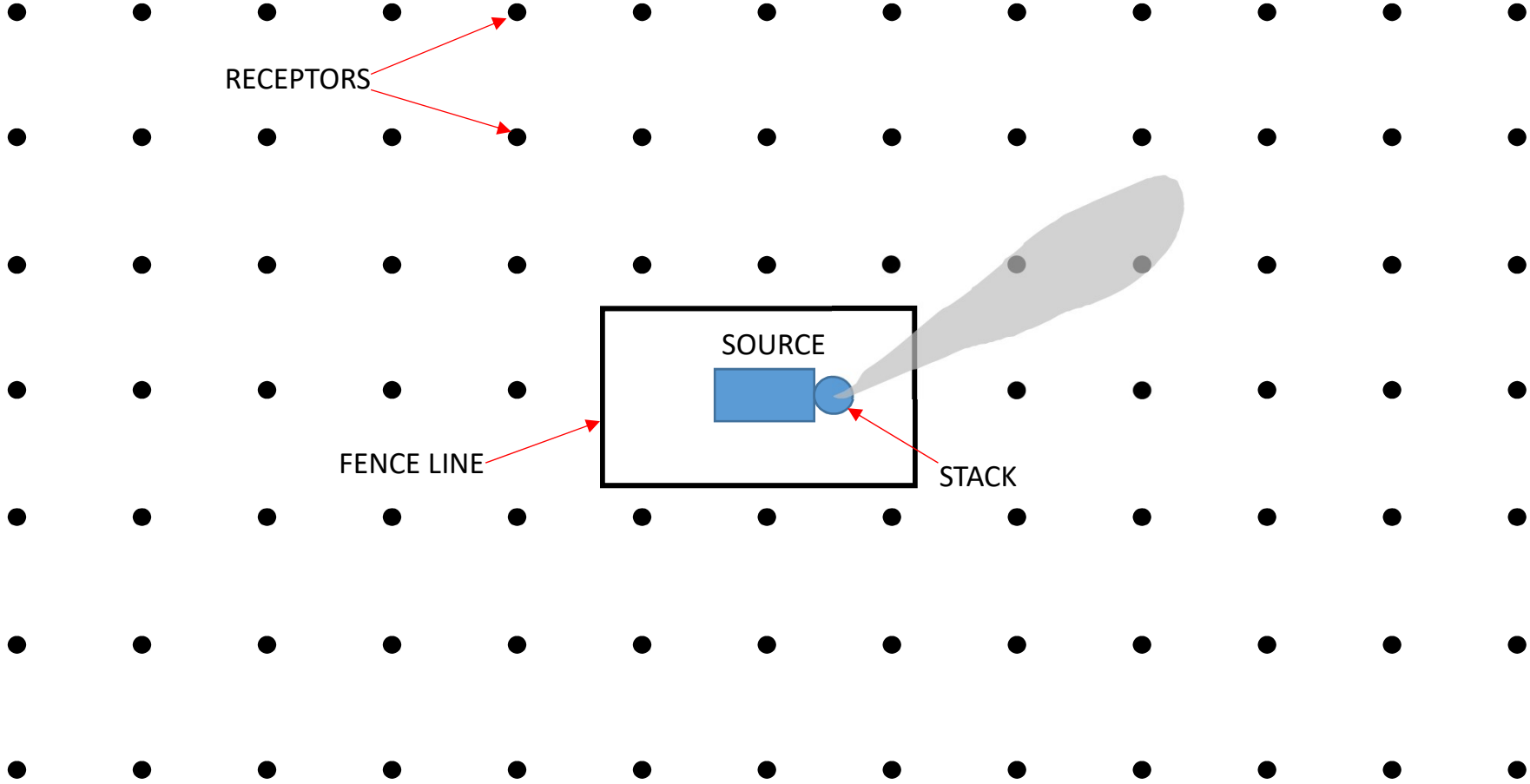

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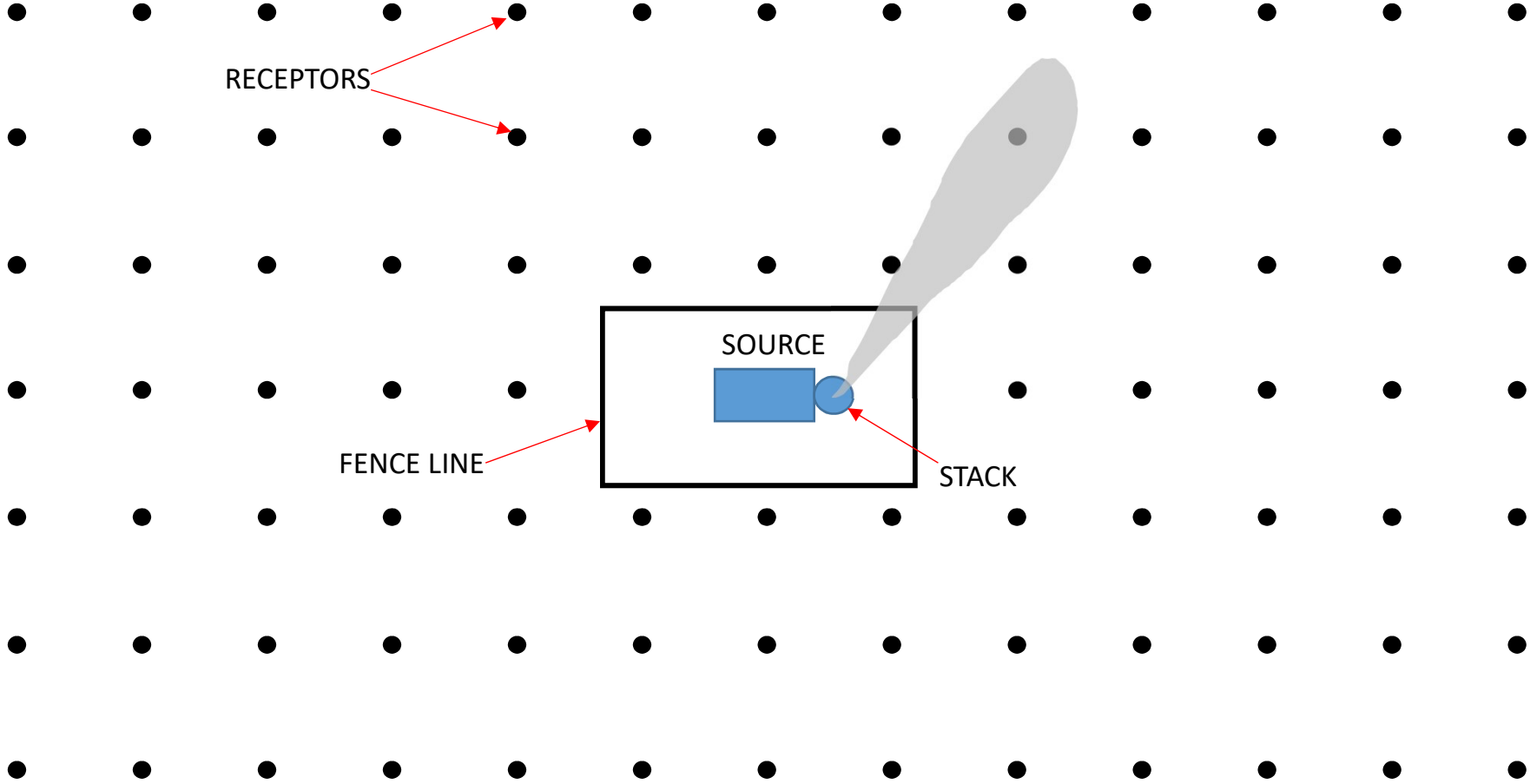

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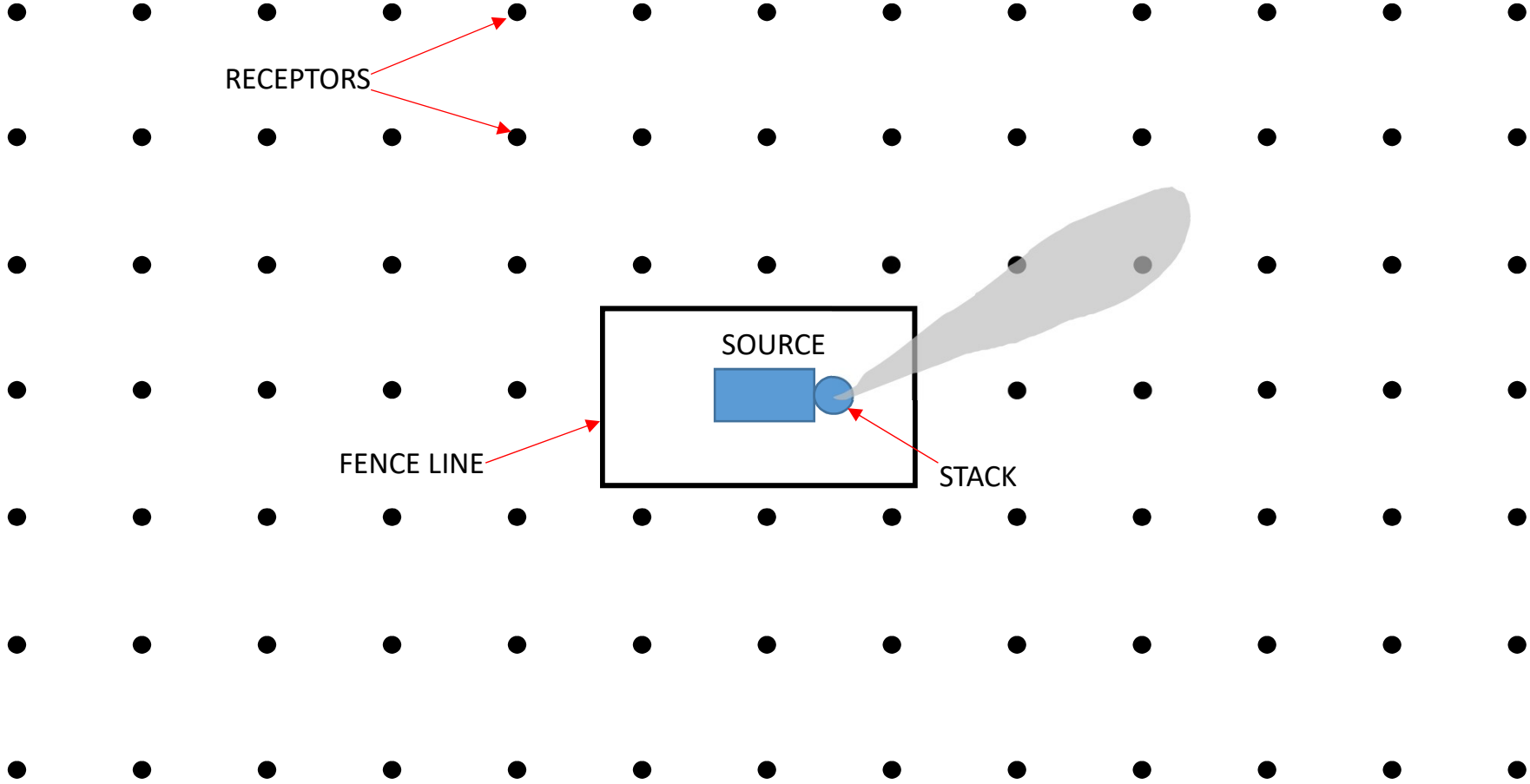

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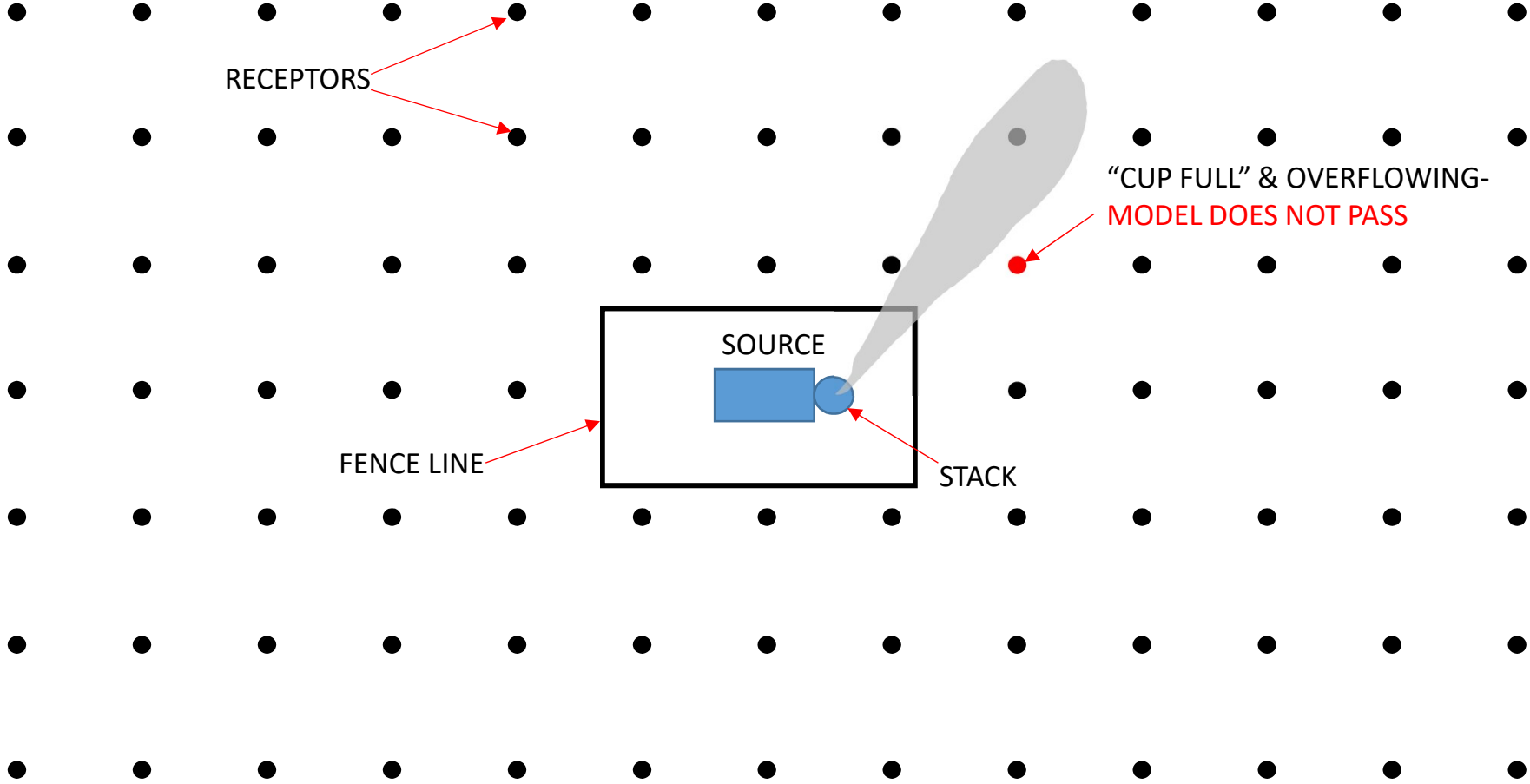
RECEPTORS
"CUP FULL" & OVERFLOWING-
MODEL DOES NOT PASS
SOURCE
FENCE LINE
STACK

Wrap Up

- Cumulative Impacts – Common Pollutants
  - Existing air pollution measured at monitors
  - Proposed air pollution
  - Near-by large near-by air pollution
  - Perfect storm maximizes air quality protection
- Approaches for common pollutants & hazardous air pollutants have been effective
- Further discussion of hazardous air pollutants is needed

QUESTIONS?