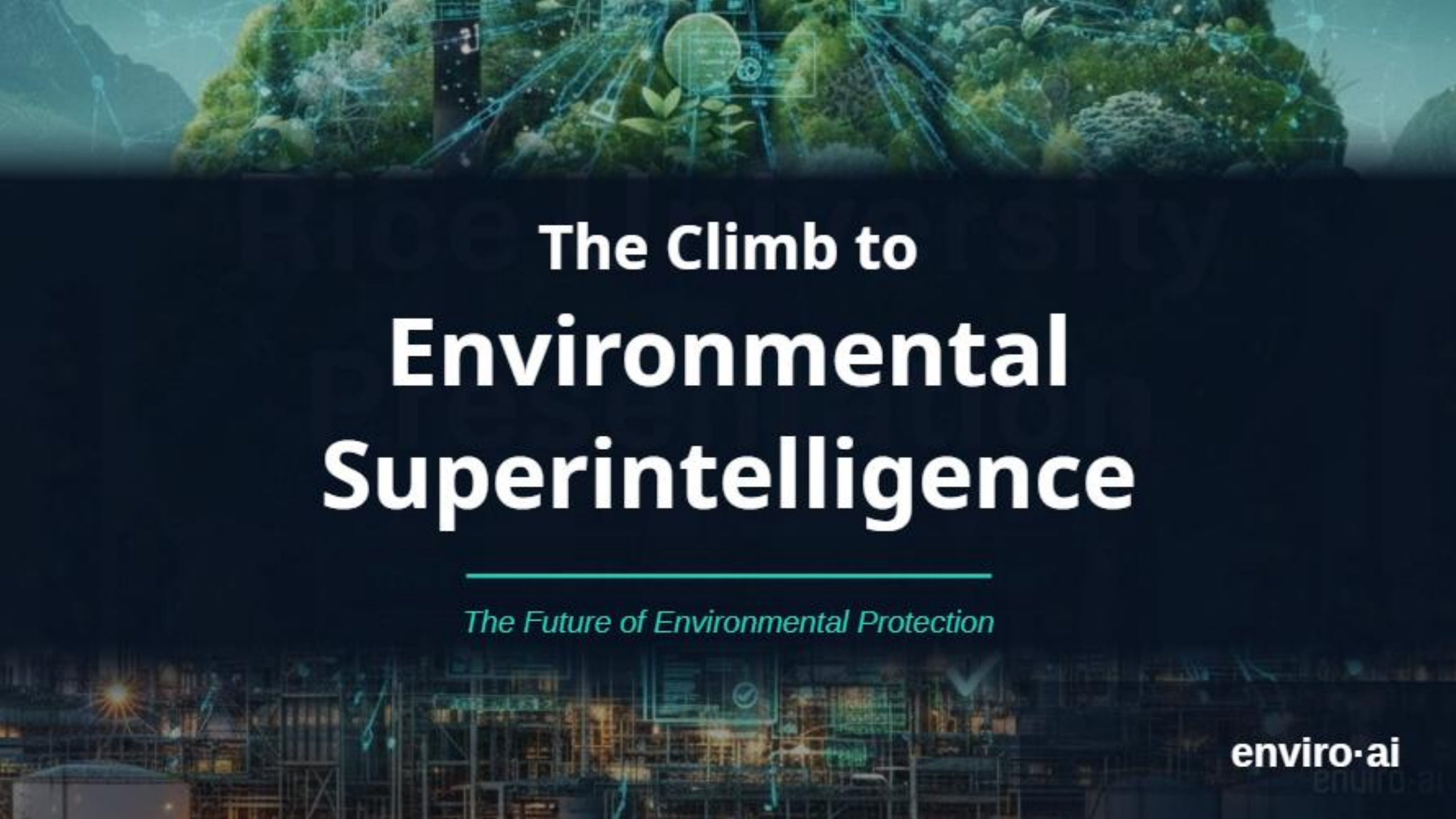

# The Climb to Environmental Superintelligence

*The Future of Environmental Protection*

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Environmental
Superintelligence
2045
Camp 2
1st Environmental ✓
Automation (Permits)
2025
Base Camp
1st Environmental
Chatbot
2022
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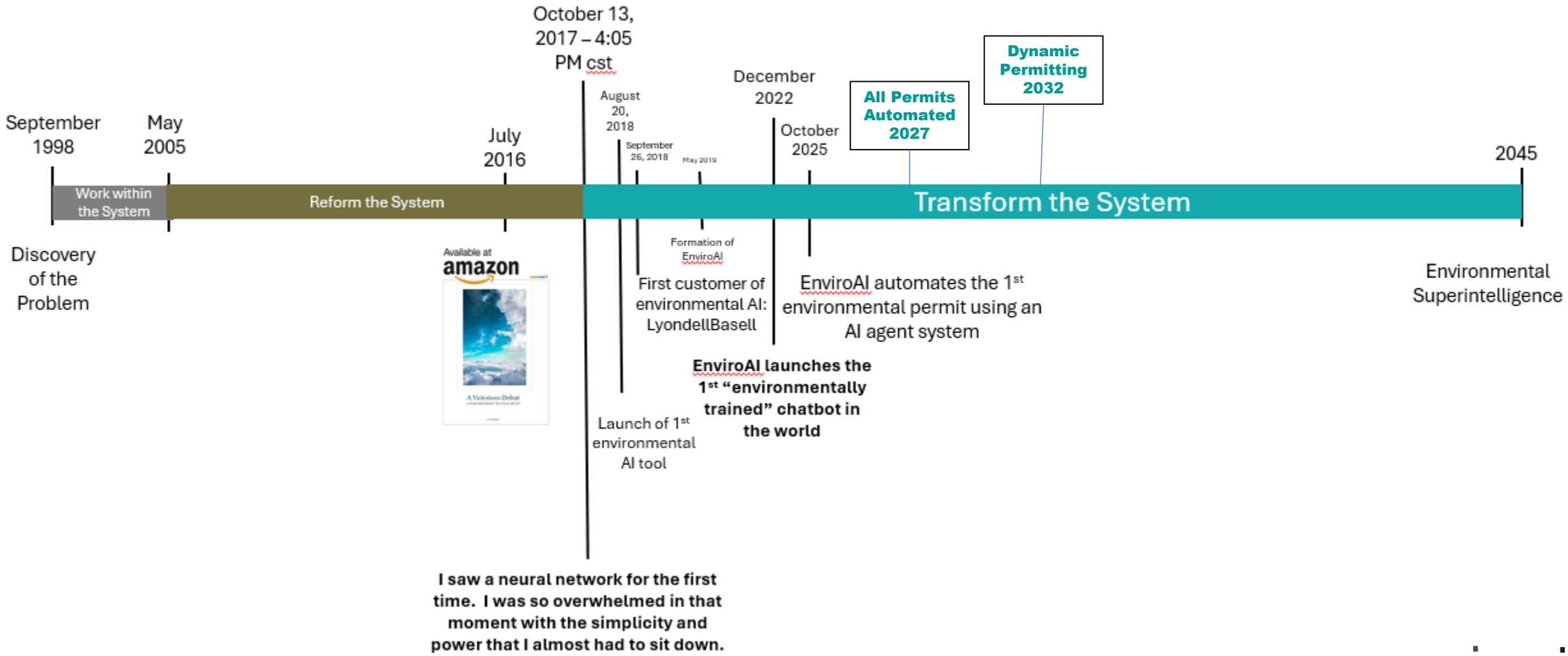
# DEVELOPMENT TIMELINE

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THE ENVIRONMENTAL INTELLIGENCE PLATFORM

# Texas Commission on Environmental Quality

## Welcome to the TCEQ Records Online

This application will allow you to search and view publicly available electronic records and information on many of the facilities regulated by the agency. To view publicly available hard copy records, select them and hit the request button to fill out the related request on the following page. A Central File Room representative will confirm receipt within the submission. Records which contain confidential information will require you Make a Public Information Request.

**Search Results** Potential items 1-20 of 3805

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Filter by Category: Item Type | Record Series | Security Group:Public | Assigned Location | Media:Electronic

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Page 1 of 100

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| Select | Content ID | Record Series | Primary ID | Secondary ID | Document Type | Title | Begin Date | End Date | Litigation Hold | Regulated Entity Name | Media | Description | Security G |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ☐ | 1272982 | AIR / Emissions Reduction Credit (ERC) | 100217918 | 57374 | Trades | Trades | 4/29/1998 12:00AM | 4/29/1998 12:00AM | No | BAYTOWN NITRIC ACID PLANT | Electronic | | Public |
| ☐ | 1278887 | AIR / Emissions Reduction Credit (ERC) | 100217918 | 89010 | Reports | Reports | 6/5/2002 12:00AM | 6/5/2002 12:00AM | No | BAYTOWN NITRIC ACID PLANT | Electronic | | Public |
| ☐ | 3556608 | AIR / Emissions Reduction Credit (ERC) | 100633650 | 413180 | Uses | Uses | 5/10/2018 12:00AM | | No | LYONDELL CHEMICAL CHANNELVIEW | Electronic | | Public |
| ☐ | 4654524 | AIR / Federal Operating Permit | 1043 | 27049 | Permits | Agency Review | 4/14/2015 12:00AM | 4/14/2015 12:00AM | No | HOUSTON TERMINAL | Electronic | | Public |
| ☐ | 4654526 | AIR / Federal Operating Permit | 1043 | 27049 | Permits | Site Operating Permit | 4/14/2015 12:00AM | 4/14/2015 12:00AM | No | HOUSTON TERMINAL | Electronic | | Public |
| ☐ | 4747839 | AIR / Federal Operating Permit | 1043 | 27049 | Permits | Site Operating Permit | 3/20/2020 12:00AM | 3/20/2020 12:00AM | No | | Electronic | SOP - O1043 Enterprise Products Operating LLC (Renewal, 27049) / Working Draft / Draft | Public |
| ☐ | 4747838 | AIR / Federal Operating Permit | 1043 | 27049 | Permits | Site Operating Permit | 3/20/2020 12:00AM | 3/20/2020 12:00AM | No | | Electronic | SOP - O1043 Enterprise Products Operating LLC (Renewal, 27049) / Working Draft / Draft / Effective Permit | Public |
| ☐ | 5611276 | AIR / Federal Operating Permit | 1043 | 30522 | Permits | Site Operating Permit | 4/22/2021 11:20AM | 4/22/2021 11:20AM | No | | Electronic | SOP - O1043 Enterprise Products Operating LLC (Minor, 30522)/ Draft | Public |
| ☐ | 5691084 | AIR / Federal Operating Permit | 1043 | 30522 | Permits | Site Operating Permit | 7/8/2021 7:10AM | 7/8/2021 7:10AM | No | | Electronic | SOP - O1043 Enterprise Products Operating LLC (Minor, 30522)/ Effective | Public |
| ☐ | 6386999 | AIR / Federal Operating Permit | 1043 | 32144 | Permits | Site Operating Permit | 12/22/2022 9:42AM | 12/22/2022 9:42AM | No | | Electronic | SOP - O1043 Enterprise Products Operating LLC (Minor, 32144)/Draft | Public |
| ☐ | 6455944 | AIR / Federal Operating Permit | 1043 | 32144 | Permits | Site Operating Permit | 2/20/2023 1:16PM | 2/20/2023 1:16PM | No | | Electronic | SOP - O1043 Enterprise Products Operating LLC (Minor, 32144)/Effective | Public |

scrubber circulation rate

Get Normal Search Results

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ALL-STATES | TCEQ | LDEQ | AR-DEQ

All | Images | Videos | News

About **14479** records

| Relevance Score | Entity Name | Type | Release Date | Category | Regulatory ID | File |
|---|---|---|---|---|---|---|
| 100% | Virdia B2X LLC - Raceland Plant | Enforcement | 2019-03-29 | Air Quality | LDEQ-193995 | |

Total Hours Out-of-Range 175.0 Emission Source Number **circulation rate** / Unknown cause of $2 /EQT 0002 Flow 25/201 3:17:40 maintenance work order **rate** cause **circulation rate** / Unknown cause of **rate** cause **circulation rate** / Unknown cause of Grevlation **rate** / Unknown cause of 11/9/201 8:1 valve to increase flow. **rate** cause CSG Project No. 198-429-035
Total Hours Out-of-Range 175.9 dreaation **rate** / **rate** cause circutation **rate** / cause **rate** / Unknown cause cause * CSG Project No. 193-429-035 Page 1 of 1 28/2019 > 4 comM@fANCE SOLUTIONS f? i ; i; 16851 Jefferson Hwy. Suite 6D Baton Rouge, LA 70817 March 29, 2019 CERTIFIED MAIL-RETURN RECEIPT REQUESTED 7018 0680 0000 0681 4791 Ms.
Totat Hours Out-of-Range T7.0 Numbers FEQT 0002 CSG Project No. 19-474-035 **Circulation rate** / Unknown cause cause of **circulation rate** / cause Unknown cause of **Circulation rate** cause fate / Unknown cause cause of Page 1 of 1 3/28/2019 ys NCE SOLUTIONS GROUP ipliance Solutions Group, LLC 1 Jefferson Highway, Suite 6D in Rouge, LA 70817 RETURN

| | | | | | | |
|---|---|---|---|---|---|---|
| 97.92% | 82-0003 | PES 82-0003-293, (Old PES 82-1004-58), MSOP-34, 40 CFR 63, Subparts F & G, Dated Dec-16-1998, supplants previous version, B-232-1 | 1998-12-18 | Notification of Compliance Status | TN-82-0003 | |

Caustic **Scrubber Circulation** Flow (Established Range: 650- 900 6PM) Discussion and Rationale for Range Selection: The **scrubber circulation** flow will always be maintained to obtain an L/V above the value of 15.5 6PM/KSCFM demonstrated in the 11/20/98 performance test at a constant **circulation** flow of 600 6PM.
The minimum **scrubber circulation** flow will be set at 650 GPM in order to account for worst case gas flow conditions and insure that the L/V is always above the minimum value up to the tested TPA/IPA production **rate**. The upper range is set at the maximum **circulation** capacity to circulate liquid through the **scrubber**.
The data of primary importance is xylene feed **rate** to the oxidizer, inlet and outlet temperatures for the catalytic oxidizer, and **scrubber** pH and **circulation** flow.

| | | | | | | |
|---|---|---|---|---|---|---|
| 97.89% | SASOL CHEMICALS USA GREENS BAYOU PLANT | CONSTOPPMT | 1995-06-16 | Air/NSRPermits (NSRP) | RN100214576 | PDF |

The caustic scrubbing solution of **Scrubber** S-25 shall operate with a 98 percent control efficiency. The **Scrubber** S-25 **circulation rate** shall be a minimum of 5.3 gallons per minute (GPM).
The caustic scrubbing solution of **Scrubber** S-190 shall operate with a 98 percent control efficiency. The **circulation rate** of **Scrubber** S-190 shall be a minimum of 5 GPM, and caustic shall pass once through the **scrubber**. Tanks T-190 and T-191 shall be directed to **Scrubber** S-190.
The caustic scrubbing solution of **Scrubber** S-260 shall operate with a 98 percent control efficiency. The **circulation rate** of **Scrubber** S-260 shall be a minimum of 4.5 GPM, and caustic shall pass once through the **scrubber**.

| | | | | | | |
|---|---|---|---|---|---|---|
| 97.87% | SASOL CHEMICALS USA GREENS BAYOU PLANT | CONSTRUCT | 1995-09-05 | Air/NSRPermits (NSRP) | RN100214576 | PDF |

The caustic scrubbing solution of **Scrubber** S-25 shall operate with a 98 percent control efficiency. The **Scrubber** S-25 **circulation rate** shall be a minimum of 5.3 gallons per minute (GPM).
The caustic scrubbing solution of **Scrubber** S-260 shall operate with a 98 percent control efficiency. The **circulation rate** of **Scrubber** S-260 shall be a minimum of 4.5 GPM, and caustic shall pass once through the **scrubber**.

# World's 1st environmental "brain" . . .

Large Language Models

+

10 Million+ Environmental Documents

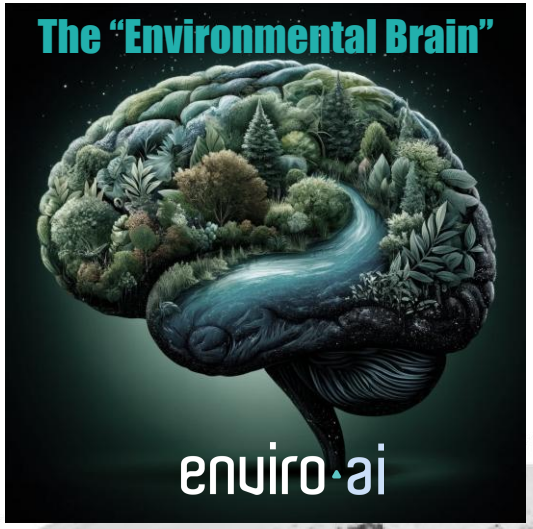
+

Internet

+

AI

=




New base models continually being launched, updated, and improved by various companies . . . and then swapped out into the "environmental brain"

New documents coming in every day

Access to all the real-time environmental information and knowledge stored on the internet

"Secret Sauce"

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Saved Chats

Search Chat...

20/01/2025

EXEMPTIONS & ALTERNATIVES: Please...

SWPPP REVIEW: Please read and review the...

ENVIRONMENTAL AUDIT: Perform an environmenta...

19/10/2024

new flares regulation TCEQ LDEQ environmental...

08/10/2024

tceq.

Flares TCEQ LDEQ environmental regulation...

06/10/2024

Flares TCEQ LDEQ environmental regulation...

03/10/2024

Flares TCEQ LDEQ environmental regulation...

RMP REVIEW: Please review

Tetra Tech SWPPP For Asarco.Pdf
Application/Pdf

SWPPP REVIEW: Please read and review the attached Stormwater Pollution Prevention Plan. Once this review is complete, please review all other SWPPP's that have ever been written. Third, please review the attached SWPPP with regard to all laws, rules, guidance, and any other legal requirements that must be fulfilled. Fourth, COME UP WITH POTENTIALLY NOVEL AND NEW control strategies, environmental management techniques, or other ways to potentially improve this SWPPP plan but only those ideas that are readily available, decrease costs, improve environmental performance, and increase the overall operational and financial performance of the facility. Do not provide summaries of your review, but use these reviews you've performed to perform the following task. Please provide specific suggestions on how the attached plan could be improved to help ensure a successful plan and ensure compliance with all laws and regulations . . . and how it could be improved based on other plans and submittals for similar facilities that are being successfully implemented with little to no compliance and enforcement problems and with as much efficiency and the least cost and greatest environmental performance. Thank you.

20/01/2025 12:52

**EnviroAI Model Response #1 - OpenAI Base-Model**

**Comprehensive Evaluation and Enhancement of the Stormwater Pollution Prevention Plan (SWPPP) for ASARCO Zinc Smelter Site**

**1. Introduction**

**EnviroAI Model Response #2 - Gemini Base-Model**

**Comprehensive Review and Enhancement of the ASARCO Zinc Smelter Site SWPPP**

This comprehensive review analyzes the provided draft Stormwater Pollution Prevention Plan (SWPPP) for the ASARCO Zinc Smelter Site in Columbus, Ohio, focusing on compliance,

**EnviroAI Model Response #3 - Anthropic Base-Model**

Upon reviewing the Stormwater Pollution Prevention Plan (SWPPP) for the ASARCO Zinc Smelter Site and comparing it with other successful SWPPPs, several areas for improvement and enhancement have been identified. This comprehensive analysis aims to provide specific, cost-effective

Agency Documents | Internet Results | Facilities Maps | Print | Update | Delete

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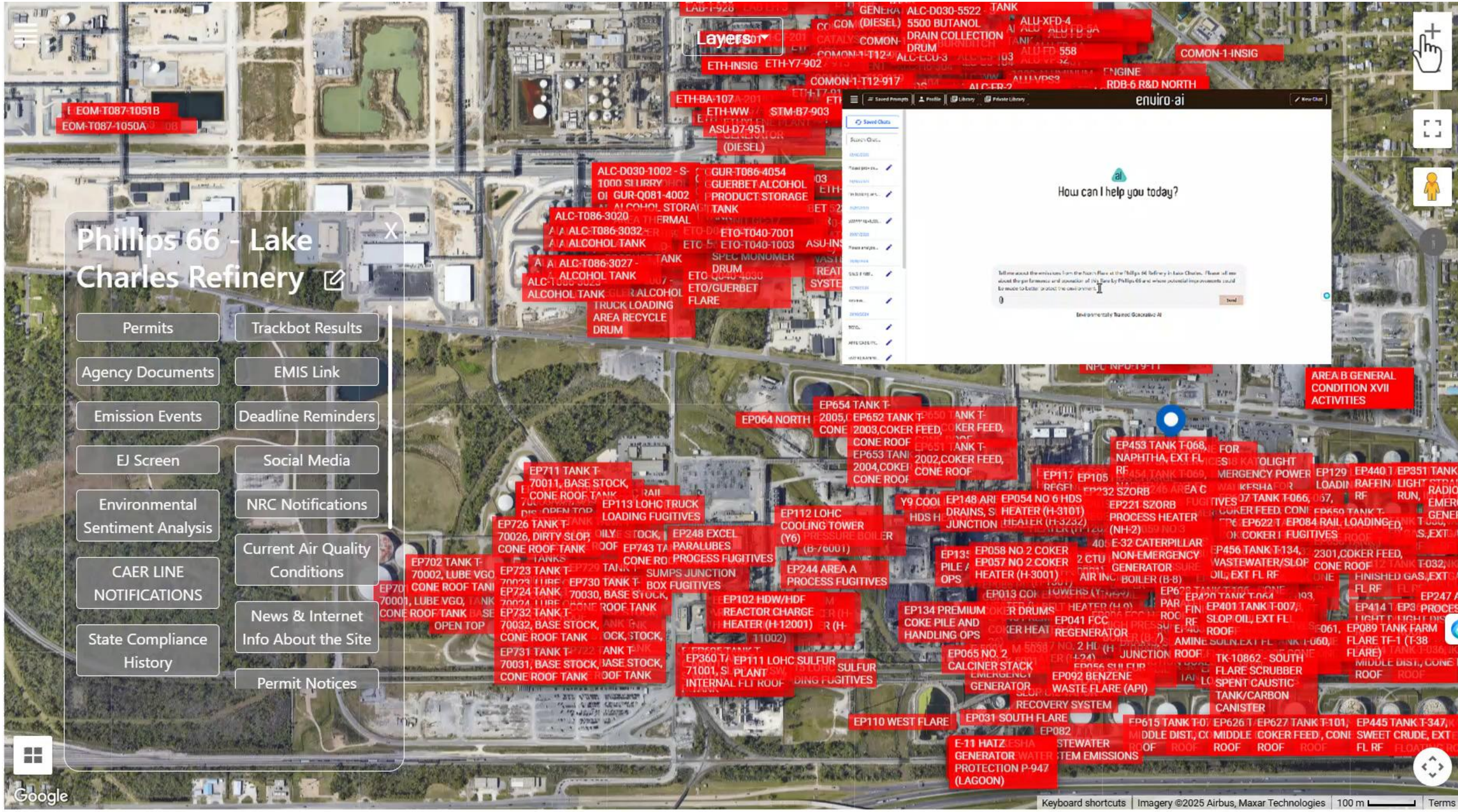
Layers
Phillips 66 - Lake Charles Refinery
Permits
Trackbot Results
Agency Documents
EMIS Link
Emission Events
Deadline Reminders
EJ Screen
Social Media
Environmental Sentiment Analysis
NRC Notifications
CAER LINE NOTIFICATIONS
Current Air Quality Conditions
State Compliance History
News & Internet Info About the Site
Permit Notices
enviro-ai
How can I help you today?
EOM-T087-1051B
EOM-T087-1050A
ETH-INSIG
ETH-Y7-902
COMON-1-INSIG
ENGINE RDB-6 R&D NORTH
ETH-BA-107
ETH-WW
STM-B7-903
ASU-D7-951
ALC-D030-1002 - S-1000 SLURRY
GUR-Q081-4002
GUR-T086-4054 GUERBET ALCOHOL PRODUCT STORAGE TANK
ALC-T086-3020
ALC-T086-3032 ALCOHOL TANK
ETO-T040-7001
ETO-T040-1003 SPEC MONOMER DRUM
ALC-T086-3027 - ALCOHOL TANK
ETO/GUERBET FLARE
TRUCK LOADING AREA RECYCLE DRUM
AREA B GENERAL CONDITION XVII ACTIVITIES
EP064 NORTH
EP654 TANK T-2005,
EP652 TANK T-2003,COKER FEED, CONE ROOF
EP653 TANK T-2004,COKER FEED, CONE ROOF
EP651 TANK T-2002,COKER FEED, CONE ROOF
EP453 TANK T-068, NAPHTHA, EXT FL RF
EP711 TANK T-70011, BASE STOCK, CONE ROOF TANK
EP113 LOHC TRUCK LOADING FUGITIVES
EP726 TANK T-70026, DIRTY SLOP, CONE ROOF TANK
EP248 EXCEL PARALUBES PROCESS FUGITIVES
EP112 LOHC COOLING TOWER (Y6)
EP148 ARE DRAINS, S JUNCTION
EP054 NO 6 HDS HEATER (H-3101)
EP221 SZORB PROCESS HEATER (NH-2)
EP702 TANK T-70002, LUBE VGO CONE ROOF TANK
EP723 TANK T-70023, LUBE VGO, CONE ROOF TANK
EP724 TANK T-70024, LUBE VGO, CONE ROOF TANK
EP730 TANK T-70030, BASE STOCK, CONE ROOF TANK
EP732 TANK T-70032, BASE STOCK, CONE ROOF TANK
EP731 TANK T-70031, BASE STOCK, CONE ROOF TANK
EP743 TANK T- CONE ROOF TANK
SUMPS JUNCTION BOX FUGITIVES
EP244 AREA A PROCESS FUGITIVES
EP058 NO 2 COKER EP057 NO 2 COKER HEATER (H-3001)
EP102 HDW/HDF REACTOR CHARGE HEATER (H-12001)
EP134 PREMIUM COKE PILE AND HANDLING OPS
EP041 FCC REGENERATOR
EP065 NO. 2 CALCINER STACK
EP092 BENZENE WASTE FLARE (API)
EP360 TANK T-71001, SLOP
EP111 LOHC SULFUR PLANT
INTERNAL FLT ROOF
SULFUR
DING FUGITIVES
EP110 WEST FLARE
EP031 SOUTH FLARE
EP082
E-11 HATZ GENERATOR PROTECTION P-947 (LAGOON)
EP615 TANK T-07
EP626 T
EP627 TANK T-101,
EP445 TANK T-347, SWEET CRUDE, EXT FL RF
EP456 TANK T-134, WASTEWATER/SLOP OIL, EXT FL RF
EP084 RAIL LOADING FUGITIVES
EP622 T
COKER FEED, CONE ROOF
2301,COKER FEED, CONE ROOF
EP401 TANK T-007, SLOP OIL, EXT FL ROOF
EP089 TANK FARM FLARE TF-1 (T-38 FLARE)
TK-10862 - SOUTH FLARE SCRUBBER SPENT CAUSTIC TANK/CARBON CANISTER
EP440 T
EP351 TANK
EP129 LOADIN
EP247 A
EP414 T
EP3
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Keyboard shortcuts
Imagery ©2025 Airbus, Maxar Technologies
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Superintelligence
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1st Environmental ✓
Automation (Permits)
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Base Camp
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Chatbot
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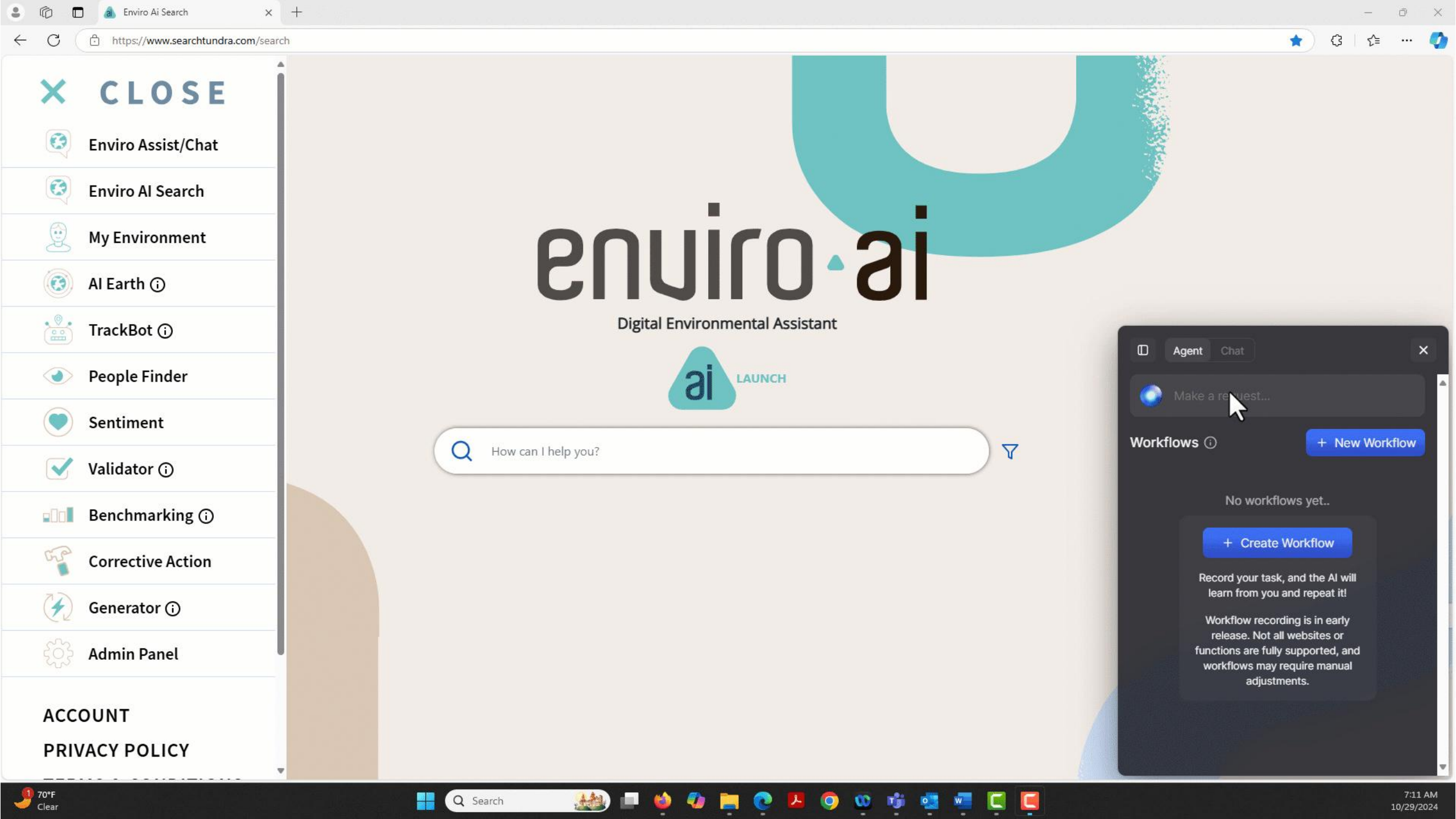
Enviro Ai Search
https://www.searchtundra.com/search
CLOSE
Enviro Assist/Chat
Enviro AI Search
My Environment
AI Earth
TrackBot
People Finder
Sentiment
Validator
Benchmarking
Corrective Action
Generator
Admin Panel
ACCOUNT
PRIVACY POLICY
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Digital Environmental Assistant
ai
LAUNCH
How can I help you?
Agent
Chat
Make a request...
Workflows
+ New Workflow
No workflows yet..
+ Create Workflow
Record your task, and the AI will learn from you and repeat it!
Workflow recording is in early release. Not all websites or functions are fully supported, and workflows may require manual adjustments.
70°F
Clear
Search
7:11 AM
10/29/2024

Enviro Ai Search

https://www.searchtundra.com/enviro-agent

Copilot

Invite a friend

Get a Permit

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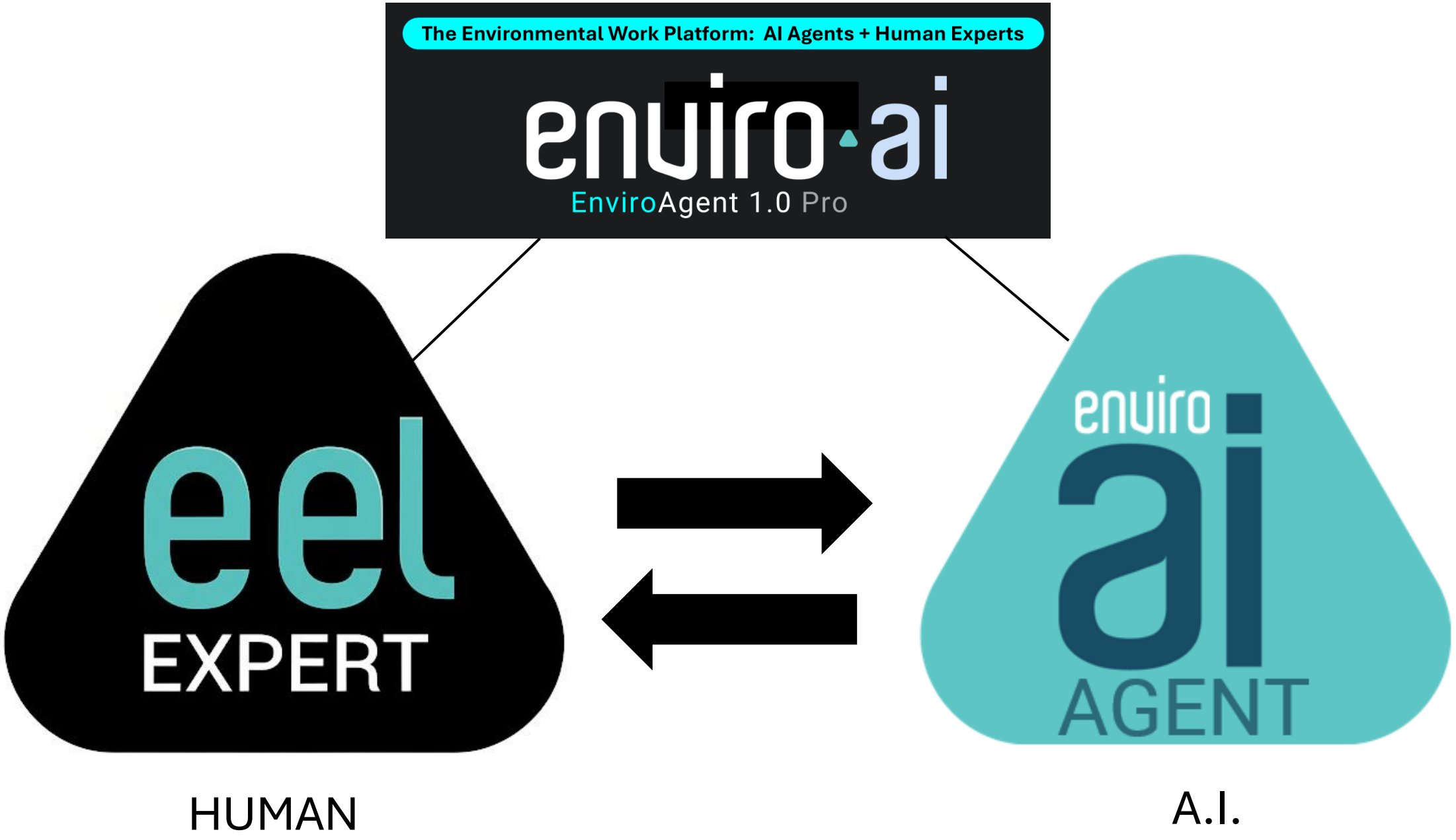
EnviroAgent pro 1.0

Ask Enviro Agent

Rainy days ahead
83°F

Search

11:48 AM
11/18/2025


The Environmental Work Platform: AI Agents + Human Experts
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EnviroAgent 1.0 Pro
eel
EXPERT
enviro
ai
AGENT
HUMAN
A.I.

Enviro Ai Search

https://www.searchtundra.com/search

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Digital Environmental Assistant

ai LAUNCH

How can I help you?

46°F
Sunny

Search

1:23 PM
1/27/2026

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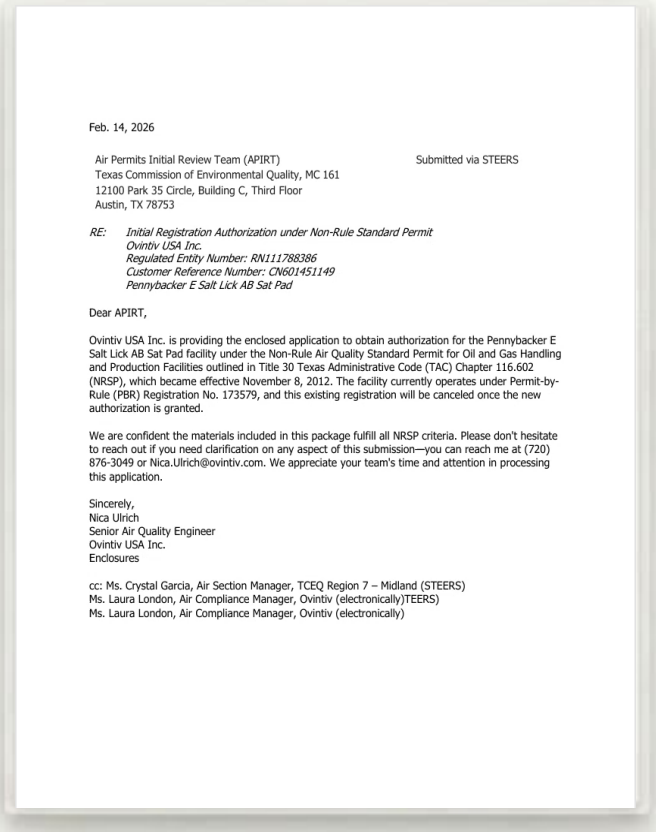
# Automated Air Permitting for Oil & Gas

Texas Standard Permit Registrations.
Minutes, Not Weeks.



Feb. 14, 2026

Air Permits Initial Review Team (APIRT)
Texas Commission of Environmental Quality, MC 161
12100 Park 35 Circle, Building C, Third Floor
Austin, TX 78753

Submitted via STEERS

*RE: Initial Registration Authorization under Non-Rule Standard Permit*
*Ovintiv USA Inc.*
*Regulated Entity Number: RN111788386*
*Customer Reference Number: CN601451149*
*Pennybacker E Salt Lick AB Sat Pad*

Dear APIRT,

Ovintiv USA Inc. is providing the enclosed application to obtain authorization for the Pennybacker E Salt Lick AB Sat Pad facility under the Non-Rule Air Quality Standard Permit for Oil and Gas Handling and Production Facilities outlined in Title 30 Texas Administrative Code (TAC) Chapter 116.602 (NRSP), which became effective November 8, 2012. The facility currently operates under Permit-by-Rule (PBR) Registration No. 173579, and this existing registration will be canceled once the new authorization is granted.

We are confident the materials included in this package fulfill all NRSP criteria. Please don't hesitate to reach out if you need clarification on any aspect of this submission—you can reach me at (720) 876-3049 or Nica.Ulrich@ovintiv.com. We appreciate your team's time and attention in processing this application.

Sincerely,
Nica Ulrich
Senior Air Quality Engineer
Ovintiv USA Inc.
Enclosures

cc: Ms. Crystal Garcia, Air Section Manager, TCEQ Region 7 – Midland (STEERS)
Ms. Laura London, Air Compliance Manager, Ovintiv (electronically)TEERS)
Ms. Laura London, Air Compliance Manager, Ovintiv (electronically)

# This permit was written by AI.

Can you tell?

# TCEQ PBRs to Automate

§ 106.102. Comfort Heating
§ 106.122. Bench Scale Laboratory Equipment
§ 106.124. Pilot Plants
§ 106.141. Batch Mixers
§ 106.143. Wet Sand and Gravel Production
§ 106.144. Bulk Mineral Handling
§ 106.145. Bulk Sand Handling
§ 106.146. Soil Stabilization Plants
§ 106.148. Material Unloading
§ 106.149. Sand and Gravel Processing
§ 106.150. Asphalt Silos
§ 106.161. Animal Feeding Operations
§ 106.162. Livestock Auction Facilities
§ 106.163. Race Tracks, Zoos, and Animal Shelters
§ 106.181. Used-Oil Combustion Units
§ 106.182. Ceramic Kilns
§ 106.183. Boilers, Heaters, and Other Combustion Devices
§ 106.221. Extrusion Presses
§ 106.224. Aerospace Equipment and Parts Manufacturing
§ 106.225. Semiconductor Manufacturing
§ 106.226. Paints, Varnishes, Ink, and Other Coating Manufacturing
§ 106.227. Soldering, Brazing, Welding
§ 106.229. Textile Dyeing and Stripping Equipment
§ 106.231. Manufacturing, Refinishing, and Restoring Wood Products
§ 106.241. Slaughterhouses
§ 106.242. Food Preparation
§ 106.243. Smokehouses
§ 106.244. Ovens, Barbecue Pits, and Cookers
§ 106.245. Ethyl Alcohol Facilities
§ 106.261. Facilities (Emission Limitations)
§ 106.262. Facilities (Emission and Distance Limitations)
§ 106.263. Routine Maintenance, Start-up and Shutdown of Facilities, and Temporary Maintenance Facilities
§ 106.264. Replacements of Facilities
§ 106.265. Hand-held and Manually Operated Machines
§ 106.266. Vacuum Cleaning Systems
§ 106.281. Feed Milling
§ 106.283. Grain Handling, Storage, and Drying
§ 106.301. Aqueous Fertilizer Storage
§ 106.311. Crucible or Pot Furnace
§ 106.313. Tumblers for Cleaning or Deburring Metal
§ 106.314. Shell Core and Mold Machines
§ 106.315. Sand or Investment Molds
§ 106.316. Metal Inspection
§ 106.317. Miscellaneous Metal Equipment
§ 106.318. Die Casting Machines
§ 106.319. Foundry Sand Mold Forming Equipment
§ 106.320. Miscellaneous Metallic Treatment
§ 106.321. Metal Melting and Holding Furnaces
§ 106.322. Furnaces To Reclaim Aluminum or Copper
§ 106.331. Cosmetics Packaging and Pharmaceutical Packaging and Coating
§ 106.332. Chlorine Repackaging
§ 106.333. Water-based Adhesive Mixers
§ 106.351. Salt Water Disposal (Petroleum)
§ 106.352. Oil and Gas Handling and Production Facilities
§ 106.353. Temporary Oil and Gas Facilities
§ 106.354. Iron Sponge Gas Treating Unit
§ 106.355. Pipeline Metering, Purging, and Maintenance
§ 106.359. Planned Maintenance, Startup, and Shutdown (MSS) at Oil and Gas Handling and Production Facilities
§ 106.371. Cooling Water Units
§ 106.372. Industrial Gases
§ 106.373. Refrigeration Systems
§ 106.374. Lime Slaking Facilities
§ 106.375. Aqueous Solutions for Electrolytic and Electroless Processes
§ 106.376. Decorative Chrome Plating
§ 106.391. Rubber and Plastic Curing Presses
§ 106.392. Thermoset Resin Facilities
§ 106.393. Conveyance and Storage of Plastic and Rubber Material
§ 106.394. Plastic Compression and Injection Molding
§ 106.395. Equipment for Mixing Plastic and Rubber (No Solvent)
§ 106.396. Equipment for Mixing Plastic and Rubber (With Solvent)
§ 106.411. Steam or Dry Cleaning Equipment
§ 106.412. Fuel Dispensing
§ 106.414. Packaging Lubes and Greases
§ 106.415. Laundry Dryers
§ 106.416. Uranium Recovery Facilities
§ 106.417. Ethylene Oxide Sterilizers
§ 106.418. Printing Presses
§ 106.419. Photographic Process Equipment
§ 106.431. Milling and Grinding of Coatings and Molding Compounds
§ 106.432. Dipping Tanks and Containers
§ 106.433. Surface Coat Facility
§ 106.434. Powder Coating Facility
§ 106.435. Classic or Antique Automobile Restoration Facility
§ 106.436. Auto Body Refinishing Facility
§ 106.451. Wet Blast Cleaning
§ 106.452. Dry Abrasive Cleaning
§ 106.453. Washing and Drying of Glass and Metal (Previously SE 42)
§ 106.454. Degreasing Units
§ 106.471. Storage or Holding of Dry Natural Gas
§ 106.472. Organic and Inorganic Liquid Loading and Unloading
§ 106.473. Organic Liquid Loading and Unloading
§ 106.474. Hydrochloric Acid Storage
§ 106.475. Pressurized Tanks or Tanks Vented to a Firebox
§ 106.476. Pressurized Tanks or Tanks Vented to Control
§ 106.477. Anhydrous Ammonia Storage
§ 106.478. Storage Tank and Change of Service
§ 106.491. Dual-Chamber Incinerators
§ 106.492. Flares
§ 106.494. Non-commercial Incinerators and Crematories
§ 106.495. Heat Cleaning Devices
§ 106.496. Air Curtain Incinerators
§ 106.511. Portable and Emergency Engines and Turbines
§ 106.512. Stationary Engines and Turbines
§ 106.513. Natural Gas-Fired Combined Heat and Power Units
§ 106.531. Sewage Treatment Facility
§ 106.532. Water and Wastewater Treatment
§ 106.533. Remediation
§ 106.534. Municipal Solid Waste Landfills and Transfer Stations

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# TCEQ Standard Permits to Automate

- Air Quality Standard Permit for Air Quality Pollution Control Projects
- Air Quality Standard Permit for Anhydrous Ammonia Storage and Distribution Operations
- Air Quality Standard Permit for Animal Carcass Incinerators
- Air Quality Standard Permit for Boilers
- Air Quality Standard Permit for Concrete Batch Plants with Enhanced Controls
- Air Quality Standard Permit for Cotton Gin Facilities and Cotton Burr Tub Grinders
- Air Quality Standard Permit for Dry Bulk Fertilizer Handling Operations
- Air Quality Standard Permit for Electric Generating Units
- Air Quality Standard Permit for Natural Gas Electric Generating Units
- Air Quality Standard Permit for Feedmills, Portable Augers, and Hay Grinders.
- Air Quality Standard Permit for Grain Elevator/Grain Handling Operations and Portable Grain Augers
- Air Quality Standard Permit for Marine Loading Operations
- Air Quality Standard Permit for Municipal Solid Waste Landfills
- Air Quality Standard Permit for Oil and Gas Handling and Production Facilities
- Air Quality Standard Permit for Peanut-Handling Operations
- Use this information to claim the Air Quality Standard Permit for Peanut-Handling Operations.
- Air Quality Standard Permit for Permanent Hot Mix Asphalt Plants
- Air Quality Standard Permit for Permanent Rock and Concrete Crushers
- Air Quality Standard Permit for Sawmills
- Air Quality Standard Permit for Temporary Hot Mix Asphalt Plants
- Air Quality Standard Permit for Temporary Public Works Projects
- Air Quality Standard Permit for Temporary Rock and Concrete Crushers
- Air Quality Standard Permit for Temporary and Permanent Polyphosphate Blenders
- Standard Permit for Concrete Batch Plants

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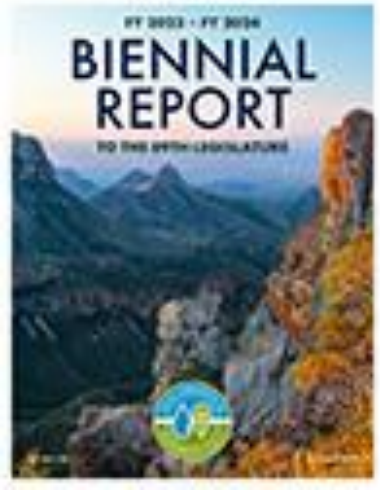
# Other TCEQ Authorizations to Automate

- NSR permits
- PSD permits
- Title V permits
- Amendents
- Renewals
- Authorizations for other media (water, waste, soils)




PROCESSING TIMES FOR PERMITS, REVIEWS, AND AUTHORIZATIONS

**Table B-1.** Air Permits (Uncontested) Processing Times

| Application Type | Received in FY 23 & FY 24 | Processed in FY 23 & FY 24 | Exceeding Target as of 8/31/24 | Minimum Processing Time (Days) | Maximum Processing Time (Days) | Average Processing Time (Days) | Target Maximum (Days) |
|---|---|---|---|---|---|---|---|
| **Priority 1** | | | | | | | |
| New Source Review (NSR) New Permits | 174 | 211 | 14 | 34 | 464 | 241 | 285 |
| NSR Amendments | 628 | 571 | 47 | 3 | 2568 | 243 | 315 |
| NSR New Permits – Federal Timeline | 15 | 10 | 0 | 18 | 364 | 258 | 365 |
| NSR Amendments – Federal Timeline | 35 | 36 | 0 | 120 | 969 | 370 | 365 |
| Federal NSR (Prevention Significant Deterioration, Nonattainment, 112(g) New & Major Modifications | 81 | 72 | 1 | 18 | 1940 | 347 | 365 |
| PBRs | 7,900 | 7,920 | 0 | 1 | 140 | 12 | 45 |
| Standard Permits (without public notice), Changes to Qualified Facilities (SB1126) & Relocations | 5,100 | 5,099 | 0 | 1 | 305 | 9 | 45 |
| Standard Permits (with public notice) | 498 | 460 | 5 | 2 | 305 | 112 | 150 |
| **Priority 1 Totals** | **14,431** | **14,379** | **67** | | | | |
| **Priority 2** | | | | | | | |
| NSR Alterations & Other Changes | 504 | 515 | 1 | 4 | 1501 | 75 | 120 |
| NSR Renewals | 753 | 656 | 34 | 14 | 2,568 | 172 | 270 |
| New Site Operating Permits (SOP) | 134 | 52 | 10 | 237 | 868 | 376 | 365 |
| SOP Revisions | 293 | 320 | 17 | 1 | 1,534 | 269 | 365 |
| SOP Renewals | 398 | 288 | 45 | 82 | 2949 | 397 | 365 |
| New General Operating Permits (GOP) | 94 | 72 | 0 | 61 | 241 | 127 | 120 |
| GOP Revisions | 168 | 140 | 0 | 2 | 706 | 125 | 330 |
| GOP Renewals | 92 | 96 | 2 | 28 | 312 | 153 | 210 |
| **Priority 2 Totals** | **2,436** | **2,139** | **109** | | | | |
| **Overall Totals** | **16,867** | **16,518** | **176** | | | | |

**Table B-2.** Waste Permits (Uncontested) Processing Times

| Application Type | Received in FY 23 & FY 24 | Processed in FY 23 & FY 24 | Exceeding Target as of 8/31/24 | Minimum Processing Time (Days) | Maximum Processing Time (Days) | Average Processing Time (Days) | Target Maximum (Days) |
|---|---|---|---|---|---|---|---|
| **Priority 1** | | | | | | | |
| Industrial and Hazardous Waste (IHW) New Permits | 4 | 4 | 0 | 388 | 629 | 509 | 450 |
| IHW Class 3 Modifications | 8 | 9 | 0 | 141 | 416 | 287 | 450 |
| IHW Major Amendments | 0 | 0 | 0 | N/A | N/A | N/A | 450 |
| Municipal Solid Waste (MSW) New Permits | 17 | 21 | 0 | 43 | 513 | 231 | 360 |
| MSW Major Amendments | 22 | 25 | 1 | 15 | 461 | 197 | 360 |
| MSW Registered Transfer Stations | 4 | 5 | 0 | 126 | 231 | 176 | 230 |
| MSW Registered Liquid Waste Processor | 0 | 1 | 0 | NA | NA | NA | 230 |
| **Priority 1 Totals** | **55** | **65** | **1** | | | | |
| **Priority 2** | | | | | | | |
| IHW Renewals | 40 | 32 | 0 | 209 | 437 | 326 | 450 |
| **Priority 2 Totals** | **40** | **32** | **0** | | | | |
| **Overall Totals** | **95** | **97** | **1** | | | | |

TCEQ processed to a final decision 45 IHW and 52 MSW authorizations.
The average processing time for these applications ranged from 176 to 509 days.
In addition to the targeted initiatives to streamline applications and reduce review times, the Office of Waste continues to resolve minor issues and minor application deficiencies through phone calls and emails, improving the overall time frame for reviews.

**Table B-3.** Water Quality Permits (Uncontested) Processing Times

| Application Type | Received in FY 23 & FY 24 | Processed in FY 23 & FY 24 | Exceeding Target as of 8/31/24 | Minimum Processing Time (Days) | Maximum Processing Time (Days) | Average Processing Time (Days) | Target Maximum (Days) |
|---|---|---|---|---|---|---|---|
| **Priority 1** | | | | | | | |
| New Permits (Major Facilities) | 0 | 0 | - | - | - | - | 170 |
| Major Amendments (Major Facilities) | 78 | 33 | 29 | 40 | 557 | 168 | 170 |
| New Permits (Minor Facilities) | 285 | 164 | 81 | 59 | 701 | 155 | 170 |
| Major Amendments (Minor Facilities) | 185 | 88 | 46 | 35 | 443 | 141 | 170 |
| Sludge Registrations | 17 | 13 | 0 | 45 | 184 | 134 | 170 |
| **Priority 1 Totals** | **565** | **298** | **156** | | | | |
| **Priority 2** | | | | | | | |
| Renewal Major Facilities | 208 | 88 | 111 | 67 | 461 | 132 | 170 |
| Renewal Minor Facilities | 870 | 602 | 171 | 45 | 638 | 133 | 170 |
| **Priority 2 Totals** | **1078** | **690** | **282** | | | | |
| **Overall Totals** | **1643** | **988** | **438** | | | | |

75 | BIENNIAL REPORT FY 2023-FY 2024

**Table B-4.** Water Rights Permits (Uncontested) Processing Times

| Application Type | Received in FY 23 & FY 24 | Processed in FY 23 & FY 24 | Exceeding Target as of 8/31/24 | Minimum Processing Time (Days) | Maximum Processing Time (Days) | Average Processing Time (Days) | Target Maximum (Days) |
|---|---|---|---|---|---|---|---|
| **Priority 1** | | | | | | | |
| Water Rights Applications (excluding Fast Track and House Bill (HB) 1964) | 36 | 54 | 62 | 42 | 3526 | 731 | 300 |
| Fast Track | 76 | 85 | 12 | 7 | 2,342 | 192 | 300 |
| HB 1964 | 19 | 18 | 0 | 23 | 153 | 73 | 90 |
| **Priority 1 Totals** | **131** | **157** | **74** | | | | |

**Table B-5.** Water Supply Reviews/Authorizations Processing Times

| Application Type | Received in FY 23 & FY 24 | Processed in FY 23 & FY 24 | Exceeding Target as of 8/31/24 | Minimum Processing Time (Days) | Maximum Processing Time (Days) | Average Processing Time (Days) | Target Maximum (Days) |
|---|---|---|---|---|---|---|---|
| **Priority 1** | | | | | | | |
| Water District Expedited Bond Applications | 562 | 507 | 22 | 1 | 125 | 71 | 60 |
| Water District Regular Bond Applications | 259 | 305 | 5 | 1 | 357 | 168 | 180 |
| Water District Expedited Excess Releases & Surplus Fund Requests | 107 | 96 | 0 | 2 | 64 | 34 | 60 |
| Water District Regular Minor Applications | 207 | 178 | 0 | 0 | 133 | 26 | 120 |
| Water District Expedited Creations Applications | 137 | 120 | 9 | 36 | 352 | 140 | 120 |
| Water District Regular Creations & Conversions | 33 | 56 | 2 | 144 | 895 | 237 | 180 |
| Water Engineering Plan Reviews | 5026 | 4944 | 0 | 0 | 80 | 59 | 60 |
| Exceptions | 2632 | 2632 | 0 | 0 | 246 | 84 | 180 |
| Alternative Capacity Requirements | 234 | 224 | 0 | 1 | 90 | 78 | 90 |
| **Priority 1 Totals** | **9197** | **9062** | **38** | | | | |

TCEQ's Water Supply Authorization program completed reviews for 9197 applications and authorizations, with an average processing time ranging from 34 to 237 days.

**Table B-6.** Radioactive Materials Permits (Uncontested) Processing Times

| Application Type | Received in FY 23 & FY 24 | Processed in FY 23 & FY 24 | Exceeding Target as of 8/31/24 | Minimum Processing Time (Days) | Maximum Processing Time (Days) | Average Processing Time (Days) | Target Maximum (Days) |
|---|---|---|---|---|---|---|---|
| **Priority 1** | | | | | | | |
| Uranium Radioactive Material License Initial Issuance | 0 | 0 | 0 | N/A | N/A | N/A | 885 |
| Low-Level Radioactive Waste Radioactive Material License Initial Issuance | 0 | 0 | 0 | N/A | N/A | N/A | 990 |
| Uranium Radioactive Material License Major Amendments | 1 | 0 | 1 | N/A | N/A | N/A | 885 |
| Low-Level Radioactive Waste Radioactive Material License Major Amendments | 1 | 0 | 0 | N/A | N/A | N/A | 990 |
| Underground Injection Control (UIC) New Class I Permits | 25 | 8 | 2 | 93 | 513 | 513 | 390 |
| UIC Major Amendments | 1 | 9 | 0 | 658 | 658 | 658 | 390 |
| UIC General Permit Notice of Intent | 0 | 0 | 0 | N/A | N/A | N/A | 120 |
| UIC New Class III Area Permits and Production Area Authorizations | 3 | 2 | 1 | 148 | 148 | 148 | 390 |
| UIC Class V Authorizations (Aquifer Storage & Recovery and Aquifer Recovery) | 2 | 2 | 0 | N/A | N/A | N/A | 180 |
| UIC Class IV & V Authorizations and Amendments | 119 | 114 | 1 | 3 | 442 | 52 | 90 |
| **Priority 1 Totals** | **152** | **135** | **5** | | | | |
| **Priority 2** | | | | | | | |
| Uranium Radioactive Material License Renewals | 0 | 3 | 2 | 862 | 862 | 862 | 885 |
| Uranium Radioactive Material License Minor Amendments | 0 | 1 | 0 | 385 | 385 | 385 | 230 |
| Low-Level Radioactive Waste, Radioactive Material License Renewals | 1 | 0 | 0 | N/A | N/A | N/A | 990 |
| Low-Level Radioactive Waste, Radioactive Material License Minor Amendments | 2 | 2 | 0 | 142 | 273 | 208 | 230 |
| UIC Permit Renewals | 26 | 11 | 6 | 611 | 828 | 683 | 390 |
| UIC General Permit Notice of Intent Renewals | 5 | 0 | 5 | N/A | N/A | N/A | 240 |
| **Priority 2 Totals** | **34** | **17** | **13** | | | | |
| **Overall Totals** | **186** | **152** | **18** | | | | |

The Radioactive Materials Division met and communicated with applicants during the permitting and licensing process to improve their understanding of agency regulations, forms, and procedures. This allowed for a more streamlined resolution of application deficiencies and issues, improving the overall time frame for reviews.

**Total Automation Opportunity = 14,059 authorizations per year + unregistered PBRs (~4,000 per year)**

Ref. TCEQ link

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Then Lousiana (LDEQ) and all the other 48 States . . . EPA Permits . . . and eventually other countries


# AUTOMATE ALL ENVIRONMENTAL PERMITS

enviro·ai

EnviroAgent

# AUTOMATE ALL PERMITS!

Automate absolutely everything we can possibly automate.

enviro·ai


*The goal . . .*

2027

"Push a button . . .
file application."

enviro·ai

# THE EVOLUTION OF PLANETARY STEWARDSHIP

## STATIC CLEAN AIR REGULATIONS
(STATIC REGULATIONS & REQUIREMENTS)


Compliance, Reporting,
Rigid Limits

## DYNAMIC REAL-TIME ENVIRONMENTAL THRIVING
(AI-POWERED ECOSYSTEM HEALTH)

AI Prediction, Adaptive Management,
Holistic Thriving

**A Paradigm Shift from Regulatory Compliance to Self-Correcting Planetary Stewardship.**


**Dynamic Environmental Permitting™**


THE REALITY: NAVIGATING WITH A PAPER MAP FROM 1975
1975
THE FIX: WAZE FOR EMISSIONS (REAL-TIME AI MODELING)

# CURRENT WAY: STATIC AIR PERMITTING

Based on air monitoring data

AERMOD

**YEAR 0:**
INITIAL AIR MODELING (AERMOD)

**YEAR 5:**
FACILITY BUILT

**50+ YEARS:**
NO SUBSEQUENT MODELING OR MONITORING (IF UNMODIFIED)

**PLANT END**
OF LIFE

# PROPOSED WAY: DYNAMIC AIR PERMITTING

AERMOD

**YEAR 0:**
INITIAL AIR MODELING (AERMOD)

**YEAR 5:**
FACILITY BUILT

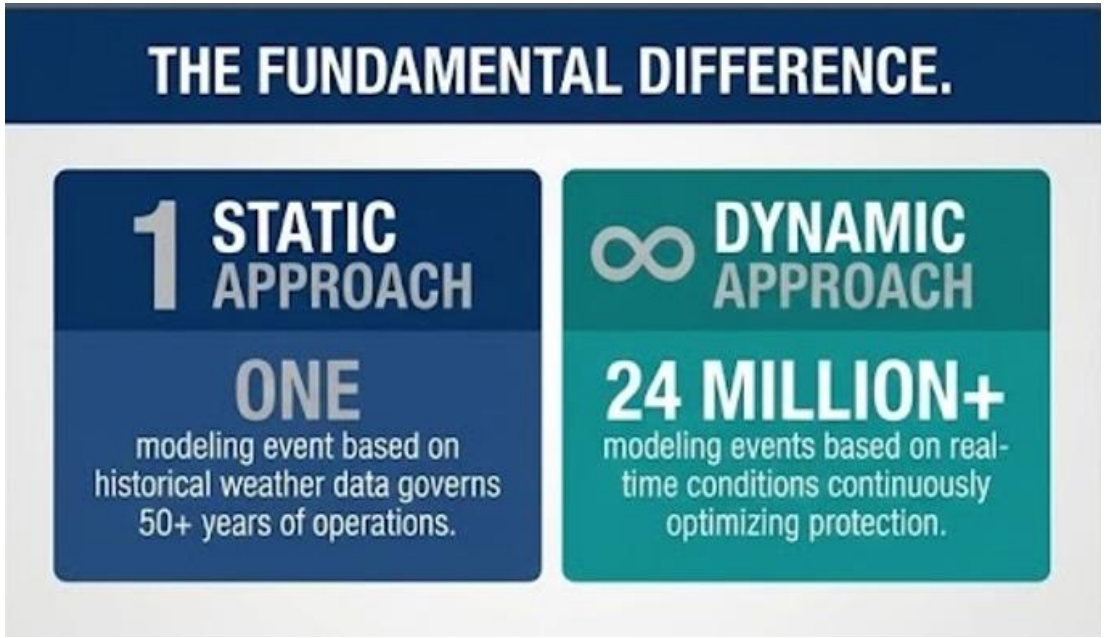
**CONTINUOUS AI MODELING & REAL-TIME MONITORING NETWORK**

THOUSANDS OF POINTS EVERY FEW SECONDS/MINUTES

**DYNAMIC AIR PERMITTING:**
CONTINUOUS EVALUATION


THE OLD WAY: STATIC AIR PERMITTING
ONE STATIC PERMIT
YEAR 1
YEAR 2
YEAR 3
YEAR 4
YEAR 5
INFREQUENT, MANUAL EVALUATION
NO CONTINUOUS MODELING

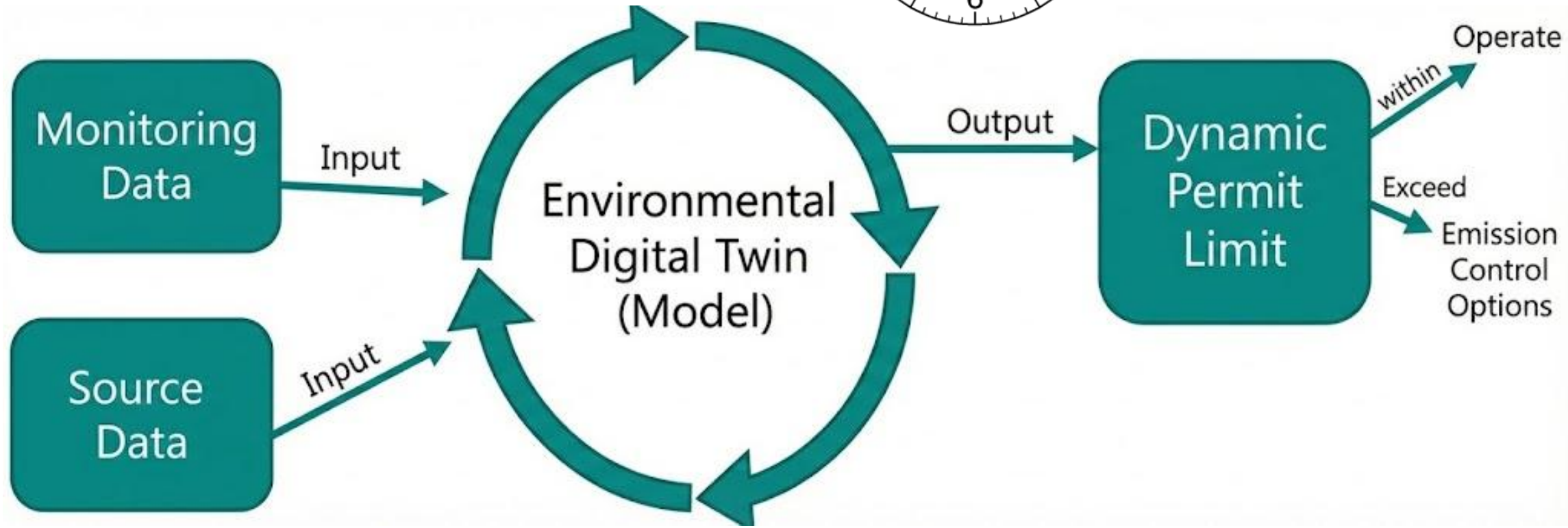

PROPOSED WAY: DYNAMIC AIR PERMITTING.
THOUSANDS OF POINTS
DYNAMIC AIR PERMITTING: CONTINUOUS EVALUATION
CONTINUOUS AI MODELING & REAL-TIME MONITORING NETWORK
YEAR 0
YEAR 1
YEAR 2
YEAR 3
YEAR 4
YEAR 5


THE FUNDAMENTAL DIFFERENCE.
1 STATIC APPROACH
ONE
modeling event based on historical weather data governs 50+ years of operations.
∞ DYNAMIC APPROACH
24 MILLION+
modeling events based on real-time conditions continuously optimizing protection.

## THE REALITY: MANAGING WITH A FADED POLAROID


## THE FIX: ENVIRONMENTAL SUPERINTELLIGENCE

**RUNNING CONTINUOSLY!!!**



ENVIRO.AI | DYNAMIC PERMIT CONTROL

Facility: XYZ Refinery | Status: LIVE

## Objective Truth Analysis


Current Time: **14:15 CST**

## Macro Twin Data
(Nvidia Earth-2)

Wind Vector:
**12.5 Knots @ SW**

Dispersion Class:
**A** (Very Unstable/High Mixing)

Inversion Layer:
**None Detected**

Emission Control Options

## Dynamic Permit Status

**[ GREEN STATE ]**
Optimized Operations Enabled

Static Permit Limit:
**100**
Units/hr
(Fixed Baseline)

Current Allowed Limit:
**145**
Units/hr
(Verified Real-Time Capacity)

DRAFT

Emission Sources - Maximum Allowable Emission Rates

| Emission Point No. (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates | |
|---|---|---|---|---|
| | | | lbs/hour | TPY (4) |
| 165 | UU3 305-B Hot Oil Heater (12) | VOC | * 2.11 | 8.03 |
| | | $NO_x$ | *59.79 | 223.38 |
| | | CO | *17.59 | 59.57 |
| | | $SO_2$ | * 10.3 | 39.26 |
| | | $PM_{10}$ / $PM_{2.5}$ | *2.91 | 11.1 |
| 164A | UU3 313-B Flue Gas Heater (11) | VOC | * 0.12 | 0.52 |
| | | $NO_x$ | * 1.76 | 7.73 |
| | | CO | *3.62 | 8.56 |
| | | CO - MSS | *14.44 | |
| | | $SO_2$ | *1.29 | 5.66 |
| | | $PM_{10}$/$PM_{2.5}$ | *0.37 | 1.61 |
| 165A | UU3 309-B Hot Oil Heater (12) | VOC | *0.84 | 3.2 |
| | | $NO_x$ | * 4.2 | 17.17 |
| | | $NO_x$ - MSS | *41.96 | |
| | | CO | * 31 | 64.59 |
| | | CO - MSS | *124.05 | |
| | | $SO_2$ | *11.07 | 42.24 |
| | | $PM_{10}$/$PM_{2.5}$ | * 3.15 | 12.01 |
| | | $NH_3$ | * 1.88 | 4.66 |

(1) Emission point identification - either specific equipment designation or emission point number from a plot plan.
(2) Specific point source names. For fugitive sources, use an area name or fugitive source name.
(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
$NO_x$ - total oxides of nitrogen
CO - carbon monoxide
$SO_2$ - sulfur dioxide
$H_2S$ - hydrogen sulfide
$H_2SO_4$ - sulfuric acid mist
$O_3$ - ozone
PM - particulate matter
$PM_{10}$ - particulate matter (PM) equal to or less than 10 microns in diameter. Where PM is not listed, it shall be assumed that no PM greater than 10 microns is emitted.
$PM_{2.5}$ - PM equal to or less than 2.5 microns in diameter.
$NH_3$ - ammonia
HCN - hydrogen cyanide



# DYNAMIC PERMIT LIMIT

(4) * **Real-Time Operating Envelope (RTOE):**

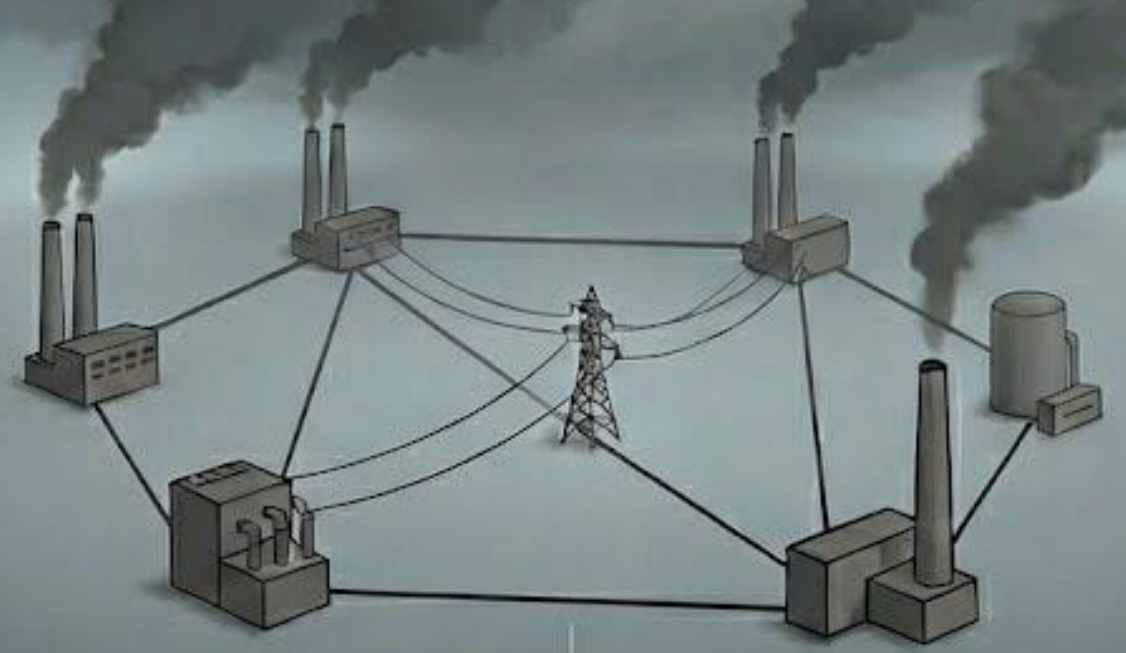
Short-term emission rates designated with [*] are determined by the Real-Time Operating Envelope, a continuous modeling and monitoring system that calculates the allowable emission rate based on real-time meteorological conditions, atmospheric dispersion modeling, and ambient air quality data.

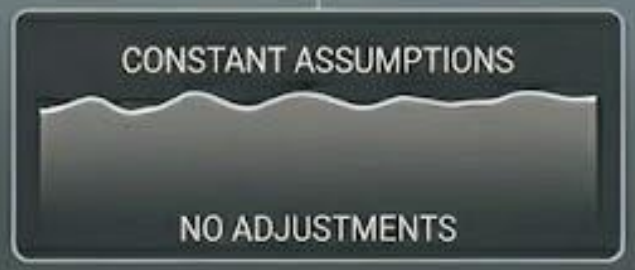
# SMART GRID FOR ELECTRICITY

AI-OPTIMIZED, DYNAMIC, EFFICIENT


# DUMB GRID FOR ENVIRONMENTAL

STATIC, ONE-TIME ONLY



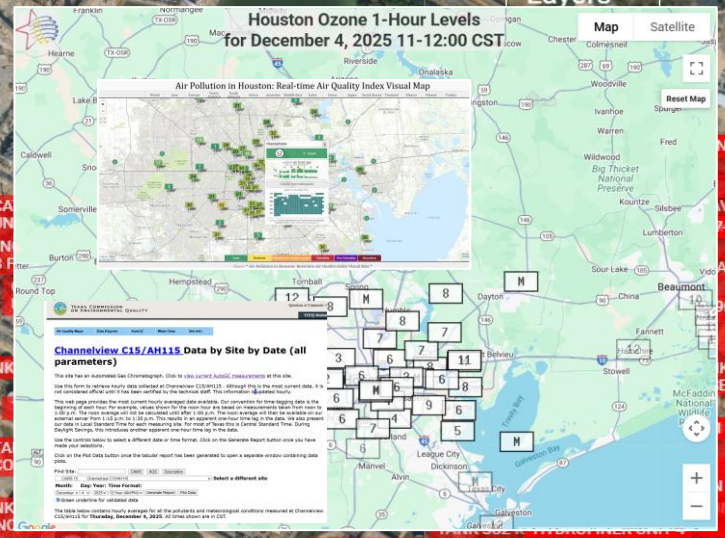


https://www.searchtundra.com/my-tundra

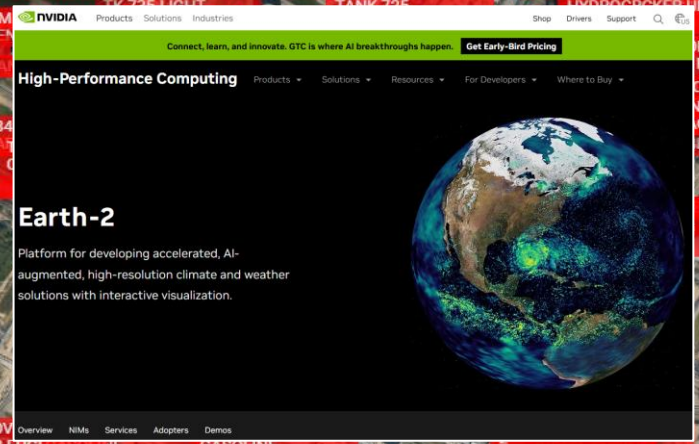
Layers

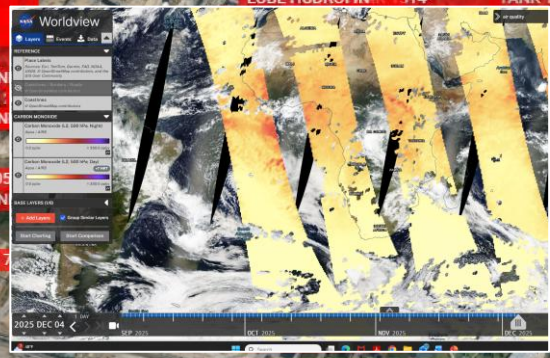
Projected Future Refinery

- Permits
- Emission Reduction Opportunities
- Agency Documents
- Trackbot Results
- Emission Events
- Enforcement Actions
- Deviations
- EJ Screen
- EMIS Link
- Emissions Profile
- Deadline Reminders
- Environmental Sentiment Analysis
- Benchmarking
- Social Media
- CAER LINE NOTIFICATIONS
- NRC Notifications
- State Compliance History
- Current Air Quality Conditions








TK 1186-CRUDE OIL (BT MIX
SCU2 INC. F702 HOT STBY
COOLING TOWER 84 FUGITIVE
TANK 1033
TANK 1032
TANK 1002
TANK 1001-OU
DCU DRUM V
606
TANK 902-RECYCLE
TANK 1092 - CRUDE
TANK 1089 - CRU
TANK 1088 - CRUDE (N.SLP)
TANK 1090 - ACN
TANK 1031
TANK 1029
TANK 1028
TANK 1086 - CRUDE (SLT F)
FXK STACK
TANK 1080
TANK 1024
OIL MOVEMENTS
EMERGENCY GEN
SCU 2 CLAUS C
TANK 1023
TANK 1022
TANK 1015
TANK 1326
TANK 1327
TANK 1307
TANK 1331
TANK 1336
TANK 744-LT BLD NAP
TANK 737-KATY NAPHTHA
TANK 743-AXU RAFFINATE
TANK 722
TANK 374
TANK 392
TANK 726
TANK 366 ISOPAR G
TANK 794
TANK 790-LAKTANE
TANK 732-SCN
SOUR WATER UNIT FUGITIVES
TANK 365
TANK 364
TANK 472
HU9 HEATER F-331 REBOILER
TANK 348
TANK 824
TANK 590
TANK 807
TANK 802
TANK 806
TANK 0811A
TANK 859 - GASOLINE
TANK 850 - GASOLINE
TK0084 RENTAL PUMP
HYDROFORMER 4 F404 & F405
TK0758
TANK 757-LT. CAT NAP

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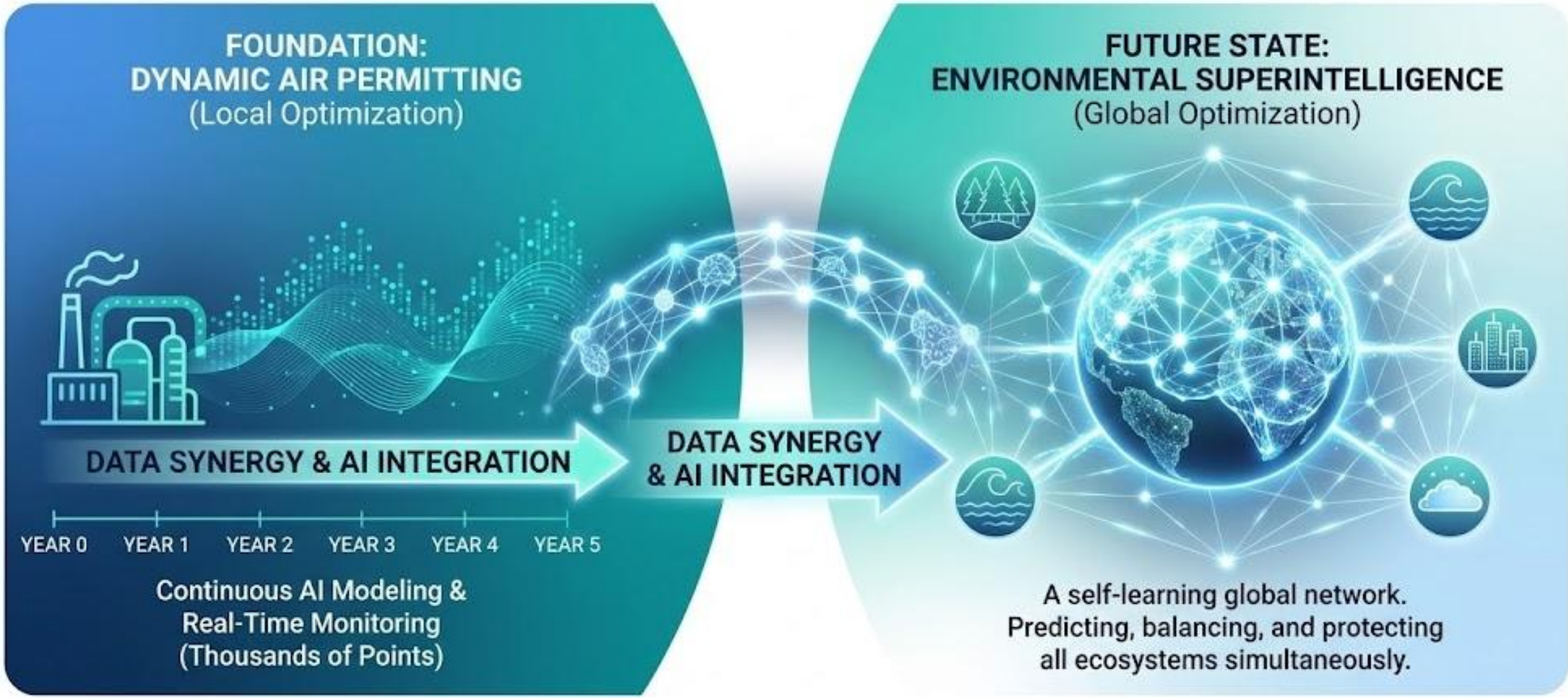
ExxonMobil
Baytown Complex:
Integrated Refinery &
Chemical Plant.
Major Ethylene Producer.
High Capacity.
Chevron Phillips
Chemical Pasadena:
Specialties in Plastics
& Chemicals.
Significant Production
Baytown
Shell
Deer Park
Diverse Chemical &
Refining Operations.
Key Industrial Site
Pasadena
Deer Park
LyondellBasell
Houston Refinery
Heavy Crude
Processing.
Large-Scale Operations
Valero
Texas City Refinery
Gasoline & Diesel
Production.
Strategic Gulf
Coast Location.
Texas City
Galveston
Bay
45
10
18


Texas Air Quality
Nonattainment Areas
Ozone
Dallas-Fort Worth
2015 Eight-Hour Ozone
Nonattainment Area
Houston-Galveston-Brazoria
015 Eight-Hour Ozone
ttainment Area
Bexar County
2015 Eight-Hour Ozone
Nonattainment Area
Legend
Eight-Hour Ozone Nonattainment Area
2008 Eight-Hour Ozone Nonattainment Area
Designated Nonattainment for both
2008 and 2015 Eight-Hour Ozone Standards
No more
nonattainment
areas!!!

# FROM DYNAMIC PERMITTING TO ENVIRONMENTAL SUPERINTELLIGENCE: THE EVOLUTION OF PLANETARY STEWARDSHIP

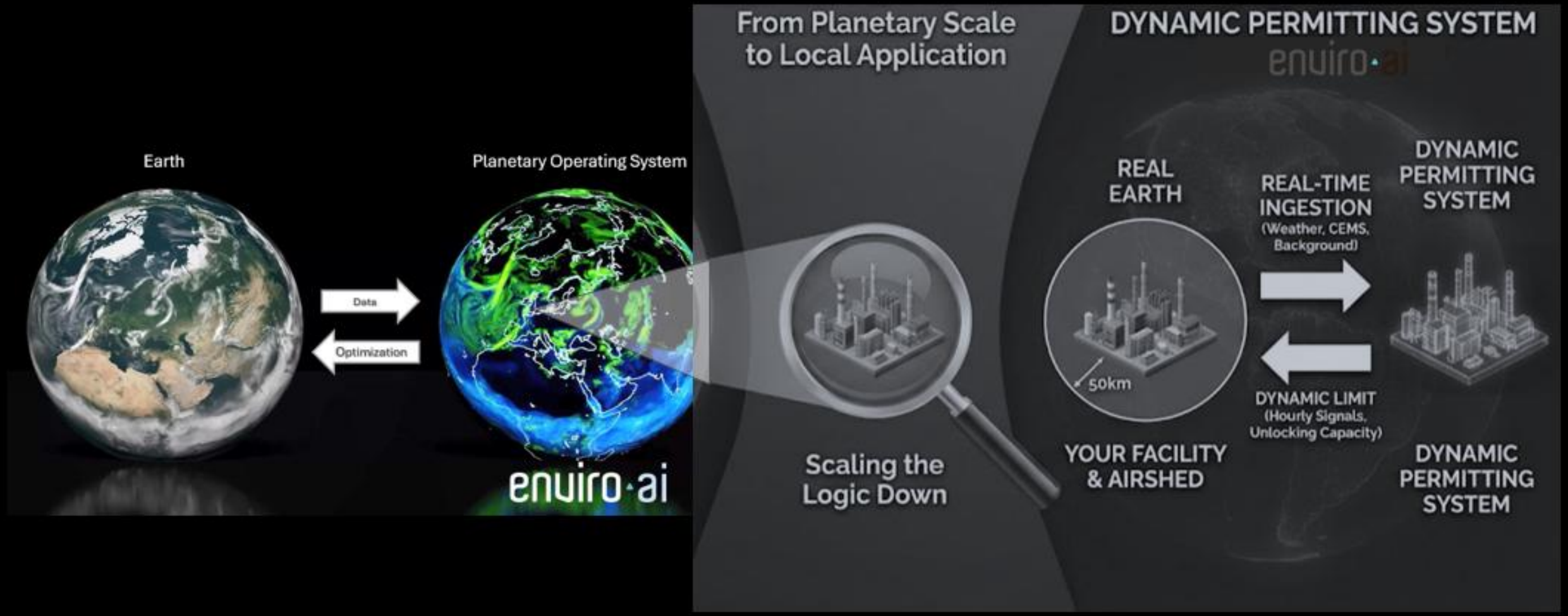



**Moving beyond isolated compliance to a unified, predictive, and self-correcting planetary system.**


NVIDIA®
EARTH2

# SCALING DYNAMIC PERMITTING TO A PLANETARY OPERATING SYSTEM

(i.e. ENVIRONMENTAL SUPERINTELIGENCE)



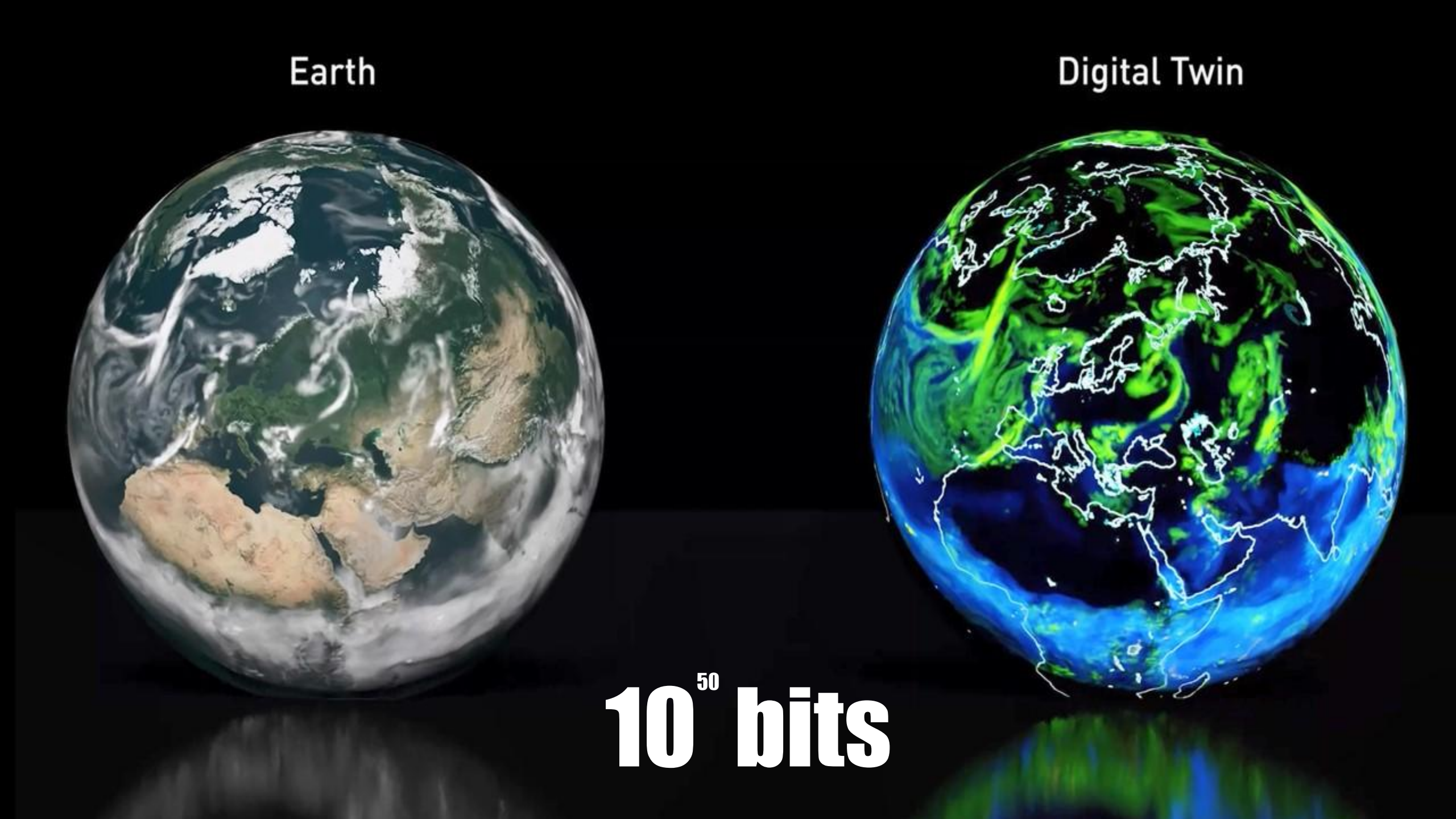
$10^{90}$ **Bits of information in the universe**
(MIT Study)

$10^{50}$ **Bits of information in Earth's systems**

$10^{30}$ **Bits of human generated information**

$10^{21}$ **Bits of information AI (ChatGPT) trained on**

$10^{19}$ **Bits of information Nvidia's Earth2 trained on**

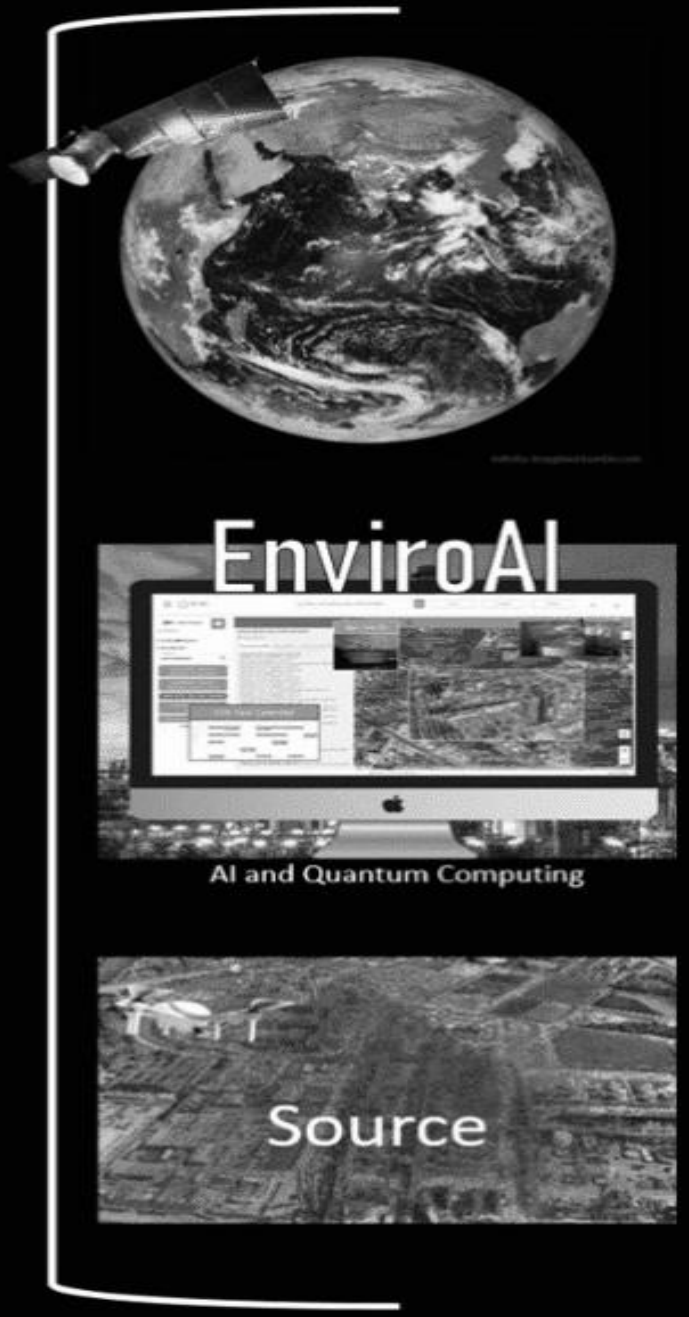

Earth
Digital Twin
10^50 bits

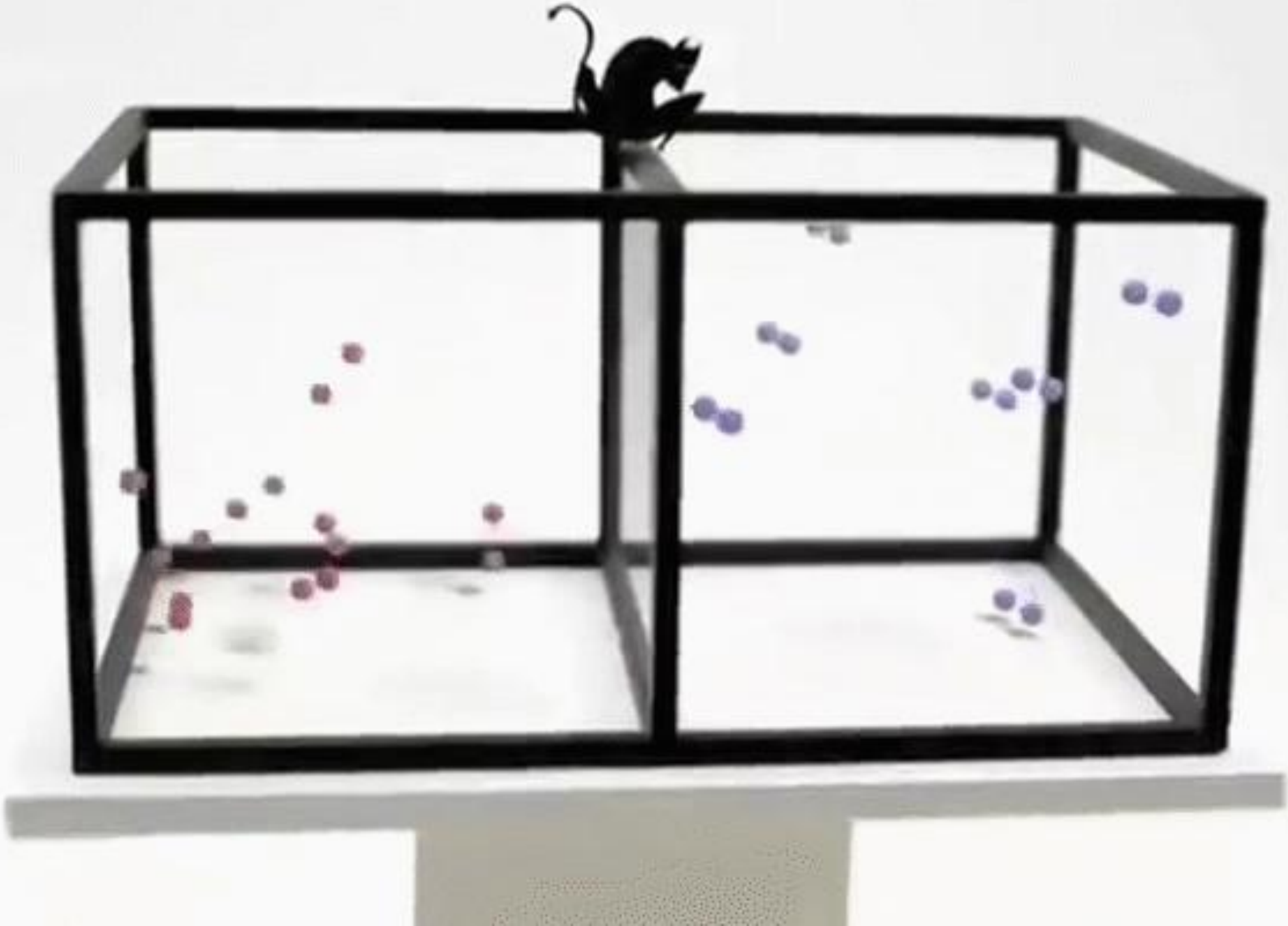
Real-Time . . .

Continuous . . .

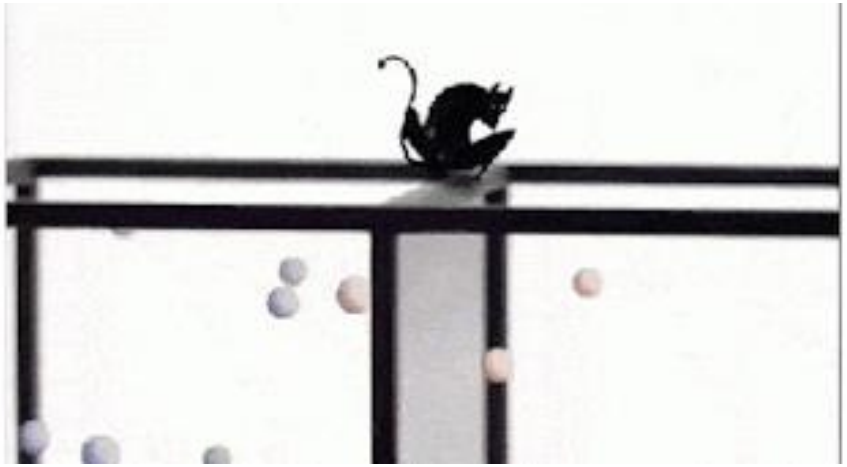
**Automated Environmental Management**

AI





$10^{20}$




Environmental
Superintelligence
2045
Camp 2
1st Environmental ✓
Automation (Permits)
2025
Base Camp
1st Environmental
Chatbot
2022
enviro·ai