



EJAC COMMENTS ON CARBON CAPTURE



2021

EJ groups send letter to CARB rejecting Carbon Capture and Sequestration and DAC

2022

EJAC submitted final recommendations and calls on CARB to exclude unproven, dangerous technologies that build upon the current fossil fuel infrastructure in EJ communities

2023

SB 905 and efforts by EJ groups to stem the real threat posed by CCUS and related technologies to EJ and health

EJ groups develop a platform of CCUS

2024

CARB begins the regulatory process that ignores EJ scenario without CCUS and other EJAC recommendations



DANGER



Hazardous waste generated by CO₂ capture from coal (or gas) power plants

- CO₂ in flue gas must be separated from other constituents to be collected and compressed
- Ethanolamine solvents commonly used; regenerated
- In the CO₂ capture process, amines are partially degraded and must be captured as hazardous waste
- 1 million MT CO₂ captured > 300-3000 MT amine waste
- Contaminants of the amine waste stream generally include ammonia, organic acids, nitrosamines, aldehydes, and other degradation products—highly toxic (usually landfilled or incinerated)



Carbon dioxide

- **Colorless, odorless, non-flammable, heavier than air**
- **Asphyxiant—displaces O₂; also toxic when > acidosis**
- **Classified as a hazardous substance** by the Occupational Safety and Health Administration (OSHA) and National Institute for Occupational Safety and Health (NIOSH)
- **Workplace exposure limits:**
 - OSHA**: Airborne permissible exposure limit (PEL) is 5000 ppm (0.5%) averaged over 8 hrs.
 - NIOSH**: Recommended airborne exposure limit (REL) is 5000 ppm averaged over 10 hrs. and **not to exceed 30,000 ppm (3%) over any 15 min. period.**

CO2 Concentration	Health Effect	Timing
2% (20,000 ppm)	Respiratory center stimulated causing increases in breathing (tidal) volume.	Rapid
4% (40,000 ppm)	Increase in breathing rate becomes distressing; development of respiratory acidosis.	Immediately dangerous to life and health (IDLH) [NIOSH] *
5-10%	Dimmed sight, sweating, tremor, increased heart rate and blood pressure; can > unconsciousness.**	Within a few minutes.
more than 10%	Can cause convulsions; coma (less than a minute)	Death within 10 minutes
20-30%	Loss of consciousness; death	Within one minute

* NIOSH considers this level to be immediately dangerous to life and health because it can cause confusion and impair ability to respond and get to safety. Signs and symptoms resulting from low to moderate exposures are generally reversible when a person is removed from a high CO2 environment.