CS CLEAN SOLUTIONS

Pre-Application Public Notice Meeting
CS CLEAN SOLUTIONS Inc

2453 West Parkside Lane, Suite 150, Phoenix, AZ

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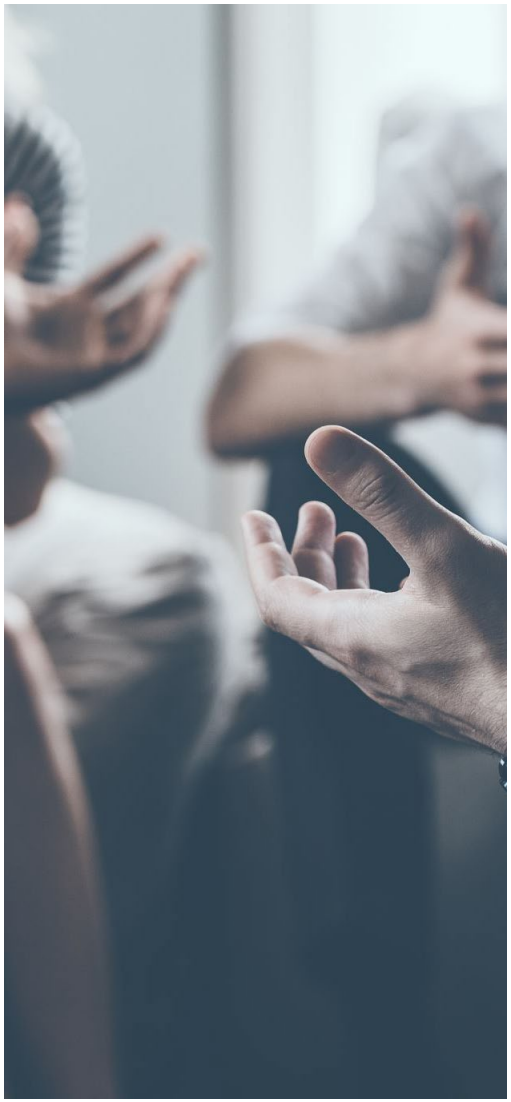

Introductions

CS Clean Solutions INC

Ed Kulha – CEO and President

Adam Furphy- VP, Business Development and Operations

HRP Associates

David Webster, CSP - Senior Project Manager

Earl & Curley

Ricardo Toris – Principal Planner

Arizona Department of Environmental Quality

Mary Cottrell - Permit Writer

Josie Poler – Permit Writer

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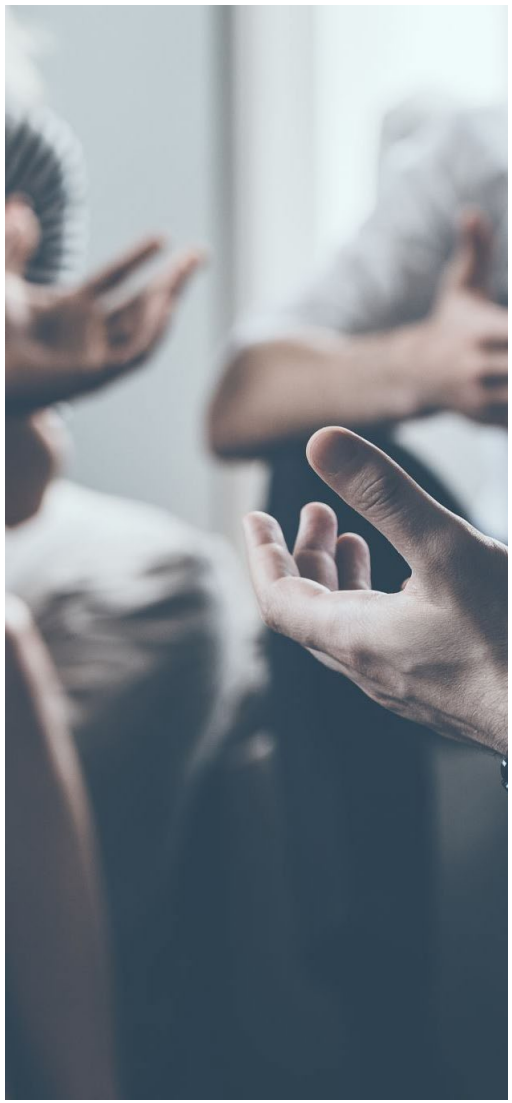

Purpose and Format of Today's Meeting

CS CLEAN SOLUTIONS

Company History

CS CLEAN SOLUTIONS AG
Ismaning, Germany

CS Clean Solutions Inc.
Danbury, Connecticut

1986 Founded in Munich, Germany

1990 Commercialization of CLEANPROTECT and CLEANVENT

1994 First permitted waste transfer station established in United Kingdom

1995 Established CS Clean Systems Inc North America

1996 Established waste handling, treatment and reclaim at CSAG Europe

2010 CS Clean acquires NOVAPURE line from AMAT

2011 Relocated CA CS Inc. operations to Danbury, CT

2019 454 Permit by State of Connecticut DEEP for waste transfer & reclaim management

2020 CT Waste handling facility fully operational Q4 2020

2023 Plasma conversion systems (PCS) added to product offering

2024 AZ joint venture facility opened with Zillion Tek “Zillion Tek USA”

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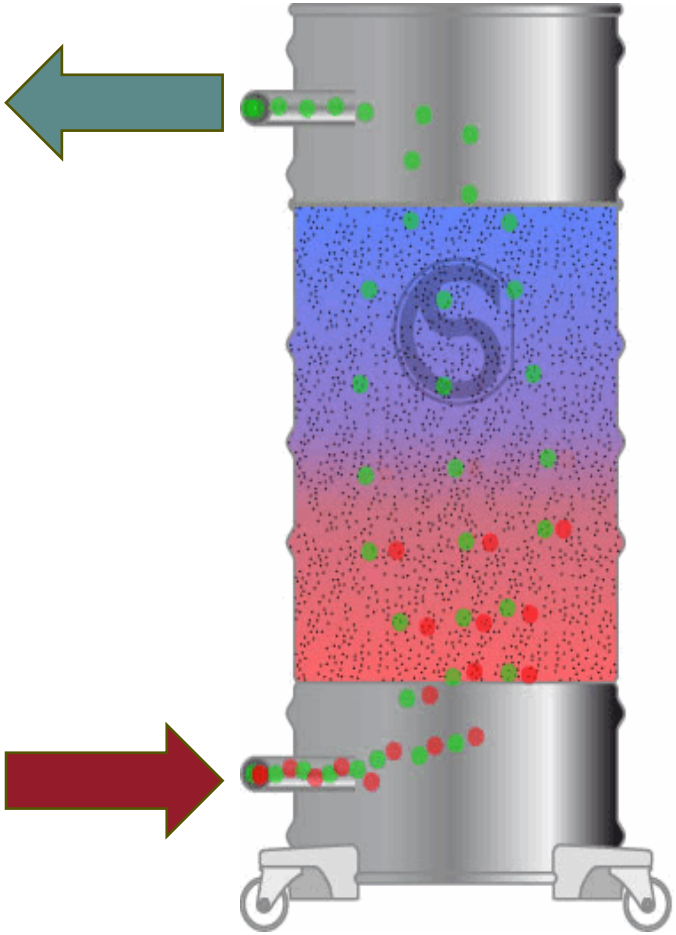
Our Column and System - CLEANSORB



Customer Application of CLEANSORB

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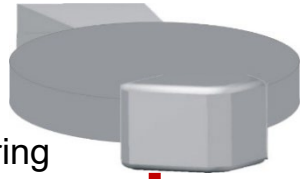
99.9% of Effluents Scrubbed from the Exhaust

Customer Manufacturing Environment - Fab

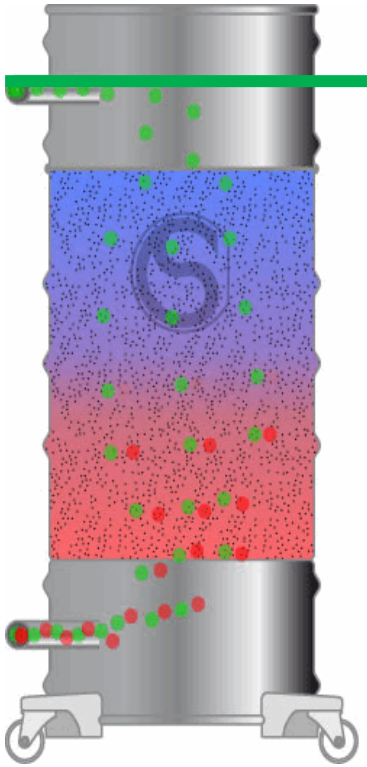


Manufacturing Process Tool

Post Process Exhaust

Vacuum Pump

CLEANSORB Column



Additional Facility Abatement Equipment

Typically, Water Treatment & / or Additional Scrubbers

100% Cleaned

Life Cycle of CLEANSORB

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Systems & storage at customer Facility

Spent Granulate column “Waste”

Empty at CS CLEAN facility

Cleaned at CS CLEAN facility

3rd Party disposal company

Fill with Fresh Granulate at CS CLEAN facility

Fresh column storage

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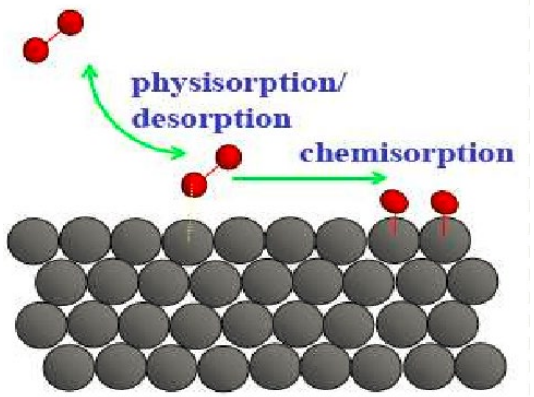
Our Granulate - Gas is abated by Chemisorption

Actual Granulate



New material is safe, non-combustible inorganic medium (no charcoal)

Irreversible conversion of hazardous gases to stable inorganic solids at ambient temperature

No secondary emissions to the environment

No consumption of electricity, city water, oxygen, nitrogen

Customized material compositions and column fillings

Excellent Cost-of-Ownership and capacity for customer applications

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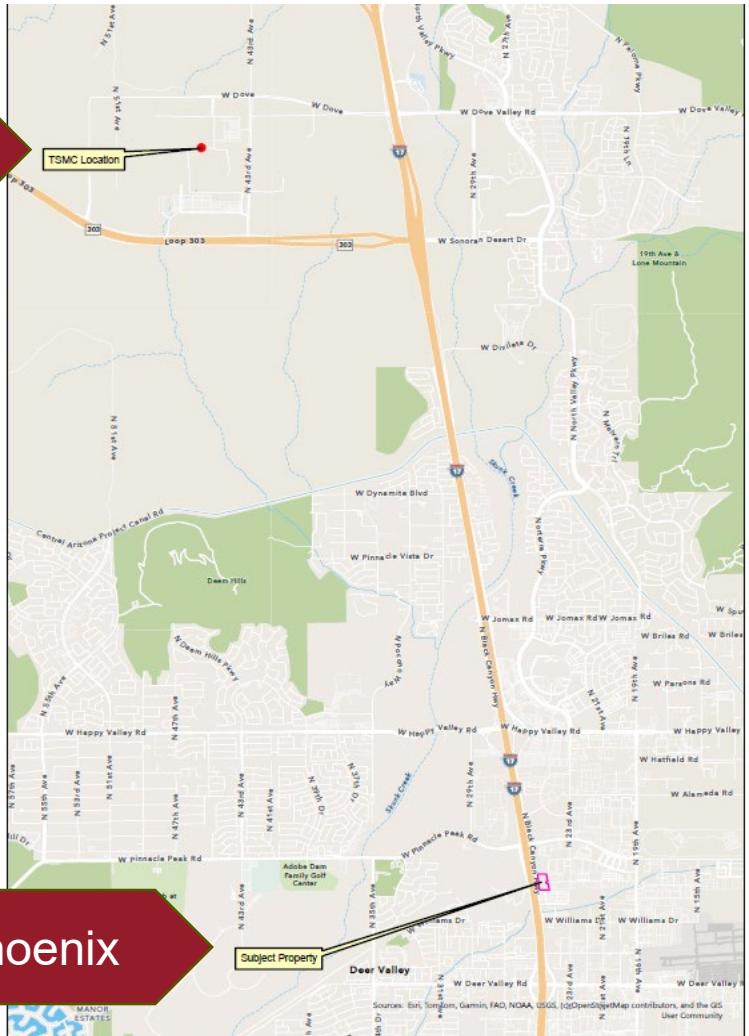
Our Location

TSMC Site

CS Cleans facility is strategically located ~18 miles south of TSMC just of Rt 17

TSMC recommends local presence as a cost saving expectation & brings more opportunity to the local area



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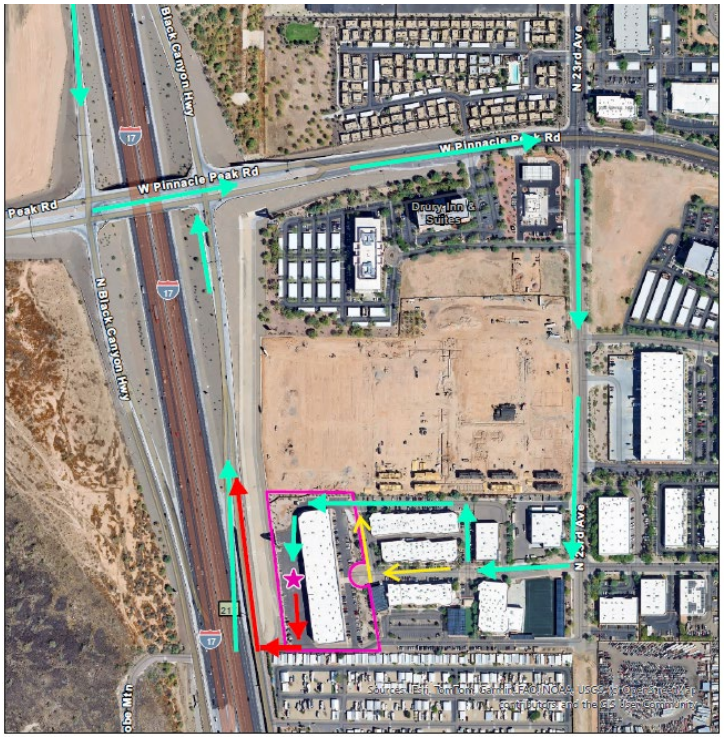
Our Planned Transportation Routes



CS Clean will have a low volume impact to the surrounding businesses and traffic

~ 1X week : Box truck in and out of the site

~ 1 X Month : Semi for waste removal or virgin granulate delivery's

All Departures will be routed through rear one-way ramp

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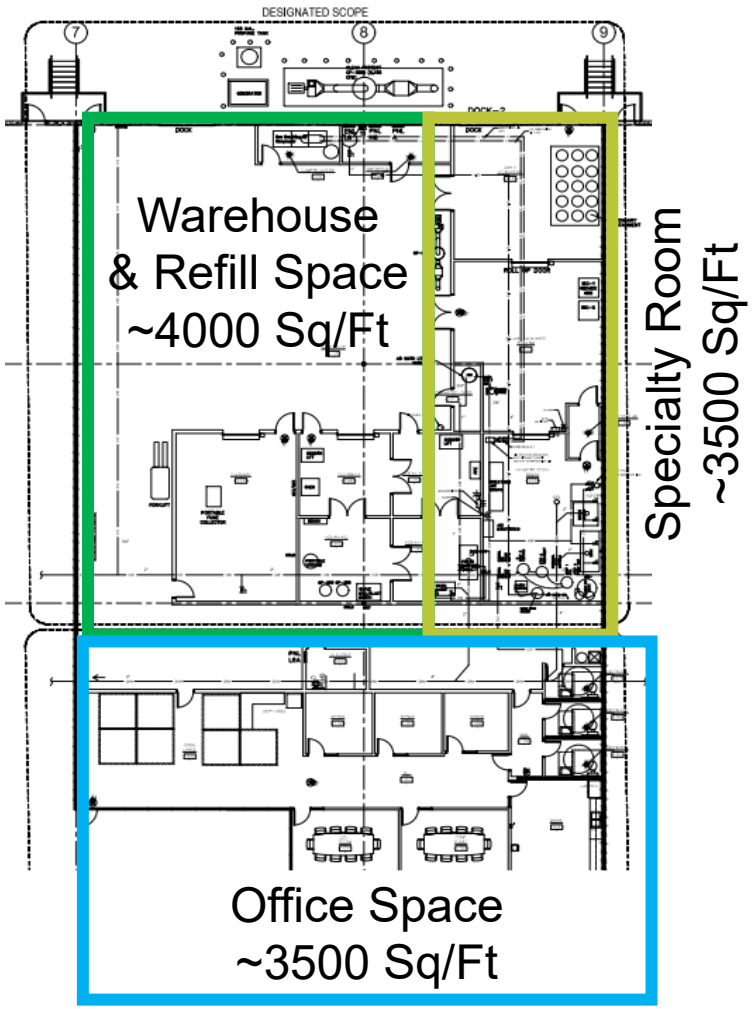
Our Site Overview



~ 12000 Sq/ft CS CLEAN facility open since 2023 with a 7 Yr evergreen lease

$1.2M Specialty Room completed March 2025, Estimated to be operational by December **2025**

On-site staffing increases with specialty room operation & use

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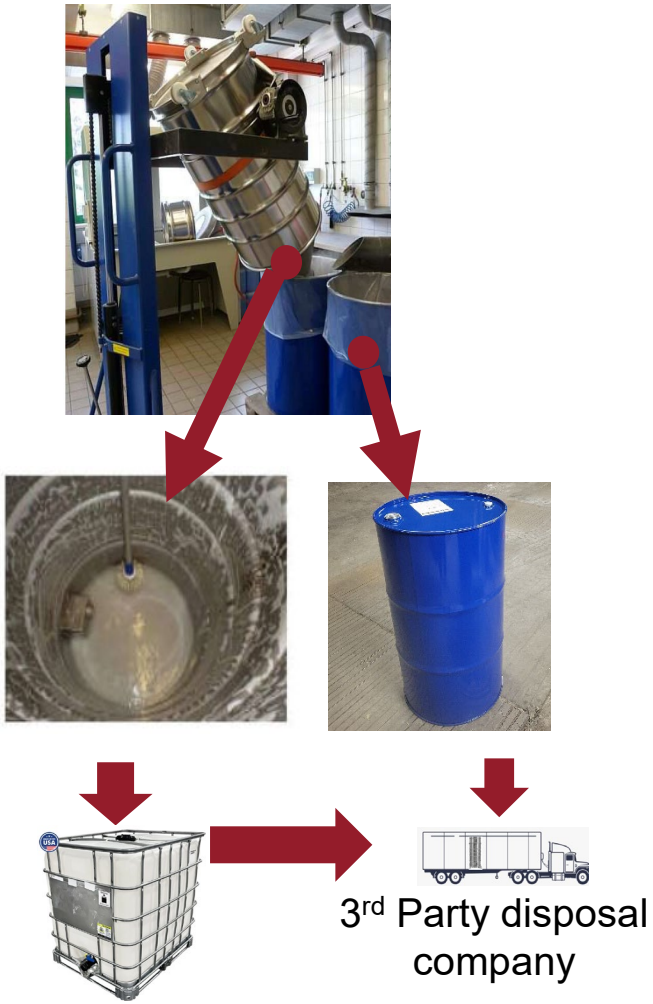
Spent Granulate Transfer Process of CLEANSORB



The Specialty room is designed based on BKM's & 4 decades of learning

CS CLEAN will never perform on-site disposal

All disposal will occur off-site by licensed disposal 3rd party

Granulate lifetime can be 2 months to 3 years depending on customer use

All waste will be onsite short-term, target <90days vs 365-day permit allowance

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Waste Management Procedures & Equipment to Contain Exposure

All spent granulate (waste) in containerized, including process wastewater, from the treatment process for off-site disposal

No floor drains are present, all wastewater from treatment is captured & contained onsite in containers to be handled by 3rd party disposal companies

All treatment will occur under a controlled & isolated atmosphere within the Waste Transfer Area

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Waste Management Procedures & Equipment to Contain Exposure (Cont.)

Ventilation will be routed to a HEPA filter & CS CLEAN CLEAN-PROTECT CP1000 scrubber system to prevent any form of extraordinary environmental release. This process is regulated under Maricopa County Air Permit

The facility is equipped with electrochemical gas sensors & oxygen deficiency alarms should a leak occur

The facility maintains redundant power supply systems in the form of a generator & uninterruptible power supply support

CS CLEAN provides classroom & on-the-job training to all employees for their duties & activities in compliance with RCRA

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Waste Management Procedures & Equipment to Contain Exposure (Cont.)

Access will be restricted via a key FOB system to only trained & authorized employees

All received waste will be accompanied by a manifest, waste profile & undergo a waste acceptance process with 3rd party disposal companies

All containers will be DOT approved for the wastes & are disposed of offsite targeting < 90-days

Employees performing treatment will don all required PPE (i.e., supplied air respirator, Tyvek suit, gloves, etc.)

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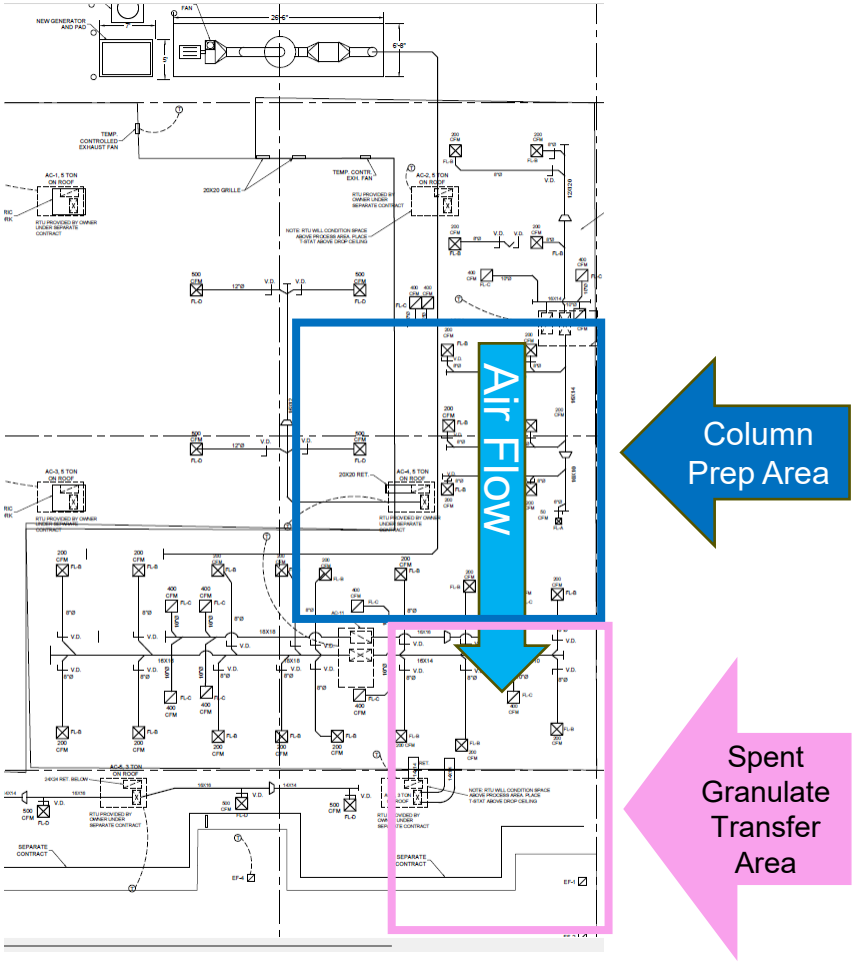
Air Scrubber & Clean Air Supply

All personal performing treatment process adorn full coverage PPE & fresh air supplied respirators in the Column prep area before entering waste treatment area

Air flow is drawn into the spent granulate transfer area from column prep area.

This negative pressure into the transfer area is required to keep all emissions contained



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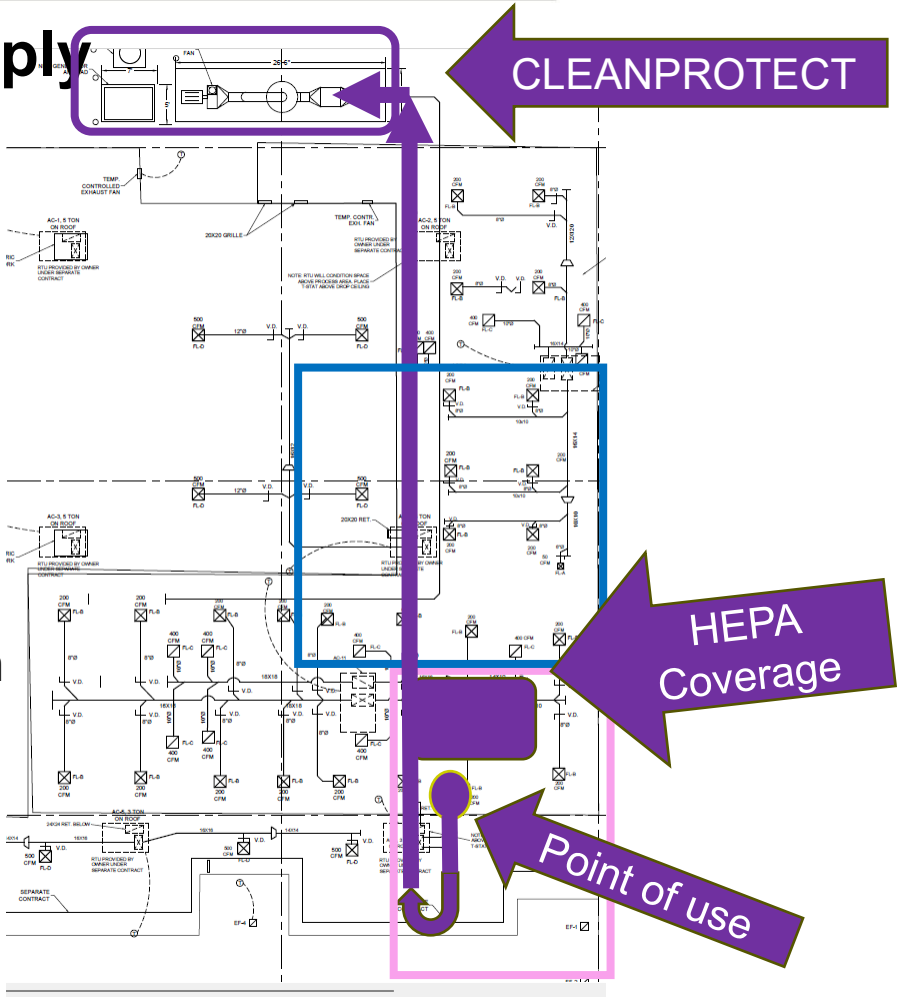
Air Scrubber & Clean Air Supply

All exhaust captured with a point of use vent & the entire waste transfer area is covered by a HEPA filter

All exhaust is then scrubbed to a CLEANPROTECT CP1000 to remove any potential contamination from reaching the atmosphere

No access to Atmosphere from Granulate Transfer Area



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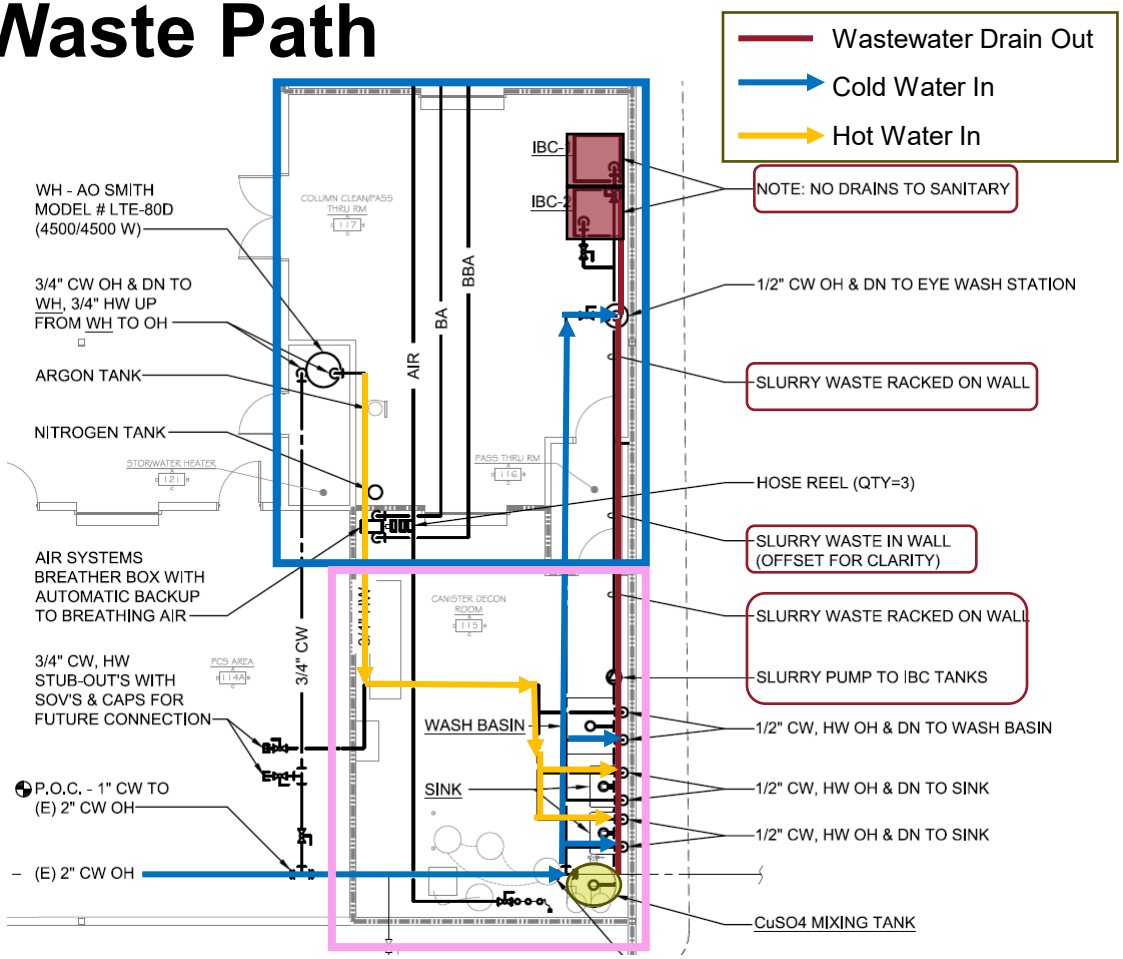
Water and Liquid Waste Path

No Access to Municipal or External Waste streams

All waste is pumped from the sinks and captured in a closed loop disposal vessel



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Procedures to Respond to Accidents or Abnormal Releases

Site has developed a Contingency Plan, shared with local authorities, and has an emergency spill response contractor

Fire detections, alarms, and suppression is maintained on a monthly, quarterly & annual basis

The rooms will be equipped with gas detection to determine safe entry and exit

The generator and uninterruptible power supply support will turn on in loss of power

CS CLEAN SOLUTIONS

Procedures to Respond to Accidents or Abnormal Releases

A contained berm system will prevent any spill from escaping the specialty areas.

All storage of waste is placed on secondary containment platforms

Spill kits will be maintained onsite

Staff will be trained in emergency response procedures

Proposed Facility and Required Permit

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ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

WASTE PROGRAMS PERMITTING

Hazardous Waste Treatment, Storage or Disposal Facility Permit

No disposal will occur at this facility

CS CLEAN anticipated waste profiles that are hazardous as:

- D001 (Ignitable)
- D002 (Corrosive)
- D003 (Reactive)
- D004 (Arsenic)

(R18-8-264 & 265 incorporating 40 CFR 264 & 265)

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Waste Minimization

Waste is **disposed off-site** by licensed 3rd party specialists

Ensures waste streams are characterized, recycled or reclaimed where possible, & disposed of responsibly

Single stream recycling & universal waste recycling is utilized where possible

CS CLEAN will pursue qualifying all applicable waste for reclaim

Waste stream analytical & metal content are key factors for qualification

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Pollution Prevention

CS CLEAN columns are inherently a part of air abatement & pollution prevention for the semiconductor industry

CS CLEAN targets to reclaim as much material as possible from our media and it process.

Waste (spent granulates) requiring treatment are processed via copper sulfate bath, oxidization, or purging

CS CLEAN holds an air permit with Maricopa County for the facility

All waste treatment activities will occur via specifically designed process area, described in the preceding slides, to mitigate any risk of pollution or release

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Questions ?

4 decades of proven experience with granulate

Proven process and special designed area for processing

Robust safety systems with redundancy

No disposal on site, handled by offsite 3rd party

No access to outbound municipals or atmosphere

Low Traffic impact to the area

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Thank You For Your Time