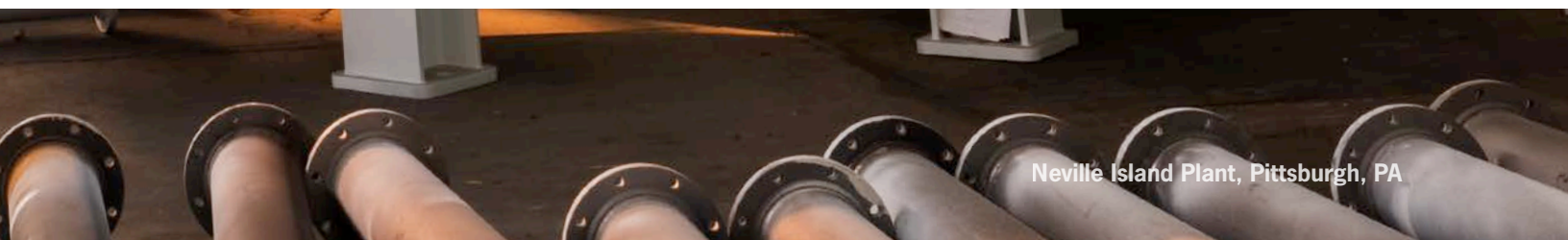




Activated Carbon Equipment
Superior Design, Superior Performance



Neville Island Plant, Pittsburgh, PA

Liquid Phase Equipment

Calgon Carbon service, sale, and rental equipment can be used for a variety of processes:

- Emergency response
- Temporary or permanent treatment
- Back-up to an overloaded plant system

- Pump test/pipeline hydrotest water cleanup
- Process expansion
- New process piloting
- Site excavation groundwater treatment
- Well development



Cyclesorb® FP-2/FP-1

- Designed for use in high-pressure, corrosive environments
- Wetted parts are high-density polyethylene, polypropylene, PVC, graphite, and EPR
- Entire unit returned for reactivation



Stainless Steel Cyclesorb®

- Food grade and industrial versions available
- ASME Code
- 15 psi, 75 psi, and 150 psi rated systems
- Entire unit returned for reactivation



Dual Module

- Pre-piped, skid-mounted system
- Designed for temporary or occasional service
- On-site exchange of carbon



Mobile Adsorber

- Pre-loaded, shipped on special trailers that place unit upright without a crane
- Fully operational with two simple hose connections
- Entire unit returned for reactivation



Model 8

Single or dual adsorber with manifold 10,000 pounds of GAC per adsorber

Model 10

Single or dual adsorber with manifold 20,000 pounds of GAC per adsorber

Model 12

Single or dual adsorber with manifold 20,000 pounds of GAC per adsorber

Model 14

Single or dual adsorber with manifold 60,000 pounds of GAC per adsorber

Liquid Phase Equipment

Equipment	Carbon (lbs)	Pressure (psig)	Maximum Flow Rate (gpm)
FLAWSORB®	165	5.0	10
Small DISPOSORB®	165	7.5	10
Large DISPOSORB®	1,000	7.5	30
CYLCESORB®FP1	1,000	75	30
CYLCESORB®FP2	2,000	75	60
CYLCESORB®HP	2,000	75	60
Protect™ Series	500–2,000	75	35–90
Model 6 (2 vessels)	12,000	75	225 per vessel, operated in series
Model 8 (2 vessels)	20,000	125	400 per vessel, operated in series
Model 10 (2 vessels)	40,000	125	625 per vessel, operated in series
Model 12 (2 vessels)	40,000	125	800 per vessel, operated in series
Model 12–40 (2 vessels)	80,000	125	1,000 per vessel, operated in series
Model 14	60,000	125	1,200 per vessel
Mobile Adsorber	12,500	50–65	225
Dual Module (2 vessels)	40,000	75	300 per vessel, operated in series
Dual Express (2 vessels)	40,000	75–125	300 per vessel, operated in series

Vapor Phase Equipment

Our extensive range of service, sale, and rental activated carbon adsorption systems for process gas and air purification are designed to meet the requirements of all applications ranging from typical conditions to the most challenging. Custom design or standard equipment are available.

Calgon Carbon offers low, medium, and high-flow vapor adsorption treatment units. Typical applications include treatment of industrial air emissions, gas process streams, storage tank vents, internal work air environments, and soil remediation vents.



VAPOR-PAC® 10

- Steel adsorber vessel
- Designed to treat up to 10,000 cfm, a single unit can be operated in series with a baffle
- Available as roll-off service
- When an exchange is needed, Calgon Carbon can deliver a replacement unit and remove unit with spent carbon



VAPOR-PAC® SS

- 316L Stainless steel adsorber vessel designed for ease of installation and operation
- Designed to treat up to 1,000 cfm, multiple units can be operated in series or parallel
- Entire unit returned for reactivation, eliminating on-site carbon handling



VAPOR-PAC®

- Plastic (PE) adsorber vessel designed for ease of installation and operation
- Designed to treat up to 1,000 cfm, multiple units can be operated in series or parallel
- Entire unit returned for reactivation, eliminating on-site carbon handling



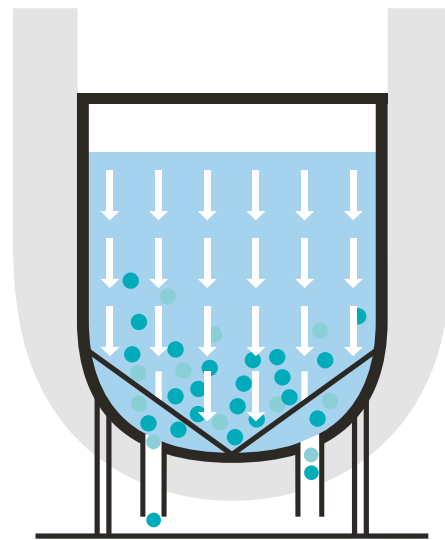
Vapor Phase Equipment

Equipment	Carbon (lbs)	Pressure (psig)	Maximum Flow Rate (cfm)
VENTSORB™	180	4	100
VENTSORB™ PE	170	2	200
High-Flow VENTSORB™	500–3,000	3	500–3,000
VAPOR-PAC® plastic	1,800	20" WC	1,000
VAPOR-PAC® stainless steel	1,800	15	1,000
VAPOR-PAC® 5	6,300	5	5,000
VAPOR-PAC® 10	12,500	14" WC	10,000
Protect™ MX 500V	450	4	450
Protect™ VW	1,000	3	750
Protect™ V Series	1,000–2,000	15	675–750
Protect™ VS Series	2,000–9,000	1	1,100–4,500
Protect™ RO Series	6,000–10,000	14" WC	6,000–10,000

Calgon Carbon Advantage

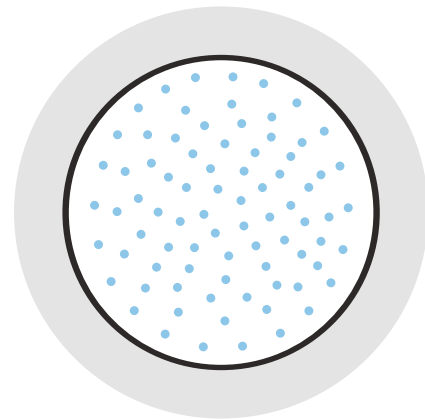
CALGON CARBON INTERNAL CONE

directs and distributes flow uniformly



80-120 SMALL SEPTA

cross section of internal cone

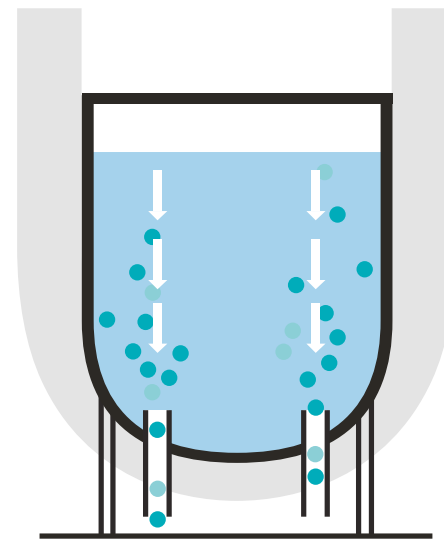


Internal Cone Design Advantages

- Fast and complete spent carbon removal
- No carbon heel remaining
- Better water distribution through carbon bed
- Higher carbon utilization
- Even bed expansion during backwash
- Less time/water required for exchanges

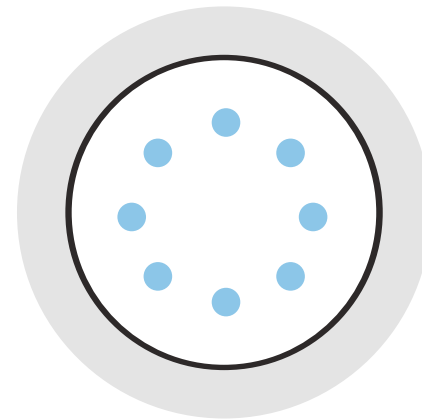
COMPETITOR EXTERNAL UNDERDRAIN

causes stagnant areas and uneven flow



8 LARGE SEPTA

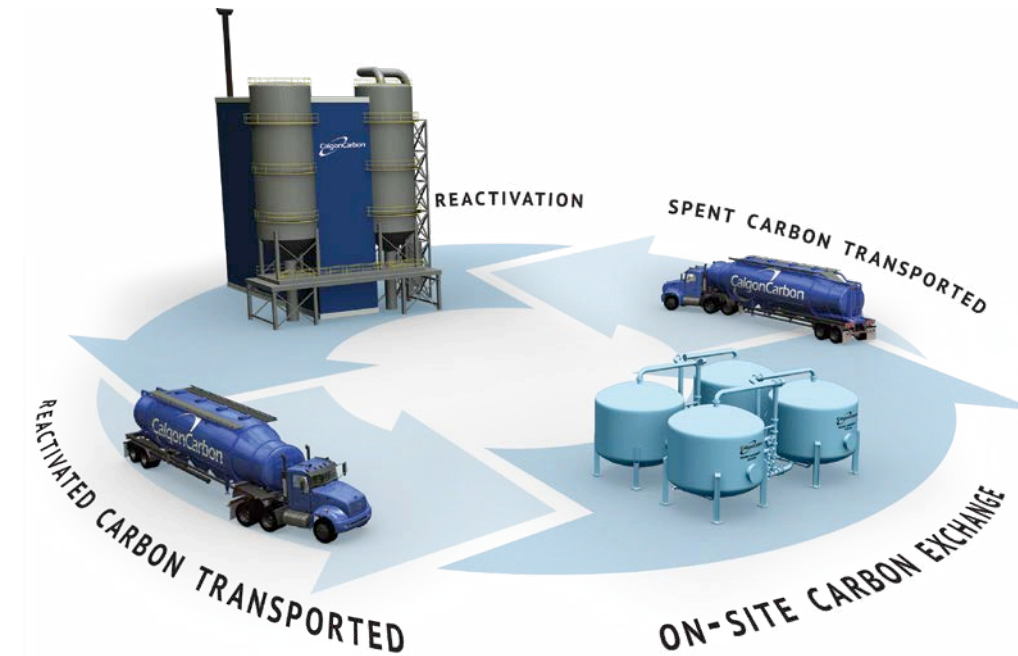
cross section of external underdrain



External Underdrain Limitations

- Inefficient spent carbon removal
- Potential for carbon heel
- Increased likelihood for channeling
- Lower carbon utilization
- Uneven bed expansion during backwash
- More time/water required for exchanges

Reactivation



Carbon reactivation is a thermal treatment process in which adsorbed chemical constituents are removed from spent activated carbon and thermally destroyed. Carbon is then reusable and can be returned to service.

Calgon Carbon has 5 reactivation facilities servicing North America

Carbon reactivation is a thermal treatment process in which adsorbed chemical constituents are removed from spent activated carbon and thermally destroyed. The carbon's internal surface area is restored, and the reactivated carbon is then reusable and can be returned to service.

Calgon Carbon reactivation services ensure the destruction of contaminants, liability reduction, and recycle of carbon.

Contact your sales representative or applications engineer about spent carbon acceptance.

recycle
reduce
reuse

Industrial Reactivation

Non-hazardous liquid and vapor-phase carbons are returned to Calgon Carbon sites to be reactivated, and virgin-quality reactivated material is provided to the customer. A Certificate of Reactivation can be provided upon request.

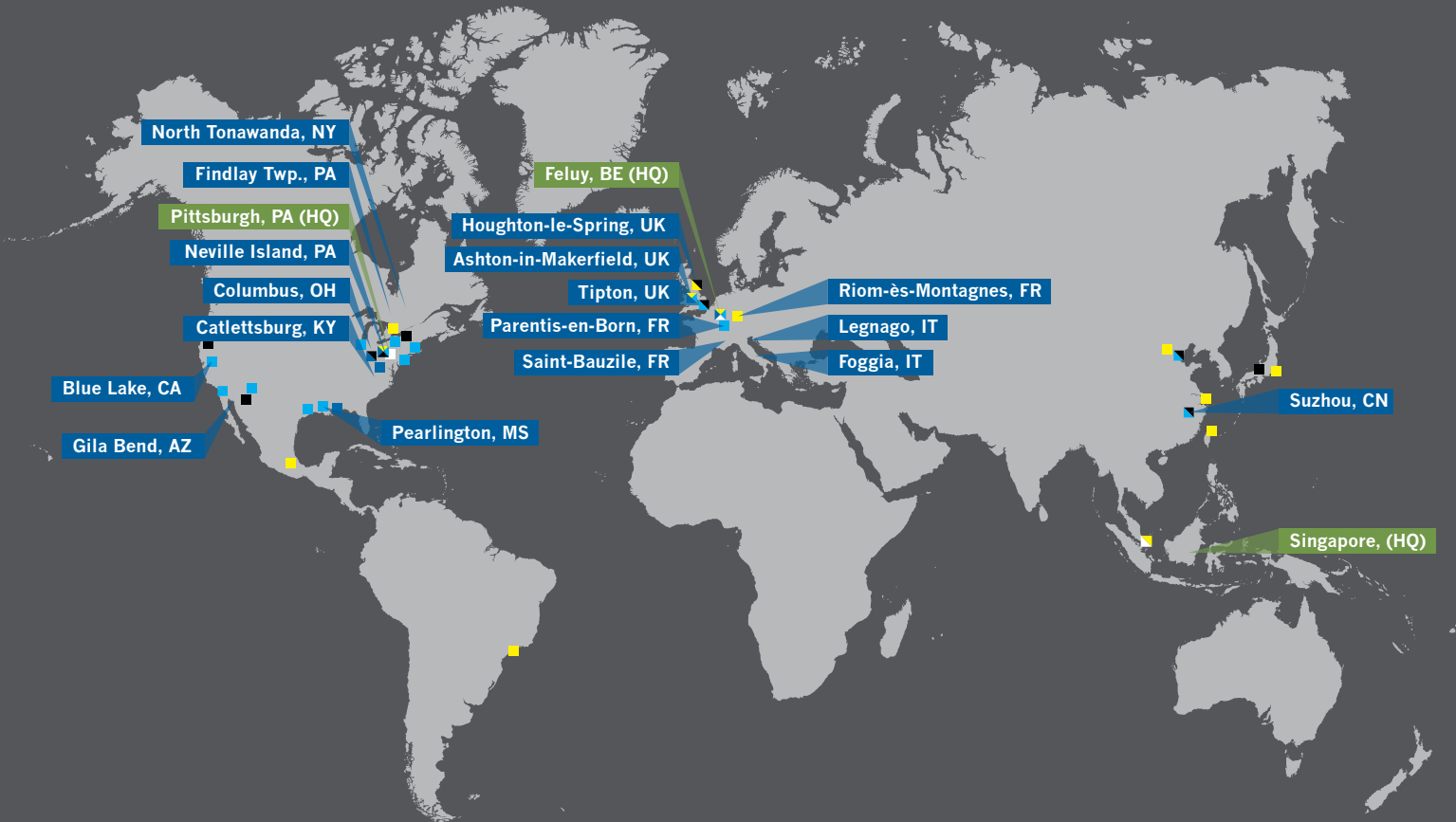
RCRA Industrial Reactivation

RCRA hazardous spent carbon can be reactivated at several permitted Calgon Carbon facilities, reducing customer liability for disposal of material. A Certificate of Reactivation can be provided. A Certificate of Destruction can be provided upon request.

Food-Grade Custom Reactivation

Spent food-grade carbon can be reactivated as its own unique batch, and the same batch of carbon is returned for reuse.

Your Global Partner



calgoncarbon.com

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