



January 22, 1992

Route 3, Box 7
Gallup, New Mexico
87301

505
722-3833

Herb Grover
Permitting Section
Hazardous and Radioactive Waste Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, New Mexico 87502

Re: Recycle Project

Dear Herb:

Enclosed is Giant's proposal for a recycling project to recover BTEX from the effluent vapor stream of the air strippers that are currently in operation.

You will notice that Giant has abandoned the original concept of the liquid scrubber that we discussed on January 8, 1992. We could not get assurances from Nalco that we could expect 95% recovery with their product.

Activated carbon systems have been used successfully for some time now. Giant originally rejected these systems due to the high cost of disposal of spent carbon media. After some head scratchin', we found an acceptable injection point for the recovered BTEX and oxygen. This allows us to regenerate the carbon media on-site and recover all the hydrocarbon.

If you require additional data or information, do not hesitate to contact me at (505) 722-0227.

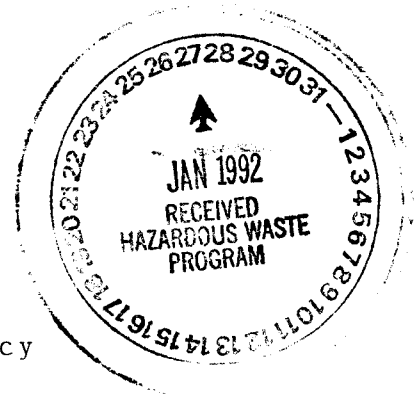
Sincerely,

Lynn Shelton
Environmental Assistant
Ciniza Refinery

TLS:sp

cc: Rich Mayer, Environmental Protection Agency

Jim Shively, Permitting Section
Air Quality Bureau, NMED



ACTIVATED CARBON SYSTEM

Giant proposes to build an Activated Carbon Stripper System (Figure 1) to capture and recycle Benzene, Toluene, Ethyl Benzene, and Total Xylenes (BTEX) from the vapor effluent of the Air Stripper System now in operation.

Essentially, the Activated Carbon System (ACS) will consist of a secondary steam heater and a canister for the carbon filter, plus the necessary piping.

Vapor from the air strippers is diverted through 12" piping to the secondary steam heater. Due to the fact that the air stripper effluent is water saturated, the heater raises the temperature from 115 Deg.F to 150 Deg.F, lowers the relative humidity to <50%. This is necessary as the carbon filter media is most effective at <50% RH (Above 50% RH, water migrates into the pores of the carbon at an accelerated rate and prevents a complete exchange of hydrocarbon.) (Figure 2)

The heated stream then passes through the carbon filter. Giant tentatively plans to use Westates' KP-601 Activated Carbon as filter media, a bituminous coal based catalyst in 4mm pellets. The removable filters will be taken to the process units for regeneration with heat and air (Figure 4). The recovered hydrocarbon and air mixture will be injected into the straight run to caustic scrubber line.

Filters will be exchanged and regenerated on a weekly basis, unless conditions require otherwise. Hydrocarbon removal will be verified by sampling the effluent of the ACS.

A table of values (Figure 5) is included to illustrate the anticipated BTX recovery from the Air Stripper effluent stream. Giant expects 90% recovery which would be a net reduction in BTEX emissions of 9816#/yr (4.91 tons). A secondary bonus will be reduction of other incidental hydrocarbon in the air stripper effluent stream.

ACTIVATED CARBON STRIPPER SYSTEM FIGURE 1

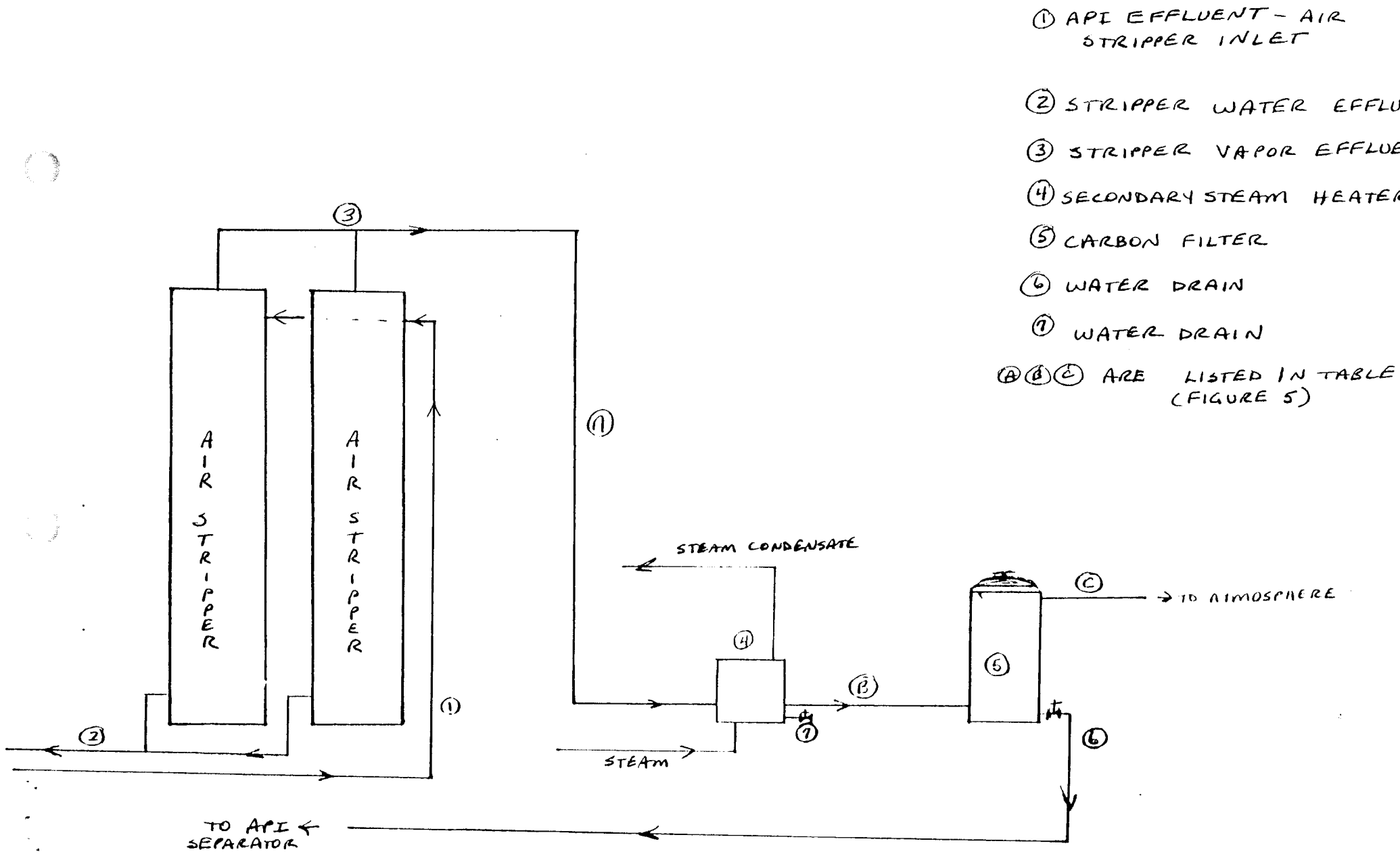
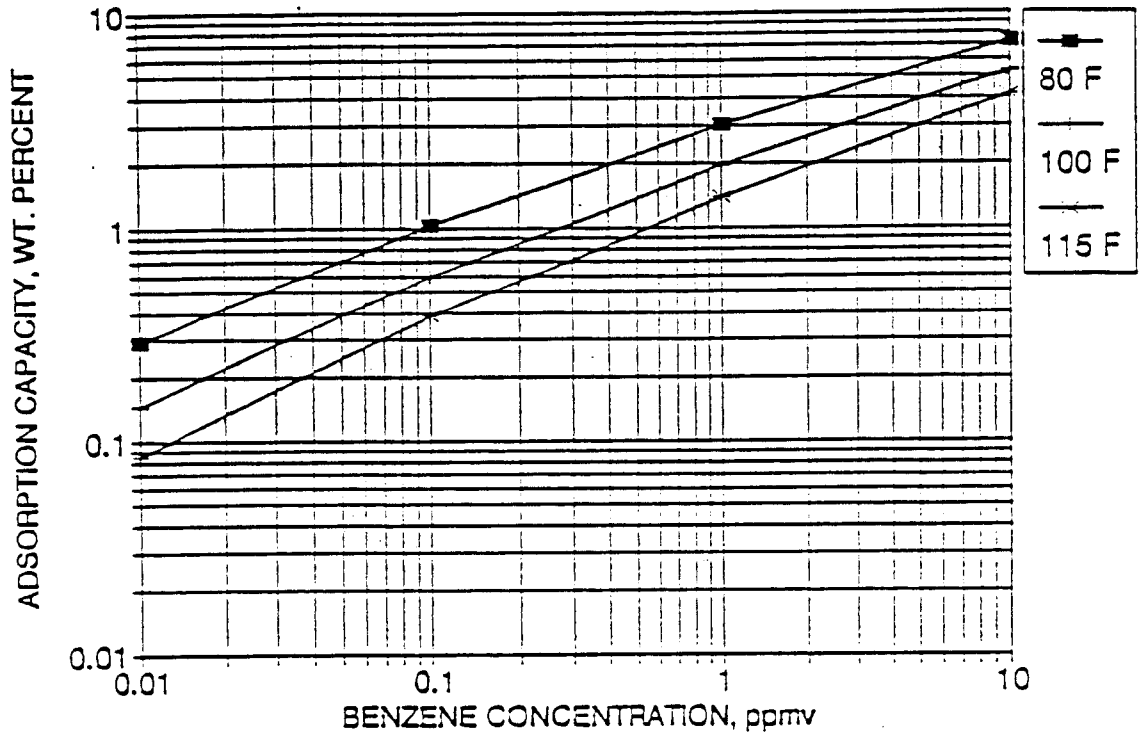
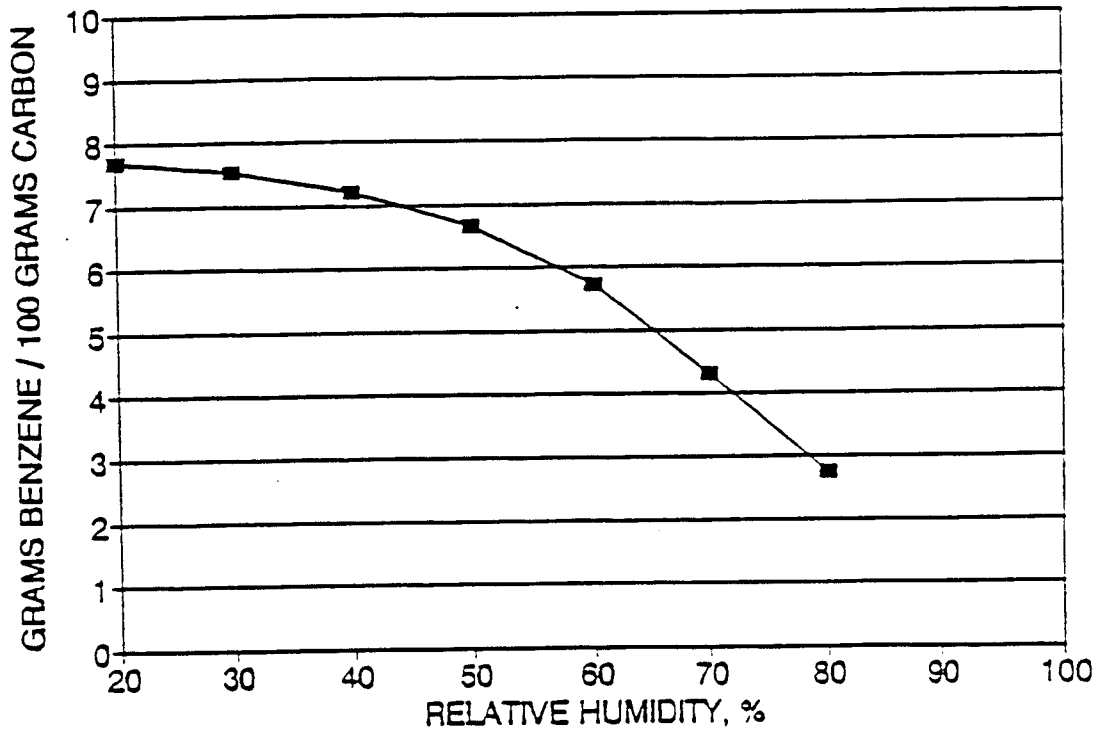


FIGURE 2

BENZENE ADSORPTION CAPACITY
EFFECT OF TEMPERATURE AT LOW RH



RELATIVE HUMIDITY AND BENZENE RETENTIVITY
24 C, 10 ppmv BENZENE



Quality Certified

KP-601

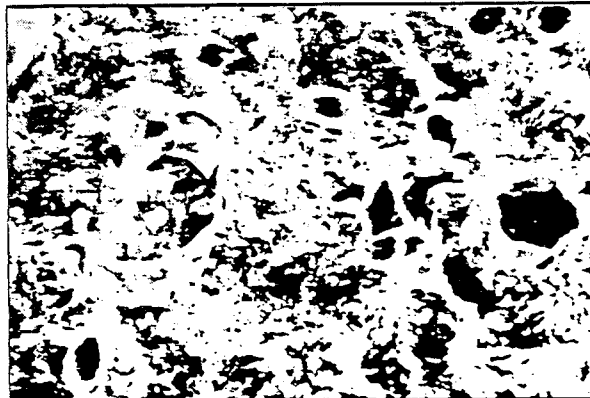
Vapor Phase Activated Carbon

DESCRIPTION

Westates' KP-601 is a pelletized activated carbon designed for enhanced performance of solvent recovery systems and other air pollution control devices featuring insitu steam regeneration. Manufactured from a unique coal substrate, KP-601 exhibits the high adsorption capacities and low retentivities for industrial solvents required for rapid adsorption/desorption cycling. The low pressure drop, high working capacities and low energy requirements for stripping make KP-601 the best value for most applications.

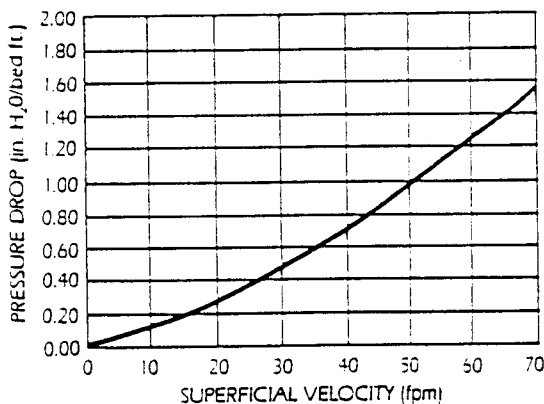
QUALITY CERTIFIED

The process for manufacturing activated carbons involves procedures with many variables that require strict quality control. Westates maintains a modern ASTM quality control laboratory to certify that Westates products meet or exceed all required specifications.



Westates KP-601 (250x)

PRESSURE DROP



SAFETY

Under certain conditions, some chemical compounds may oxidize, decompose, or polymerize in the presence of activated carbon. This could result in temperature increases sufficient to cause ignition. As a result, particular care must be taken with compounds having peroxide-forming tendencies.

WESTATES CAPABILITIES

Westates has the facilities for manufacturing, regenerating and characterizing activated carbon. Selected high quality carbons are also available from other sources giving Westates the capability of supplying the best carbon for your treatment needs. We have more than 20 years experience in the design of activated carbon adsorption systems. Our technical staff provides expert guidance in selecting the right system for your needs. Our laboratory is fully equipped to provide complete quality control and a continuing analysis of your carbon to maintain maximum efficiency.

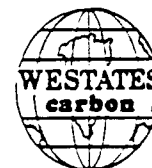
SPECIFICATIONS

Size	4mm Pellet
Type	Bitum. Coal
CTC - Typical	65%
Retentivity - Typical	28%
Surface Area (B.E.T.) Min.	1100
Pore Volume	.7 cc/g
Void Fraction	40%
Moisture Max.	1%
Hardness No. Min.	95
Apparent Density - Typical	.42 g/cc 27 lb./ft ³

APPLICATIONS

- Solvent Recovery
- Impregnation Substrate
- Insitu Regeneration
- Catalyst Support
- Pollution Control Devices
- VOC Adsorption Systems

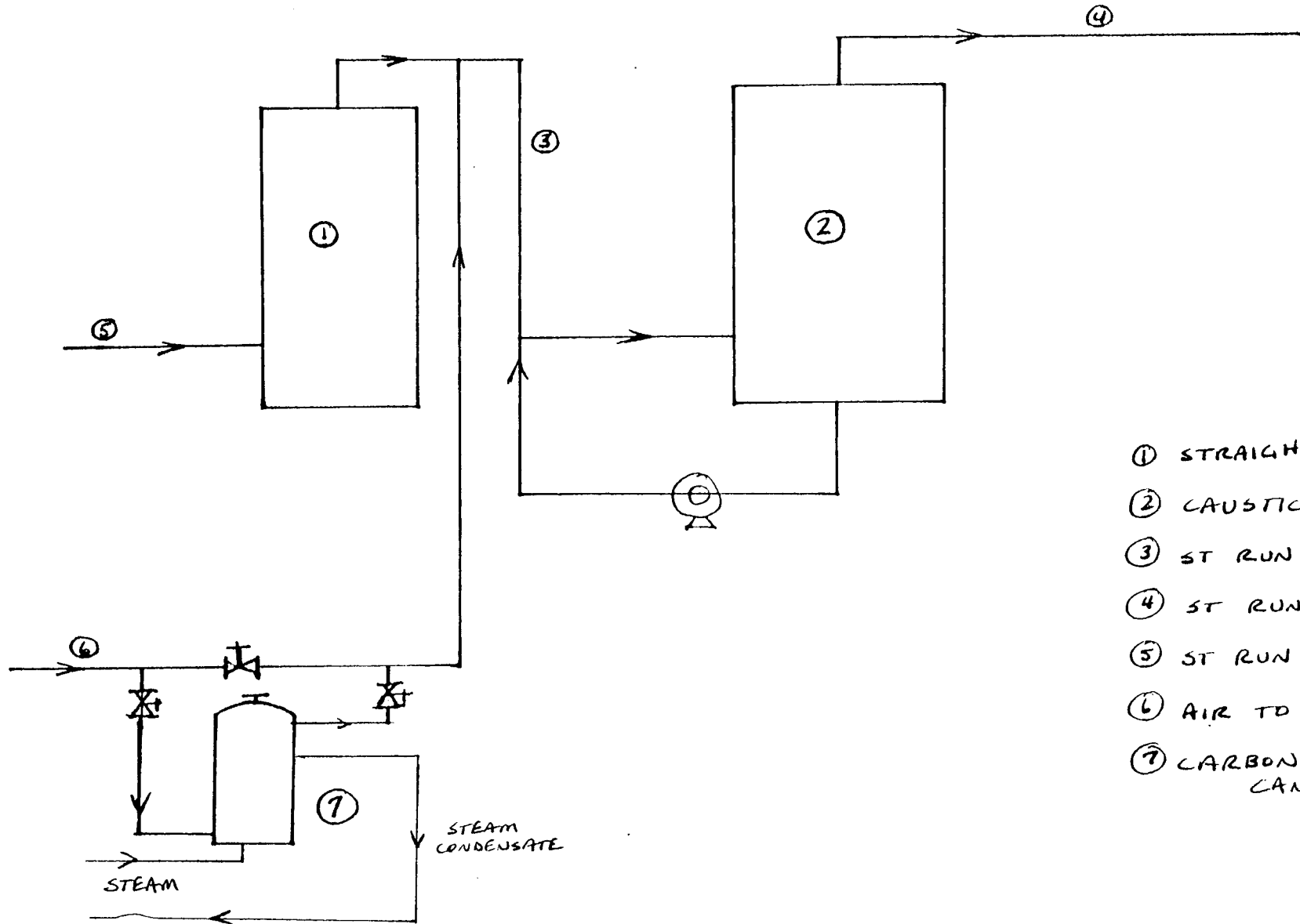
All information presented here is believed to be reliable and in accordance with accepted engineering practice. However, Westates makes no warranties as to the completeness of the information. Users should evaluate the suitability of each product to their own particular application. In no case will Westates be liable for any special, indirect, or consequential damages arising from the sale, resale, or misuse of its products.



**ACTIVATED
CARBON
SYSTEMS**

WESTATES CARBON, INC.
2130 Leo Ave., Los Angeles, CA 90040
PHONE: (213) 722-7500
FAX: (213) 722-8207 TWX: 910-321-2355

CARBON REGENERATION SYSTEM FIGURE 4



- ① STRAIGHT RUN GAS
- ② CAUSTIC SCRUBBER
- ③ ST RUN TO CAUSTIC
- ④ ST RUN TO STORAGE
- ⑤ ST RUN INLET
- ⑥ AIR TO UNIT
- ⑦ CARBON REGENERATION CANISTER

TABLE OF VALUES

FIGURE 5

UNITS	ITEM	STREAMS (SEE FIGURE 1)		
		A	B	C
lb/HR	Air	18316	18316	18316
SCFM	Air	4000	4000	4000
lb/HR	Water	1493	1493	1493
deg F	Temperature	115	150	150
%	Humidity	100	50	50
lb/HR	BTEX*	2.3	2.3	.23
BTU/lb	Air	120	130	
Heat Input (115-150 deg)			184,000 BTU/hr	

* Benzene, Toluene, Ethyl Benzene, and Total Xylenes

AIR = 4000 CFM * .076 LB/SEC * 60 MIN

BENZENE = 150 ppm/water * 8.3 lb/gal * (15/1000000) * 60 min

WATER = .08149 lb water/lb air
 = 18316 / .08149
 = 1493 lb/hr