ENGINEERING EVALUATION
CONOCOPHILLIPS SAN FRANCISCO REFINERY; PLANT 16
APPLICATION 9498

BACKGROUND

ConocoPhillips has applied to double the permitted capacity for the S-386 PACT (Powdered Activated Carbon Treatment) Regeneration Sludge Thickener from 1,800 gal/hr to 3,600 gal/hr. S-386 is a rotary sludge thickener with a 44,000 gallon capacity that is part of the facility wastewater treatment system. This proposed change would correct an error on the original data form submitted for S-386 and does not reflect a physical or operational change.

The PACT system was permitted in 1987 in Application 483. A copy of the evaluation for Application 483 is attached. The PACT is an odor-control system for the wastewater treatment system. Odor control is achieved by mixing powdered activated carbon with the effluent from the DAF Unit (S-1007). At the wastewater clarifiers (S-383, 384) the carbon is removed from the effluent stream along with other solids in the form of sludge. S-386 reduces the volume of this sludge prior to further sludge treatment.

The original data form (copy attached) indicates that S-386 has a maximum operating rate of 1.8 thousand gallons per hour, or 1,800 gal/hr. However, ConocoPhillips indicates that the true maximum operating rate has always been 3,600 gal/hr. This error was not identified until the Major Facility Permit made explicit both the hourly and annual throughput limits; S-386 was not previously subject to explicit throughput limits.

The 1,800 gal/hr limit currently appears in Section VI, Condition 20989, Part A and in Table VII-G of the Major Facility Permit. ConocoPhillips has proposed to double both the maximum hourly operating rates and annual throughput limits:

Table VII – G
Applicable Limits and Compliance Monitoring Requirements

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
VOC	BAAQMD Condition 1440, Part 4.c	Y		no detectable VOC emissions	BAAQMD Condition 1440, Part 5	P/SA	VOC analyzer
Through-put	BAAQMD Condition 20989, Part A	Y		S-385: 3.68 E 9 gal/yr S-386: 3.2~~1.6~~ E 7 gal/yr, S-387: 7.884 E 6 gal/yr S-390: 7.884 E 6 gal/yr S-392: 7.884 E 6 gal/yr	BAAQMD Condition 20989, Part A	P/M	records

Condition 20989:

source number	hourly / daily throughput limit	annual throughput limit (any consecutive 12-month period unless otherwise specified)
S-386	3600~~1800~~ gal/hr	3.2~~1.6~~ E7 gal

EMISSIONS

In the evaluation for Application 483, emissions were quantified for wastewater sumps, wastewater storage tanks, the API Separator and the DAF unit. No emissions were attributed to any other devices in this application, including S-386. This conclusion was apparently based on the fact that the sludge thickener handles solids and liquids which have already been processed through the DAF Unit and which have been mixed with powdered activated carbon which would tend to adsorb residual organic compounds. Sludge thickeners are not identified in the NSPS or U.S. EPA's AP-42 document as significant sources of emissions. Thus, the throughput at S-386 was not a factor in the calculated emissions for this source in Application 483, and a higher throughput would not have resulted in higher calculated emissions in Application 483.

Because S-386 has not been modified since it was permitted in Application 483, the proposed changes to permit conditions do not reflect a real increase in emissions. And because emissions at S-386 are not expected to be significant, regardless of the unit's throughput, no adjustment is required to the cumulative increase as a result of the proposed changes. Thus, no emission increase will result because of the proposed changes.

PLANT CUMULATIVE INCREASE

There is no change to the cumulative increase because no emission increase is permitted in this application.

TOXIC RISK SCREENING ANALYSIS

There is no increase in toxic emissions because no emission increase is permitted in this application.

STATEMENT OF COMPLIANCE

Applicable Regulations

S-386 will continue to be subject to the same regulatory requirements identified in the Major Facility Permit.

This application is categorically exempt from CEQA in accordance with Regulation 2-1-312.1 because it does not permit an increase in emissions.

BACT and Offsets

BACT and offset requirements are not triggered because no emission increase is permitted in this application.

PERMIT CONDITIONS

Condition 20989

A. THROUGHPUT LIMITS

The following limits are imposed through this permit in accordance with Regulation 2-1-234.3. Sources require BOTH hourly/daily and annual throughput limits (except for tanks and similar liquid storage sources, and small manually operated sources such as cold cleaners which require only annual limits). Sources with previously imposed hourly/daily AND annual throughput limits are not listed below; the applicable limits are given in the specific permit conditions listed above in this section of the permit. Also, where hourly/daily capacities are listed in Table II-A, these are considered enforceable limits for sources that have a New Source Review permit. Throughput limits imposed in this section and hourly/daily capacities listed in Table II-A are not federally enforceable for grandfathered sources. Grandfathered sources are indicated with an asterisk in the source number column in the following table. Refer to Title V Standard Condition J for clarification of these limits.

In the absence of specific recordkeeping requirements imposed as permit conditions, monthly throughput records shall be maintained for each source.

source number	hourly / daily throughput limit	annual throughput limit (any consecutive 12-month period unless otherwise specified)
15	Table II-A	19.9 E 6 therm total at S-15 through S-19
16	Table II-A	19.9 E 6 therm total at S-15 through S-19
17	Table II-A	19.9 E 6 therm total at S-15 through S-19
18	Table II-A	19.9 E 6 therm

		total at S-15 through S-19
19	Table II-A	19.9 E 6 therm
		total at S-15 through S-19
20	Table II-A	1.9 E 6 therm
21	Table II-A	0.7 E 6 therm
22	Table II-A	2.6 E 6 therm
29	Table II-A	8.6 E 6 therm
30	Table II-A	4.2 E 6 therm
31	Table II-A	1.7 E 6 therm
43	Table II-A	19.1 E 6 therm
44	Table II-A	3.8 E 6 therm
*97	NA for tank	1.1 E 7 bbl
*100	NA for tank	4.38 E 6 bbl
101	NA for tank	3.68 E 9 gal
102	NA for tank	3.68 E 9 gal
106	NA for tank	3.68 E 9 gal
*107	NA for tank	8.76 E 6 bbl
*110	NA for tank	1.40 E 7 bbl
*111	NA for tank	1.31 E 7 bbl
*112	NA for tank	1.49 E 7 bbl
*113	NA for tank	1.49 E 7 bbl
*114	NA for tank	1.31 E 7 bbl
*115	NA for tank	4.38 E 6 bbl
*117	NA for tank	8.76 E 5 bbl
*118	NA for tank	15,000 bbl
*121	NA for tank	3.52 E 4 bbl
*122	NA for tank	4.38 E 6 bbl
*123	NA for tank	5.1 E 6 bbl
*124	NA for tank	4.38 E 6 bbl
*125	NA for tank	1.05 E 7 bbl
*126	NA for tank	1.05 E 7 bbl
*128	NA for tank	5.1 E 6 bbl
129	NA for tank	4.6 E 6 bbl
133	NA for tank	8.76 E 5 bbl
*134	NA for tank	1.31 E 7 bbl
*139	NA for tank	2.74 E 6 bbl
*140	NA for tank	2.74 E 6 bbl
150	NA for tank	4.38 E 7 bbl
151	NA for tank	4.38 E 7 bbl
*177	NA for tank	2.63 E 7 bbl
178	NA for tank	3.50 E 7 bbl
183	NA for tank	4.38 E 5 bbl
184	NA for tank	4.38 E 6 bbl
*186	NA for tank	4.38 E 6 bbl
*193	NA for tank	100 bbl
*194	NA for tank	100 bbl
*195	NA for tank	5.0 E 4 bbl
196	NA for tank	5.0 E 4 bbl
*216	NA for tank	4.6 E 6 bbl
*238	NA for tank	1.00 E 6 bbl
*239	NA for tank	8.76 E 6 bbl
*254	NA for tank	7.01 E 7 bbl
*255	NA for tank	7.01 E 7 bbl
*256	NA for tank	7.01 E 7 bbl

*257	NA for tank	7.01 E 7 bbl
*258	NA for tank	7.01 E 7 bbl
*259	NA for tank	7.01 E 7 bbl
*261	NA for tank	7.01 E 7 bbl
294	20 gpm	400,000 gallons
*301	Table II-A	89,425 long ton for S-301, 302, 303
*302	Table II-A	89,425 long ton for S-301, 302, 303
*303	Table II-A	89,425 long ton for S-301, 302, 303
305	Table II-A	9.21 E 6 bbl
306	Table II-A	7.67 E 6 bbl
307	Table II-A	1.39 E 7 bbl
*308	Table II-A	5.11 E 6 bbl
*309	Table II-A	6.11 E 6 bbl
*318	Table II-A	3.3 E 7 bbl
*319	Table II-A	4.32 E 6 bbl
324	Table II-A	3.68 E 9 gallons
*334	NA for tank	6.51 E 6 bbl
336	Table II-A	9.2 E 6 therm
337	Table II-A	2.8 E 6 therm
*338	Table II-A	6.6 E 10 ft3
*339	Table II-A	5.26 E 7 bbl
340	NA for tank	7.67 E 6 bbl
341	NA for tank	4.38 E 7 bbl
342	NA for tank	4.38 E 7 bbl
343	NA for tank	4.38 E 7 bbl
351	Table II-A	8.4 E 6 therm
360	NA for tank	2.78 E 6 bbl
370	Condition 12121	4.03 E6 bbl
371	Table II-A	4.8 E6 therm for S-371/372
372	Table II-A	4.8 E6 therm for S-371/372
380	0.3 ton/hr	2,628 ton
381	420,000 gal/hr	3.68 E 9 gal
382	420,000 gal/hr	3.68 E 9 gal
383	420,000 gal/hr	3.68 E 9 gal
384	420,000 gal/hr	3.68 E 9 gal
385	Table II-A	3.68 E 9 gal
386	3600~~1800~~ gal/hr	3.2~~1.6~~ E 7 gal
387	Table II-A	7.884 E 6 gal
388	Table II-A	153,300 ton
389	0.21 ton/hr	1840 ton
390	N/A for tank	7.884 E 6 gal
392	N/A for tank	7.884 E 6 gal
400	N/A for sump	3.68 E 9 gal
401	N/A for sump	3.68 E 9 gal
425	Table II-A	25,000 bbl/day at S-425 and S-426 (annual

		average)
426	Table II-A	25,000 bbl/day at S-425 and S-426 (annual average)
432	Table II-A	2.8 E6 bbl
435	Table II-A	6.6 E 6 bbl
436	Table II-A	4.7 E 6 bbl
437	Table II-A	9.1 E 9 ft3
*1001	Table II-A	89,425 long ton for S-1001, 1002, 1003
*1002	Table II-A	89,425 long ton for S-1001, 1002, 1003
*1003	Table II-A	89,425 long ton for S-1001, 1002, 1003
1007	Table II-A	3.68 E 9 gal
1008	Table II-A	3.68 E 9 gal
1009	Table II-A	3.68 E 9 gal

RECOMMENDATION

Issue Permit to Operate to the ConocoPhillips San Francisco Refinery for:

S-386 PACT Regeneration Sludge Thickener (F-211)

Also, submit a minor revision to U.S. EPA indicating the changes made to Condition 20989, and a corresponding change to Table VII-G of the Major Facility Permit.

By: _____

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