



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

September 21, 2012

Mr. Gerardo C. Rios
Chief, Permits Office
U.S. EPA Region IX, AIR 3
75 Hawthorne Street
San Francisco, CA 94105-3901

Dear Mr. Rios:

Subject: Abbott Cardiovascular Systems (I.D. 45489) Title V Permit Revision

Abbott Cardiovascular Systems (ID 45489) has proposed to revise their Title V Permit by converting three boilers from Permits to Construct to Permits to Operate status, with a change of condition.

This is a medical device manufacturing facility located at 26531 Ynez Rd., Temecula, CA. The proposed permit revision is considered as a "de minimis significant permit revision" to their Title V Permit. Enclosed for your review are the permit evaluation and proposed permit for the proposed permit revision. With your receipt of the proposed Title V permit revision today, we will note that the EPA 45-day review period will begin on September 21, 2012.

If you have any questions or need additional information regarding the proposed permit revision, please contact Ms. Dixie Richards at (909) 396-2395.

Sincerely,

A handwritten signature in black ink, appearing to read "Brian L. Yeh".

Brian L. Yeh
Senior Manager
Mechanical, Chemical, Public Services

BLY:DR

Enclosure

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

**Facility Equipment and Requirements
(Section D)**

This section consists of a table listing all permitted equipment at the facility, facility wide requirements, all individual Permits to Construct and Permits to Operate issued to various equipment at the facility, and Rule 219-exempt equipment subject to source-specific requirements. Each permit and Rule 219-exempt equipment will list operating conditions including periodic monitoring requirements, and applicable emission limits and requirements that the equipment is subject to. Also included is the rule origin and authority of each emission limit and permit condition.

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

PERMITTED EQUIPMENT LIST

THE FOLLOWING IS A LIST OF ALL PERMITS TO CONSTRUCT AND PERMITS TO OPERATE AT THIS FACILITY:

| Application number | Permit to Operate number | Equipment description |
|---------------------------|---------------------------------|-------------------------------------|
| 317616 | F4131 | I C E (>500 HP) EM ELEC GEN DIESEL |
| 358501 | F22021 | I C E (>500 HP) EM ELEC GEN-DIESEL |
| 518886 | G13003 | SCRUBBER |
| 518885 | G13004 | SCRUBBER |
| 419503 | F71623 | AIR POLLUTION CONTROL SYSTEM |
| 529249 | G16455 | LASER CUTTING MACHINE |
| 443789 | F83293 | I C E (>500 HP) EM ELEC GEN-DIESEL |
| 447835 | F83295 | ETHYLENE OXIDE STERILIZER, HOSPITAL |
| 447836 | F83294 | ETHYLENE OXIDE STERILIZER, HOSPITAL |
| 447837 | F83299 | AIR POLLUTION CONTROL SYSTEM |
| 518884 | G13002 | AIR POLLUTION CONTROL SYSTEM |
| 497147 | G5761 | AIR POLLUTION CONTROL SYSTEM |
| 487407 | | BOILER (5-20 MMBTU/HR) NAT GAS ONLY |
| 487409 | | BOILER (5-20 MMBTU/HR) NAT GAS ONLY |
| 487410 | | BOILER (5-20 MMBTU/HR) NAT GAS ONLY |
| 487445 | F99218 | BOILER (<5 MMBTU/HR) NAT GAS ONLY |
| 487556 | F99219 | BOILER (<5 MMBTU/HR) NAT GAS ONLY |
| 487447 | F99220 | BOILER (<5 MMBTU/HR) NAT GAS ONLY |
| 487448 | F992214 | BOILER (<5 MMBTU/HR) NAT GAS ONLY |
| 524958 | G15506 | EXTRUDER |
| 526846 | G15507 | EXTRUDER |

NOTE: EQUIPMENT LISTED ABOVE THAT HAS NO CORRESPONDING PERMIT TO OPERATE NUMBER IS ISSUED PERMIT TO CONSTRUCT. THE ISSUANCE OR DENIAL OF ITS PERMIT TO OPERATE IS SUBJECT TO ENGINEERING FINAL REVIEW. ANY OTHER APPLICATIONS THAT ARE STILL BEING PROCESSED AND HAVE NOT BEEN ISSUED PERMITS TO CONSTRUCT OR PERMITS TO OPERATE WILL NOT BE FOUND IN THIS TITLE V PERMIT.

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

FACILITY WIDE CONDITION(S)

Condition(s):

1. EXCEPT FOR OPEN ABRASIVE BLASTING OPERATIONS, THE OPERATOR SHALL NOT DISCHARGE INTO THE ATMOSPHERE FROM ANY SINGLE SOURCE OF EMISSIONS WHATSOEVER ANY AIR CONTAMINANT FOR A PERIOD OR PERIODS AGGREGATING MORE THAN THREE MINUTES IN ANY ONE HOUR WHICH IS:
 - A. AS DARK OR DARKER IN SHADE AS THAT DESIGNATED NO. 1 ON THE RINGLEMANN CHART, AS PUBLISHED BY THE UNITED STATES BUREAU OF MINES; OR
 - B. OF SUCH OPACITY AS TO OBSCURE AN OBSERVER'S VIEW TO A DEGREE EQUAL TO OR GREATER THAN DOES SMOKE DESCRIBED IN SUBPARAGRAPH (A) OF THIS CONDITION. [RULE 401]
2. THE OPERATOR SHALL NOT USE FUEL OIL CONTAINING SULFUR COMPOUNDS IN EXCESS OF 15 PPM BY WEIGHT. [RULE 431.2]
3. THE OPERATOR SHALL NOT USE GASEOUS FUEL CONTAINING SULFUR COMPOUNDS IN EXCESS OF 40 PPMV CALCULATED AS HYDROGEN SULFIDE AVERAGED OVER FOUR HOURS. [RULE 431.1].

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

PERMIT TO OPERATE

Permit No. F4131

A/N 317616

Equipment Description:

INTERNAL COMBUSTION ENGINE, CATERPILLAR, MODEL 3512 TA, TWELVE CYLINDER, DIESEL FUELED, 1568 B.H.P., TURBOCHARGED/AFTERCOOLED, DRIVING AN EMERGENCY ELECTRICAL GENERATOR.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. THE OPERATING TIME OF THIS ENGINE SHALL NOT EXCEED 199 HOURS IN ANY ONE YEAR.
[RULE 1110.2, 1304(a)(4)-OFFSET AND MODELING EXEMPTION]
4. A NON-RESETTABLE TIMER SHALL BE MAINTAINED TO INDICATE THE ENGINES ELAPSED OPERATING TIME.
[RULE 1110.2, 1304(a)(4)-OFFSET AND MODELING EXEMPTION]
5. AN ENGINE OPERATING LOG LISTING THE DATE OF OPERATION, THE ELAPSED OPERATING TIME, IN HOURS, AND THE REASON FOR OPERATION SHALL BE KEPT AND MAINTAINED ON FILE FOR A MINIMUM OF FIVE YEARS AND MADE AVAILABLE TO AQMD PERSONNEL UPON REQUEST.
[RULE 1110.2, 1304(a)(4)-OFFSET AND MODELING EXEMPTION]
6. THIS ENGINE SHALL HAVE THE FUEL INJECTION TIMING RETARDED BY FOUR DEGREES WITH RESPECT TO STANDARD TIMING.
[RULE 1303(a)(1)-BACT]

Emissions And Requirements:

7. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS
[Rule 404]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

PERMIT TO OPERATE

**Permit No. F22021
A/N 358501**

Equipment Description:

INTERNAL COMBUSTION ENGINE, CATERPILLAR, 16 CYLINDERS, TURBOCHARGED, AFTERCOOLED, MODEL NO. 3516 DITA (1750 KW), 2518 BHP, DIESEL-FUELED, DRIVING AN EMERGENCY ELECTRICAL GENERATOR.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. A TIMER SHALL BE MAINTAINED TO INDICATE THE ENGINE ELAPSED OPERATING TIME.
[RULE 1303(a)(1)-BACT]
4. THE OPERATING TIME OF THIS ENGINE SHALL NOT EXCEED 72 HOURS IN ANY ONE YEAR.
[RULE 1303(a)(1)-BACT]
5. AN ENGINE OPERATING LOG LISTING THE DATE OF OPERATION, THE ELAPSED TIME, IN HOURS, AND THE REASON FOR OPERATION SHALL BE KEPT AND MAINTAINED ON FILE FOR A MINIMUM OF TWO YEARS AND MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.
[RULE 1303(a)(1)-BACT]
6. THE FUEL INJECTION TIMING OF THIS ENGINE SHALL BE SET AND MAINTAINED AT 4 DEGREES RETARDED RELATIVE TO PRODUCTION TIMING AS ESTABLISHED BY CATERPILLAR IN PRODUCT NEWS BULLETIN 'REQUIREMENTS TO COMPLY WITH SCAQMD CERTIFIED EQUIPMENT.
[RULE 1303(a)(1)-BACT]

Emissions And Requirements:

7. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:
PM: RULE 404. SEE APPENDIX B FOR EMISSION LIMITS
[RULE 404]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

PERMIT TO OPERATE

Permit No. G13003

A/N 518886

Equipment Description

AIR POLLUTION CONTROL SYSTEM CONSISTING OF:

1. SCRUBBER, HARRINGTON, MODEL ECH 4, 4' -0" W. x 12' -0" L x 7' -3" H, WITH LANPAC POLYPROPYLENE PACKING MEDIA, SPRAY NOZZLES, AND MIST ELIMINATOR.
2. EXHAUST SYSTEM WITH TWO 5.36-HP BLOWERS, VENTING UP TO EIGHT BENCH TYPE ACID POLISHING BAYS.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. MATERIALS USED IN THIS EQUIPMENT SHALL NOT CONTAIN ANY TOXIC AIR CONTAMINANTS IDENTIFIED IN RULE 1401, TABLE I, WITH AN EFFECTIVE DATE OF SEPTEMBER 10, 2010 OR EARLIER, EXCEPT FOR SODIUM HYDROXIDE, PHOSPHORIC ACID, HYDROCHLORIC ACID, SULFURIC ACID, NITRIC ACID, AND ETHYLENE GLYCOLS.
[Rule 1401]
4. A DIFFERENTIAL PRESSURE GAUGE, INDICATING INCHES OF WATER COLUMN, SHALL BE INSTALLED AND MAINTAINED ACROSS THE SCRUBBER. THE DIFFERENTIAL PRESSURE ACROSS THE PACKING SHALL NOT EXCEED 2.0 INCHES OF WATER COLUMN WHEN THE EQUIPMENT IT SERVES IS IN OPERATION.
[RULE 1405]
5. A CONTINUOUS FLOW METER INDICATING THE FLOW RATE IN GALLONS PER MINUTE SHALL BE INSTALLED AND MAINTAINED ON THE RECIRCULATION LINE TO THE SCRUBBER. NOT LESS THAN 80 GALLONS PER MINUTE OF RECIRCULATING SCRUBBER SOLUTION SHALL BE SUPPLIED TO THE SCRUBBER SPRAY NOZZLES WHEN THE EQUIPMENT IT SERVES IS IN OPERATION.
[RULE 1405]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

6. AN AUTOMATIC PH METER AND CONTROLLER SHALL BE INSTALLED AND MAINTAINED TO CONTINUOUSLY MEASURE AND RECORD THE pH OF THE RECIRCULATION SCRUBBING SOLUTION. THE SCRUBBING SOLUTION SHALL BE MAINTAINED AT pH 8.0 OR HIGHER WHEN THE EQUIPMENT IT SERVES IS IN OPERATION.
[RULE 1405]

Periodic Monitoring:

7. A DAILY OPERATION RECORD OF THIS EQUIPMENT SHALL BE MAINTAINED IN A WRITTEN FORM. THE RECORD SHALL INCLUDE, AT A MINIMUM, THE MINIMUM PH OF THE SCRUBBING SOLUTION, DIFFERENTIAL PRESSURE ACROSS THE SCRUBBER, AND FLOW RATE OF THE SCRUBBING SOLUTION AND MAKE UP WATER. THESE RECORDS SHALL BE KEPT FOR A MINIMUM OF FIVE YEARS AND MADE AVAILABLE UPON REQUEST BY DISTRICT PERSONNEL.
[RULE 3004(a)(4) MONITORING AND RECORDKEEPING]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

PERMIT TO OPERATE

**Permit No. G13004
A/N 518885**

Equipment Description

AIR POLLUTION CONTROL SYSTEM CONSISTING OF:

1. SCRUBBER, HARRINGTON, MODEL ECH 4, 4' -0" W. x 12' -0" L x 7' -3" H, WITH LANPAC POLYPROPYLENE PACKING MEDIA, SPRAY NOZZLES, AND MIST ELIMINATOR.
2. EXHAUST SYSTEM WITH TWO 5.36-HP BLOWERS, VENTING UP TO EIGHT ACID POLISHING BAYS.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. MATERIALS USED IN THIS EQUIPMENT SHALL NOT CONTAIN ANY TOXIC AIR CONTAMINANTS IDENTIFIED IN RULE 1401, TABLE I, WITH AN EFFECTIVE DATE OF SEPTEMBER 10, 2010 OR EARLIER, EXCEPT FOR SODIUM HYDROXIDE, PHOSPHORIC ACID, HYDROCHLORIC ACID, SULFURIC ACID, NITRIC ACID, AND ETHYLENE GLYCOLS.
[Rule 1401]
4. A DIFFERENTIAL PRESSURE GAUGE, INDICATING INCHES OF WATER COLUMN, SHALL BE INSTALLED AND MAINTAINED ACROSS THE SCRUBBER. THE DIFFERENTIAL PRESSURE ACROSS THE PACKING SHALL NOT EXCEED 2.0 INCHES OF WATER COLUMN WHEN THE EQUIPMENT IT SERVES IS IN OPERATION.
[RULE 1405]
5. A CONTINUOUS FLOW METER INDICATING THE FLOW RATE IN GALLONS PER MINUTE SHALL BE INSTALLED AND MAINTAINED ON THE RECIRCULATION LINE TO THE SCRUBBER. NOT LESS THAN 80 GALLONS PER MINUTE OF RECIRCULATING SCRUBBER SOLUTION SHALL BE SUPPLIED TO THE SCRUBBER SPRAY NOZZLES WHEN THE EQUIPMENT IT SERVES IS IN OPERATION.
[RULE 1405]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

6. AN AUTOMATIC PH METER AND CONTROLLER SHALL BE INSTALLED AND MAINTAINED TO CONTINUOUSLY MEASURE AND RECORD THE pH OF THE RECIRCULATION SCRUBBING SOLUTION. THE SCRUBBING SOLUTION SHALL BE MAINTAINED AT pH 8.0 OR HIGHER WHEN THE EQUIPMENT IT SERVES IS IN OPERATION.
[RULE 1405]

Periodic Monitoring:

7. A DAILY OPERATION RECORD OF THIS EQUIPMENT SHALL BE MAINTAINED IN A WRITTEN FORM. THE RECORD SHALL INCLUDE, AT A MINIMUM, MINIMUM PH OF THE SCRUBBING SOLUTION, DIFFERENTIAL PRESSURE ACROSS THE SCRUBBER, AND FLOW RATE OF THE SCRUBBING SOLUTION AND MAKE UP WATER. THESE RECORDS SHALL BE KEPT FOR A MINIMUM OF FIVE YEARS AND MADE AVAILABLE UPON REQUEST BY DISTRICT PERSONNEL.
[RULE 3004(a)(4) MONITORING AND RECORDKEEPING]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

PERMIT TO OPERATE

Permit No. F71623

A/N 419503

Equipment Description:

AIR POLLUTION CONTROL SYSTEM CONSISTING OF:

1. CATALYTIC OXIDIZER, DONALDSON, MODEL ETO ABATOR, WITH 8.5 KW ELECTRICAL PREHEATER .
2. EXHAUST SYSTEM WITH A 3/4-H.P. BLOWER VENTING TO TWO STERILIZERS.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. CATALYST BED TEMPERATURE SHALL BE MAINTAINED ABOVE 280 DEGREES F AND NOT TO EXCEED 500 DEGREES F EXCEPT DURING START-UP OPERATIONS.
[RULE 1303(a)(1)-BACT]
4. THIS EQUIPMENT SHALL NOT BE PURGED OR AIRWASHED UNLESS IT IS VENTED TO THE AIR POLLUTION CONTROL EQUIPMENT, WHICH IS IN FULL USE AND HAS BEEN ISSUED A PERMIT TO OPERATE.
[RULE 1303(a)(1)-BACT]
5. THIS EQUIPMENT SHALL BE IN FULL USE WHEN THE STERILIZER IT SERVES IS IN OPERATION.
[RULE 1303(a)(1)-BACT]
6. THE STERILIZER EXHAUST SYSTEM SHALL BE LEAK FREE.
[RULE 1303(a)(1)-BACT]
7. LEAK INSPECTIONS SHALL BE CONDUCTED ONCE EVERY SIX MONTHS IN ACCORDANCE WITH RULE 1405.
[RULE 1405]
8. RECORDS OF THE LEAK INSPECTIONS SHALL BE MAINTAINED IN ACCORDANCE WITH RULE 1405, AND KEPT ON FILE FOR AT LEAST FIVE YEARS AND BE MADE AVAILABLE TO DISTRICT STAFF UPON REQUEST.
[Rue 1405]
9. THIS EQUIPMENT SHALL COMPLY WITH THE REQUIREMENTS OF RULE 1405.
[Rule 1405]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

PERMIT TO OPERATE

**Permit No. G13996
A/N 515810**

Equipment Description

LASER CUTTING AND LATHING SYSTEM, BUILDING A, CONSISTING OF:

1. 11 LASERS, SPI FIBER, EACH 100 WATTS MAXIMUM, 5 – 10 WATTS IN USE
2. 5 LASERS, LASAQ, EACH 250 WATTS MAXIMUM, 5 – 10 WATTS IN USE

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. THIS EQUIPMENT SHALL NOT PROCESS MORE THAN 6400 STENTS IN ANY ONE DAY.
[RULE 1401]
4. THIS EQUIPMENT SHALL NOT PROCESS MORE THAN 1280 STAINLESS STEEL STENTS IN ANY ONE DAY.
[RULE 1401]
5. MATERIALS USED IN THIS EQUIPMENT SHALL NOT CONTAIN ANY TOXIC AIR CONTAMINANTS IDENTIFIED IN RULE 1401, TABLE I, WITH AN EFFECTIVE DATE OF SEPTEMBER 10, 2010 OR EARLIER, EXCEPT FOR CHROMIUM (NOT TO EXCEED 21%), OR NICKEL (NOT TO EXCEED 15%).
[Rule 1401]

Periodic Monitoring

6. THE OPERATOR SHALL KEEP A DAILY RECORD OF THE NUMBER OF STENTS AND THE TYPE OF ALLOY PROCESSED. SUCH RECORD SHALL BE KEPT FOR A MINIMUM OF FIVE YEARS AND SHALL BE AVAILABLE TO DISTRICT STAFF UPON REQUEST.
[RULE 3004(a)(4) MONITORING AND RECORDKEEPING]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

PERMIT TO OPERATE

**Permit No. F83293
A/N 443789**

Equipment Description:

INTERNAL COMBUSTION ENGINE, CATERPILLAR, 6 CYLINDER, TURBOCHARGED, AFTERCOOLED, MODEL 3456 DITA AA, 764 BHP, DIESEL FUELED, DRIVING AN EMERGENCY ELECTRICAL GENERATOR.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. THE OPERATION OF THIS ENGINE BEYOND 20 HOURS PER YEAR FOR MAINTENANCE AND PERFORMANCE TESTING SHALL BE ALLOWED ONLY IN THE EVENT OF A LOSS OF GRID POWER OR UP TO 30 MINUTES PRIOR TO ROTATING OUTAGES, PROVIDED THAT THE UTILITY DISTRIBUTION COMPANY HAS ORDERED ROTATING OUTAGES IN THE CONTROL AREA WHERE THE ENGINE IS LOCATED, OR HAS INDICATED THAT THE DISTRIBUTION COMPANY IS EXPECTED TO ISSUE SUCH ORDER AT A CERTAIN TIME, AND THE ENGINE IS LOCATED IN THE UTILITY SERVICE BLOCK THAT IS SUBJECT TO THE ROTATING OUTAGE. ENGINE OPERATION SHALL BE TERMINATED IMMEDIATELY AFTER THE UTILITY DISTRIBUTION COMPANY ADVISES THAT A ROTATING OUTAGE IS NO LONGER IMMINENT OR IN EFFECT.
[RULE 1470]
4. THIS ENGINE SHALL NOT BE OPERATED MORE THAN A TOTAL OF 200 HOURS IN ANY ONE CALENDAR YEAR, WHICH INCLUDES NO MORE THAN 20 HOURS FOR MAINTENANCE AND PERFORMANCE TESTING.
[RULE 1470]
5. AN OPERATIONAL, NON-RESETTABLE ELAPSED TIME METER SHALL BE INSTALLED AND MAINTAINED TO INDICATE THE ENGINE ELAPSED OPERATING TIME.
[RULE 1470]
6. THIS ENGINE SHALL NOT BE USED AS PART OF A DEMAND RESPONSE PROGRAM USING INTERRUPTIBLE SERVICE CONTRACT IN WHICH A FACILITY RECEIVES A PAYMENT OR REDUCED RATE IN RETURN FOR REDUCING ITS ELECTRIC LOAD ON THE GRID WHEN REQUESTED TO DO SO BY THE UTILITY COMPANY OR THE GRID OPERATOR.
[RULE 1470]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

7. THIS ENGINE SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF RULES 431.2 AND 1470.
[RULES 431.2, 1470]

Periodic Monitoring

8. AN ENGINE OPERATING LOG SHALL BE MAINTAINED ON A MONTHLY BASIS, WHICH SHALL INCLUDE MANUAL AND AUTOMATIC OPERATION AND SHALL LIST ALL ENGINE OPERATIONS IN EACH OF THE FOLLOWING AREAS:
- A. EMERGENCY USE HOURS OF OPERATION
 - B. MAINTENANCE AND TESTING HOURS
 - C. OTHER OPERATING HOURS (DESCRIBE THE REASON FOR OPERATION). IN ADDITION, EACH TIME THE ENGINE IS STARTED MANUALLY, THE LOG SHALL INCLUDE THE DATE OF OPERATION AND THE TIMER READING IN HOURS AT THE BEGINNING AND END OF OPERATION. THE LOG SHALL BE KEPT FOR A MINIMUM OF FIVE YEARS AND BE MADE AVAILABLE TO DISTRICT STAFF UPON REQUEST. THE TOTAL HOURS OF OPERATION FOR THE PREVIOUS CALENDAR YEAR SHALL BE RECORDED SOMETIME DURING THE FIRST 15 DAYS OF JANUARY OF EACH YEAR.
- [RULE 3004(a)(4)- MONITORING AND RECORDKEEPING]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

PERMIT TO OPERATE

Permit No. F83295

A/N 447835

Equipment Description:

STERILIZER, ETHYLENE OXIDE, 3M MODEL 8 XL, 8.8 CUBIC FEET INTERNAL CAPACITY.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. THE OPERATOR SHALL NOT OPERATE THIS STERILIZER UNLESS IT IS VENTED TO AN AIR POLLUTION CONTROL EQUIPMENT, WHICH IS IN FULL USE AND HAS BEEN ISSUED A PERMIT TO OPERATE BY THE EXECUTIVE OFFICER.
[Rule 1303(a)(1)-BACT]
4. THIS EQUIPMENT SHALL NOT USE MORE THAN 170 GRAMS OF ETHYLENE OXIDE IN ANY ONE CYCLE.
[Rule 1401]
5. THE OPERATOR SHALL CONDUCT NO MORE THAN TWO STERILIZING CYCLES IN THIS EQUIPMENT IN ANY ONE DAY.
[Rule 1401]
6. THE OPERATOR SHALL MAINTAIN THE STERILIZER EXHAUST SYSTEM TO BE LEAK FREE, WITH LEAK TESTS CONDUCTED EVERY SIX MONTHS IN ACCORDANCE WITH THE TEST METHODS SPECIFIED IN RULE 1405.
[Rule 1405]
7. THE OPERATOR SHALL NOT PURGE OR AIRWASH THIS EQUIPMENT UNLESS IT IS VENTED TO AN AIR POLLUTION CONTROL EQUIPMENT, WHICH IS IN FULL USE AND HAS BEEN ISSUED A PERMIT TO OPERATE.
[Rule 1304(a)(1)]

Periodic Monitoring:

8. THE OPERATOR SHALL MAINTAIN A DAILY OPERATING LOG AND RECORD THE LEAK TESTS IN ACCORDANCE WITH RULE 1405, WHICH SHALL BE KEPT ON FILE FOR AT LEAST FIVE YEARS, AND BE MADE AVAILABLE TO AQMD PERSONNEL UPON REQUEST.
[RULE 3004(a)(4)- MONITORING AND RECORDKEEPING]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

PERMIT TO OPERATE

**Permit No. F83294
A/N 447836**

Equipment Description:

STERILIZER, ETHYLENE OXIDE, 3M, MODEL 8XL, 8.8 CUBIC FEET INTERNAL CAPACITY.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. THE OPERATOR SHALL NOT OPERATE THIS STERILIZER UNLESS IT IS VENTED TO AN AIR POLLUTION CONTROL EQUIPMENT, WHICH IS IN FULL USE AND HAS BEEN ISSUED A PERMIT TO OPERATE BY THE EXECUTIVE OFFICER.
[Rule 1304(a)(1) BACT]
4. THIS EQUIPMENT SHALL NOT USE MORE THAN 170 GRAMS OF ETHYLENE OXIDE IN ANY ONE CYCLE.
[Rule 1401]
5. THE OPERATOR SHALL CONDUCT NO MORE THAN TWO STERILIZING CYCLES IN THIS EQUIPMENT IN ANY ONE DAY.
[Rule 1401]
6. THE OPERATOR SHALL MAINTAIN THE STERILIZER EXHAUST SYSTEM TO BE LEAK FREE, WITH LEAK TESTS CONDUCTED EVERY SIX MONTHS IN ACCORDANCE WITH THE TEST METHODS SPECIFIED IN RULE 1405.
[RULE 1405]
7. THE OPERATOR SHALL NOT PURGE OR AIRWASH THIS EQUIPMENT UNLESS IT IS VENTED TO AN AIR POLLUTION CONTROL EQUIPMENT, WHICH IS IN FULL USE AND HAS BEEN ISSUED A PERMIT TO OPERATE.
[RULE 1304(a)(1) BACT]

Periodic Monitoring:

8. THE OPERATOR SHALL MAINTAIN A DAILY OPERATING LOG AND RECORD THE LEAK TESTS IN ACCORDANCE WITH RULE 1405, WHICH SHALL BE KEPT ON FILE FOR AT LEAST FIVE YEARS, AND BE MADE AVAILABLE TO AQMD PERSONNEL UPON REQUEST.
[RULE 1405, 3004(a)(4) MONITORING AND RECORDKEEPING]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

PERMIT TO OPERATE

Permit No. F83299

A/N 447837

Equipment Description:

AIR POLLUTION CONTROL SYSTEM CONSISTING OF:

1. CATALYTIC OXIDIZER, 3M, MODEL 50 SCFM, 5 KW ELECTRIC PREHEATER.
2. EXHAUST BLOWER, 2 HP, 50 CFM

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. THE CATALYST BED TEMPERATURE SHALL BE MAINTAINED ABOVE 280 BUT NOT TO EXCEED 500 DEGREES F EXCEPT DURING START-UP OPERATIONS OF THIS EQUIPMENT.
[RULE 1303(a)(1)-BACT]
4. THE OPERATOR SHALL INSTALL AND MAINTAIN A CONTINUOUS TEMPERATURE INDICATOR AND RECORDER TO ACCURATELY INDICATE AND RECORD THE TEMPERATURE AT THE EXHAUST OF THE OXIDIZER.
[RULE 1303(a)(1)-BACT]
5. THIS EQUIPMENT SHALL BE IN FULL USE WHEN THE STERILIZER IT SERVES IS IN OPERATION.
[RULE 1303(a)(1)-BACT]
6. ONLY ONE STERILIZER SHALL BE VENTED TO THIS EQUIPMENT AT ANY ONE TIME. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF RULE 1405.
[RULE 1303(a)(1)-BACT]
7. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF RULE 1405.
[RULE 1405]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

PERMIT TO CONSTRUCT/OPERATE

**Permit No.
G13002
A/N 518884**

Equipment Description

AIR POLLUTION CONTROL SYSTEM CONSISTING OF:

1. SCRUBBER, HARRINGTON, MODEL ECH 44-5 LB, 5' -8" W. x 11' -8" L x 6' -11" H, WITH SPRAY NOZZLE.
2. EXHAUST SYSTEM WITH TWO 20-HP BLOWERS, VENTING UP TO 10 BENCH-TYPE ACID POLISHING BAYS.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. MATERIALS USED IN THIS EQUIPMENT SHALL NOT CONTAIN ANY TOXIC AIR CONTAMINANTS IDENTIFIED IN RULE 1401, TABLE I, WITH AN EFFECTIVE DATE OF SEPTEMBER 10, 2010 OR EARLIER, EXCEPT FOR SODIUM HYDROXIDE, PHOSPHORIC ACID, HYDROCHLORIC ACID, SULFURIC ACID, NITRIC ACID, AND ETHYLENE GLYCOLS.
[Rule 1401]
4. A DIFFERENTIAL PRESSURE GAUGE, INDICATING INCHES OF WATER COLUMN, SHALL BE INSTALLED AND MAINTAINED ACROSS THE SCRUBBER. THE DIFFERENTIAL PRESSURE ACROSS THE PACKING SHALL NOT EXCEED 2.0 INCHES OF WATER COLUMN WHEN THE EQUIPMENT IT SERVES IS IN OPERATION.
[RULE 1405]
5. A CONTINUOUS FLOW METER INDICATING GALLONS PER MINUTE SHALL BE MAINTAINED IN THE SCRUBBING SOLUTION RECIRCULATION LINE TO THE SCRUBBER. NOT LESS THAN 55 GALLONS PER MINUTE OF RECIRCULATING SCRUBBER SOLUTION SHALL BE SUPPLIED TO THE SCRUBBER SPRAY NOZZLES WHEN THE EQUIPMENT IT SERVES IS IN OPERATION.
[RULE 1303(a)(1)-BACT]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

6. THE SCRUBBING SOLUTION TO THE SCRUBBER NOZZLES SHALL BE MAINTAINED AT pH 8.0 OR HIGHER WHEN THE EQUIPMENT IT SERVES IS IN OPERATION. AN AUTOMATIC pH METER AND CONTROLLER SHALL BE INSTALLED AND MAINTAINED TO CONTINUOUSLY MEASURE AND RECORD THE pH OF THE SOLUTION.
[RULE 1303(a)(1)-BACT]

Periodic Monitoring:

7. A DAILY OPERATION RECORD OF THIS EQUIPMENT SHALL BE MAINTAINED IN A WRITTEN FORM. THE RECORD SHALL INCLUDE, AT A MINIMUM, THE MINIMUM PH OF THE SCRUBBING SOLUTION, DIFFERENTIAL PRESSURE ACROSS THE SCRUBBER, AND FLOW RATE OF THE SCRUBBING SOLUTION AND MAKE UP WATER. THESE RECORDS SHALL BE KEPT FOR A MINIMUM OF FIVE YEARS AND MADE AVAILABLE UPON REQUEST BY DISTRICT PERSONNEL.
[RULE 3004(a)(4) MONITORING AND RECORDKEEPING]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

PERMIT TO CONSTRUCT/OPERATE

Permit No. G5761

A/N 497147

Equipment Description

AIR POLLUTION CONTROL SYSTEM NO. 1 CONSISTING OF:

1. SCRUBBER, HARRINGTON, MODEL ECH 4, 4' -0" W. X 12' -0" L. X 7' -3". H, WITH SPRAY NOZZLE.
2. EXHAUST SYSTEM WITH TWO 20-HP BLOWERS, VENTING BENCH-TYPE POLISHING STATIONS.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. MATERIALS USED IN THIS EQUIPMENT SHALL NOT CONTAIN ANY TOXIC AIR CONTAMINANTS IDENTIFIED IN RULE 1401, TABLE I, WITH AN EFFECTIVE DATE OF MARCH 7, 2008 OR EARLIER, EXCEPT FOR SODIUM HYDROXIDE (CAS # 1310-73-2), PHOSPHORIC ACID (CAS # 7664-38-20), AND HYDROCHLORIC ACID (CAS # 7647-01-0).
[Rule 1401]
4. NOT LESS THAN 55 GALLONS PER MINUTE OF RECIRCULATING SCRUBBER SOLUTION SHALL BE SUPPLIED TO THE SCRUBBER SPRAY NOZZLES WHEN THE EQUIPMENT IT SERVES IS IN OPERATION.
[RULE 1303(a)(1)-BACT]
5. A FLOW METER INDICATING GALLONS PER MINUTE (GPM) SHALL BE MAINTAINED IN THE SCRUBBING SOLUTION CIRCULATION LINE TO THE SCRUBBER.
[RULE 1303(a)(1)-BACT]
6. THE SCRUBBING SOLUTION TO THE SCRUBBER NOZZLES SHALL BE MAINTAINED AT pH 8.0 OR HIGHER. THE pH METER SHALL BE USED TO MEASURE THE pH OF THE SOLUTION ON A DAILY BASIS.
[RULE 1303(a)(1)-BACT]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

Periodic Monitoring:

7. RECORDS SHALL BE MAINTAINED TO DEMONSTRATE COMPLIANCE WITH CONDITIONS 4 AND 6. THE RECORDS SHALL BE KEPT FOR AT LEAST FIVE YEARS AND BE MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.
[RULE 3004(a)(4) MONITORING AND RECORDKEEPING]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

PERMIT TO OPERATE

**Permit No.
A/N 487407**

Equipment Description:

BOILER NO. 1, WATERTUBE TYPE, CLEAVER BROOKS MODEL FLX 700-800, EQUIPPED WITH LOW NO_x BURNER, 8 MMBTU/HR, NATURAL GAS FIRED.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. THE BOILER SHALL BE EQUIPPED WITH A CONTROL SYSTEM TO AUTOMATICALLY REGULATE COMBUSTION AIR AND FUEL AS THE BOILER LOAD VARIES. THIS AUTOMATIC CONTROL SYSTEM SHALL BE ADJUSTED AND TUNED AT LEAST ONCE EVERY SIX MONTHS ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS TO MAINTAIN ITS ABILITY TO REPEAT THE SAME PERFORMANCE AT THE SAME FIRING RANGE. NO_x, O₂, AND CO SHALL BE MEASURED AND RECORDED ALONG WITH THE TUNE-UP PROCEDURES.
[Rule 1146]
4. THE NO_x AND CO CONCENTRATIONS, IN PARTS PER MILLION BY VOLUME (PPMV), ON A DRY BASIS CORRECTED TO 3% OXYGEN, SHALL NOT EXCEED THE FOLLOWING:

POLLUTANTS PPMV

| | |
|-----------------|-----|
| NO _x | 12 |
| CO | 100 |

[Rule 1303(a)-BACT]

5. THE OPERATOR SHALL NOT OPERATE ALL OF THE THREE BOILERS AT THE SAME TIME.
[Rule 1303(b)(2)-OFFSET]
6. THE OPERATOR SHALL CONDUCT A SOURCE TEST TO DETERMINE THE NO_x AND CO EMISSIONS, IN PPMV AND IN LBS/HOUR, AT THE STACK WHEN THE EQUIPMENT IS OPERATING UNDER NORMAL CONDITIONS. SUCH SOURCE TEST SHALL BE CONDUCTED DURING THE FIRST 180 DAYS OF OPERATION AND WITHIN 45 DAYS FROM THE APPROVAL OF THE TEST PROTOCOL BY THE DISTRICT. THE SOURCE TEST REPORT SHALL INCLUDE THE CONCENTRATION IN PPM AT 3% OXYGEN AND EMISSION RATE OF NO_x AND CO IN LBS/DAY, AND SHALL BE SUBMITTED TO THE DISTRICT WITHIN 45 DAYS OF THE DATE OF THE SOURCE TEST.
[Rule 1303(a)(1)-BACT]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

Periodic Monitoring:

7. RECORDS SHALL BE MAINTAINED TO PROVE COMPLIANCE WITH CONDITION NO. 5. SUCH RECORDS SHALL BE KEPT FOR AT LEAST THE LAST FIVE YEARS AND BE MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.
[RULE 3004(a)(4) MONITORING AND RECORDKEEPING]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

PERMIT TO OPERATE

Permit No.
A/N 487409

Equipment Description:

BOILER NO. 2, WATERTUBE TYPE, CLEAVER BROOKS MODEL FLX 700-800, EQUIPPED WITH LOW NO_x BURNER, 8 MMBTU/HR, NATURAL GAS FIRED.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. THE BOILER SHALL BE EQUIPPED WITH A CONTROL SYSTEM TO AUTOMATICALLY REGULATE COMBUSTION AIR AND FUEL AS THE BOILER LOAD VARIES. THIS AUTOMATIC CONTROL SYSTEM SHALL BE ADJUSTED AND TUNED AT LEAST ONCE EVERY SIX MONTHS ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS TO MAINTAIN ITS ABILITY TO REPEAT THE SAME PERFORMANCE AT THE SAME FIRING RANGE. NO_x, O₂, AND CO SHALL BE MEASURED AND RECORDED ALONG WITH THE TUNE-UP PROCEDURES.
[Rule 1146]
4. THE NO_x AND CO CONCENTRATIONS, IN PARTS PER MILLION BY VOLUME (PPMV), ON A DRY BASIS CORRECTED TO 3% OXYGEN, SHALL NOT EXCEED THE FOLLOWING:

| POLLUTANTS | PPMV |
|-----------------|------|
| NO _x | 12 |
| CO | 100 |

[Rule 1303(a)-BACT]
5. THE OPERATOR SHALL NOT OPERATE ALL OF THE THREE BOILERS AT THE SAME TIME.
[Rule 1303(b)(2)-OFFSET]
6. THE OPERATOR SHALL CONDUCT A SOURCE TEST TO DETERMINE THE NO_x AND CO EMISSIONS, IN PPMV AND IN LBS/HOUR, AT THE STACK WHEN THE EQUIPMENT IS OPERATING UNDER NORMAL CONDITIONS. SUCH SOURCE TEST SHALL BE CONDUCTED DURING THE FIRST 180 DAYS OF OPERATION AND WITHIN 45 DAYS FROM THE APPROVAL OF THE TEST PROTOCOL BY THE DISTRICT. THE SOURCE TEST REPORT SHALL INCLUDE THE CONCENTRATION IN PPM AT 3% OXYGEN AND EMISSION RATE OF NO_x AND CO IN LBS/DAY, AND SHALL BE SUBMITTED TO THE DISTRICT WITHIN 45 DAYS OF THE DATE OF THE SOURCE TEST.
[Rule 1303(a)-BACT]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

Periodic Monitoring:

7. **RECORDS SHALL BE MAINTAINED TO PROVE COMPLIANCE WITH CONDITION NO. 5. SUCH RECORDS SHALL BE KEPT FOR AT LEAST THE LAST FIVE YEARS AND BE MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.
[RULE 3004(a)(4) MONITORING AND RECORDKEEPING]**

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

PERMIT TO OPERATE

**Permit No.
A/N 487410**

Equipment Description:

BOILER NO. 3, WATERTUBE TYPE, CLEAVER BROOKS MODEL FLX 700-800, EQUIPPED WITH LOW NO_x BURNER, 8 MMBTU/HR, NATURAL GAS FIRED.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. THE BOILER SHALL BE EQUIPPED WITH A CONTROL SYSTEM TO AUTOMATICALLY REGULATE COMBUSTION AIR AND FUEL AS THE BOILER LOAD VARIES. THIS AUTOMATIC CONTROL SYSTEM SHALL BE ADJUSTED AND TUNED AT LEAST ONCE EVERY SIX MONTHS ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS TO MAINTAIN ITS ABILITY TO REPEAT THE SAME PERFORMANCE AT THE SAME FIRING RANGE. NO_x, O₂, AND CO SHALL BE MEASURED AND RECORDED ALONG WITH THE TUNE-UP PROCEDURES.
[Rule 1146]
4. THE NO_x AND CO CONCENTRATIONS, IN PARTS PER MILLION BY VOLUME (PPMV), ON A DRY BASIS CORRECTED TO 3% OXYGEN, SHALL NOT EXCEED THE FOLLOWING:

| | |
|-----------------|------|
| POLLUTANTS | PPMV |
| NO _x | 12 |
| CO | 100 |

 [Rule 1303(a)-BACT]
5. THE OPERATOR SHALL NOT OPERATE ALL OF THE THREE BOILERS AT THE SAME TIME.
[Rule 1303(b)(2)-OFFSET]
6. THE OPERATOR SHALL CONDUCT A SOURCE TEST TO DETERMINE THE NO_x AND CO EMISSIONS, IN PPMV AND IN LBS/HOUR, AT THE STACK WHEN THE EQUIPMENT IS OPERATING UNDER NORMAL CONDITIONS. SUCH SOURCE TEST SHALL BE CONDUCTED DURING THE FIRST 180 DAYS OF OPERATION AND WITHIN 45 DAYS FROM THE APPROVAL OF THE TEST PROTOCOL BY THE DISTRICT. THE SOURCE TEST REPORT SHALL INCLUDE THE CONCENTRATION IN PPM AT 3% OXYGEN AND EMISSION RATE OF NO_x AND CO IN LBS/DAY, AND SHALL BE SUBMITTED TO THE DISTRICT WITHIN 45 DAYS OF THE DATE OF THE SOURCE TEST.
[Rule 1303(a)(1)-BACT]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

Periodic Monitoring:

7. RECORDS SHALL BE MAINTAINED TO PROVE COMPLIANCE WITH CONDITION NO. 5. SUCH RECORDS SHALL BE KEPT FOR AT LEAST THE LAST FIVE YEARS AND BE MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.
[RULE 3004(a)(4) MONITORING AND RECORDKEEPING]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

Permit No. F99218

A/N 487445

Equipment Description:

BOILER, WATERTUBE TYPE, PARKER BOILERS, MODEL T-3900LR, EQUIPPED WITH LOW NO_x BURNER, 3.9 MMBTU/HR, NATURAL GAS FIRED, AND A 3 H.P. COMBUSTION BLOWER.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. THIS EQUIPMENT MAY NOT BURN MORE THAN 2,675,000 CUBIC FEET OF NATURAL GAS IN ANY ONE MONTH. A NON-RESETTABLE, TOTALIZING FUEL FLOW METER SHALL BE MAINTAINED IN THE FULE SUPPLY TO MEASURE THE AMOUNT OF NATURAL GAS BURNED.
[RULE 1303(b)(2)-OFFSET]
4. THE NO_x AND CO CONCENTRATIONS, IN PARTS PER MILLION BY VOLUME (PPMV), ON A DRY BASIS CORRECTED TO 3% OXYGEN, SHALL NOT EXCEED THE FOLLOWING:

POLLUTANTS PPMV

NO_x 12

CO 100

[Rule 1303(a)-BACT]

Periodic Monitoring:

5. RECORDS SHALL BE MAINTAINED TO PROVE COMPLIANCE WITH CONDITION NO. 3. SUCH RECORDS SHALL BE KEPT FOR AT LEAST THE LAST FIVE YEARS AND BE MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.
[RULE 3004(a)(4) MONITORING AND RECORDKEEPING]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

**Permit No. F99219
A/N 487446**

Equipment Description:

BOILER, WATERTUBE TYPE, PARKER BOILERS, MODEL T-3900LR, EQUIPPED WITH LOW NO_x BURNER, 3.9 MMBTU/HR, NATURAL GAS FIRED, AND A 3 H.P. COMBUSTION BLOWER.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. THIS EQUIPMENT MAY NOT BURN MORE THAN 2,675,000 CUBIC FEET OF NATURAL GAS IN ANY ONE MONTH. A NON-RESETTING, TOTALIZING FUEL FLOW METER SHALL BE MAINTAINED IN THE FUEL SUPPLY TO MEASURE THE AMOUNT OF NATURAL GAS BURNED.
[RULE 1303(b)(2)-OFFSET]
4. THE NO_x AND CO CONCENTRATIONS, IN PARTS PER MILLION BY VOLUME (PPMV), ON A DRY BASIS CORRECTED TO 3% OXYGEN, SHALL NOT EXCEED THE FOLLOWING:

POLLUTANTS PPMV

| | |
|-----------------|-----|
| NO _x | 12 |
| CO | 100 |

[Rule 1303(a)-BACT]

Periodic Monitoring:

5. RECORDS SHALL BE MAINTAINED TO PROVE COMPLIANCE WITH CONDITION NO. 3. SUCH RECORDS SHALL BE KEPT FOR AT LEAST THE LAST FIVE YEARS AND BE MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.
[RULE 3004(a)(4) MONITORING AND RECORDKEEPING]

FACILITY PERMIT TO OPERATE ABBOTT CARDIOVASCULAR SYSTEMS, INC.

Permit No. F99220
A/N 487447

Equipment Description:

BOILER, WATERTUBE TYPE, PARKER BOILERS, MODEL T-3900LR, EQUIPPED WITH LOW NO_x BURNER, 3.9 MMBTU/HR, NATURAL GAS FIRED, AND A 3 H.P. COMBUSTION BLOWER.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. THIS EQUIPMENT MAY NOT BURN MORE THAN 2,675,000 CUBIC FEET OF NATURAL GAS IN ANY ONE MONTH. A NON-RESETTABLE, TOTALIZING FUEL FLOW METER SHALL BE MAINTAINED IN THE FULE SUPPLY TO MEASURE THE AMOUNT OF NATURAL GAS BURNED.
[RULE 1303(b)(2)-OFFSET]
4. THE NO_x AND CO CONCENTRATIONS, IN PARTS PER MILLION BY VOLUME (PPMV), ON A DRY BASIS CORRECTED TO 3% OXYGEN, SHALL NOT EXCEED THE FOLLOWING:

POLLUTANTS PPMV

| | |
|-----------------|-----|
| NO _x | 12 |
| CO | 100 |

[Rule 1303(a)-BACT]

Periodic Monitoring:

5. RECORDS SHALL BE MAINTAINED TO PROVE COMPLIANCE WITH CONDITION NO. 3. SUCH RECORDS SHALL BE KEPT FOR AT LEAST THE LAST FIVE YEARS AND BE MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.
[RULE 3004(a)(4) MONITORING AND RECORDKEEPING]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

**Permit No. F99221
A/N 487448**

Equipment Description:

BOILER, WATERTUBE TYPE, PARKER BOILERS, MODEL T-3900LR, EQUIPPED WITH LOW NO_x BURNER, 3.9 MMBTU/HR, NATURAL GAS FIRED, AND A 3 H.P. COMBUSTION BLOWER.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. THIS EQUIPMENT MAY NOT BURN MORE THAN 2,675,000 CUBIC FEET OF NATURAL GAS IN ANY ONE MONTH. A NON-RESETTING, TOTALIZING FUEL FLOW METER SHALL BE MAINTAINED IN THE FULE SUPPLY TO MEASURE THE AMOUNT OF NATURAL GAS BURNED.
[RULE 1303(b)(2)-OFFSET]
4. THE NO_x AND CO CONCENTRATIONS, IN PARTS PER MILLION BY VOLUME (PPMV), ON A DRY BASIS CORRECTED TO 3% OXYGEN, SHALL NOT EXCEED THE FOLLOWING:

| POLLUTANTS | PPMV |
|------------|------|
|------------|------|

| | |
|-----------------|----|
| NO _x | 12 |
|-----------------|----|

| | |
|----|-----|
| CO | 100 |
|----|-----|

[Rule 1303(a)-BACT]

Periodic Monitoring:

5. RECORDS SHALL BE MAINTAINED TO PROVE COMPLIANCE WITH CONDITION NO. 3. SUCH RECORDS SHALL BE KEPT FOR AT LEAST THE LAST FIVE YEARS AND BE MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.
[RULE 3004(a)(4) MONITORING AND RECORDKEEPING]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

PERMIT TO OPERATE

**Permit No. G15506
A/N 524958**

Equipment Description

PLASTIC EXTRUSION LINE #1 CONSISTING OF:

1. HOPPER, WITH A DRYER, EDD NO. 2067198, 1.66 W ELECTRICALLY HEATED, DRI-AIR, ARID-X10, 1'D X 2'6"H
2. EXTRUDER, 70 RPM, EDD NO. 2068465, WITH A 2.25 KW ELECTRICALLY HEATED BARREL MELTER, AND A 3 HP MIXER, 4"W X 1'10"L X 4"H

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. MATERIALS USED IN THIS EQUIPMENT SHALL NOT CONTAIN ANY TOXIC AIR CONTAMINANTS IDENTIFIED IN RULE 1401, TABLE I, WITH AN EFFECTIVE DATE OF SEPTEMBER 10, 2010 OR EARLIER.
[RULE 1401]
4. THIS EQUIPMENT SHALL NOT PROCESS MORE THAN 7200 POUNDS OF MATERIAL PER MONTH.
[RULE 1303(b)(2)-OFFSET]

Periodic Monitoring:

7. A MONTHLY OPERATION RECORD OF THIS EQUIPMENT SHALL BE MAINTAINED IN A WRITTEN FORM. THESE RECORDS SHALL BE KEPT FOR A MINIMUM OF FIVE YEARS AND MADE AVAILABLE UPON REQUEST BY DISTRICT PERSONNEL.
[RULE 3004(a)(4) MONITORING AND RECORDKEEPING]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

PERMIT TO OPERATE

Permit No. G15507

A/N 526846

Equipment Description

PLASTIC EXTRUSION LINE #8 CONSISTING OF:

1. HOPPER (SHARED), WITH A DRYER, EDD NO. 2067198, 1.66 W ELECTRICALLY HEATED, DRI-AIR, ARID-X10, 1'D X 2'6"H
2. EXTRUDER, 35 RPM, EDD NO. 2068464, WITH A 2.25 KW ELECTRICALLY HEATED BARREL MELTER, AND A 3 HP MIXER, 4.75"W X 1'10"L X 4.75"H

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. MATERIALS USED IN THIS EQUIPMENT SHALL NOT CONTAIN ANY TOXIC AIR CONTAMINANTS IDENTIFIED IN RULE 1401, TABLE I, WITH AN EFFECTIVE DATE OF SEPTEMBER 10, 2010 OR EARLIER.
[RULE 1401]
4. THIS EQUIPMENT SHALL NOT PROCESS MORE THAN 7200 POUNDS OF MATERIAL PER MONTH.
[RULE 1303(b)(2)-OFFSET]

Periodic Monitoring:

7. A MONTHLY OPERATION RECORD OF THIS EQUIPMENT SHALL BE MAINTAINED IN A WRITTEN FORM. THESE RECORDS SHALL BE KEPT FOR A MINIMUM OF FIVE YEARS AND MADE AVAILABLE UPON REQUEST BY DISTRICT PERSONNEL.
[RULE 3004(a)(4) MONITORING AND RECORDKEEPING]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

RULE 219 EQUIPMENT

Equipment Description:

RULE 219 EXEMPT EQUIPMENT, COATING EQUIPMENT, PORTABLE, ARCHITECTURAL COATINGS.

Periodic Monitoring:

1. THE OPERATOR SHALL KEEP RECORDS, IN A MANNER APPROVED BY THE DISTRICT, FOR THE FOLLOWING PARAMETER(S) OR ITEM(S):

FOR ARCHITECTURAL APPLICATIONS WHERE NO THINNERS, REDUCERS, OR OTHER VOC CONTAINING MATERIALS ARE ADDED, MAINTAIN SEMI-ANNUAL RECORDS OF ALL COATINGS CONSISTING OF (a) COATING TYPE, (b) VOC CONTENT AS SUPPLIED IN GRAMS PER LITER (g/l) OF MATERIALS FOR LOW-SOLIDS COATINGS, (c) VOC CONTENT AS SUPPLIED IN g/l OF COATING, LESS WATER AND EXEMPT SOLVENT, FOR OTHER COATING.

FOR OTHER ARCHITECTURAL APPLICATIONS WHERE THINNERS, REDUCERS, OR OTHER VOC CONTAINING MATERIALS ARE ADDED, MAINTAIN DAILY RECORDS FOR EACH COATING CONSISTING OF (a) COATING TYPE, (b) VOC CONTENT AS APPLIED IN GRAMS PER LITER (g/l) OF MATERIALS USED FOR LOW-SOLIDS COATINGS, (c) VOC CONTENT AS APPLIED IN g/l OF COATING, LESS WATER AND EXEMPT SOLVENT, FOR OTHER COATING.

[RULE 3004 (a) (4) MONITORING AND RECORDKEEPING]

Emissions And Requirements:

2. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

VOC: RULE 1113, SEE APPENDIX B FOR EMISSION LIMITS

VOC: RULE 1171, SEE APPENDIX B FOR EMISSION LIMITS

[RULE 1113, RULE 1171]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

RULE 219 EQUIPMENT

Equipment Description:

RULE 219 EXEMPT EQUIPMENT, HAND WIPING OPERATIONS.

Emissions And Requirements:

1. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

VOC: RULE 1171, SEE APPENDIX B FOR EMISSION LIMITS
[RULE 1171]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

RULE 219 EQUIPMENT

Equipment Description:

RULE 219 EXEMPT EQUIPMENT, BOILER, > 400,000 BTU/HR BUT < 2 MMBTU/HR.

Emissions And Requirements:

1. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

PM: 0.1 gr/scf, RULE 409
NOx: 30 PPMV, RULE 1146.2
CO: 400 PPMV, RULE 1146.2
CO: 2000 PPMV, RULE 407

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

RULE 219 EQUIPMENT

Equipment Description:

RULE 219 EXEMPT EQUIPMENT, ABRASIVE BLASTING EQUIPMENT, GLOVE-BOX, < 53 FT3, WITH DUST FILTER.

Periodic Monitoring:

1. THE OPERATOR SHALL PERFORM AN ANNUAL INSPECTION OF THE EQUIPMENT AND FILTER MEDIA FOR LEAKS, BROKEN OR TORN FILTER MEDIA AND IMPROPERLY INSTALLED FILTER MEDIA. THE OPERATOR SHALL KEEP RECORDS, IN A MANNER APPROVED BY THE DISTRICT, FOR THE FOLLOWING PARAMETER(S) OR ITEM(S):
 - A. THE NAME OF THE PERSON PERFORMING THE INSPECTION AND/OR MAINTENANCE OF THE FILTER MEDIA;
 - B. THE DATE, TIME AND RESULTS OF THE INSPECTION; AND
 - C. THE DATE, TIME AND DESCRIPTION OF ANY MAINTENANCE OR REPAIRS RESULTING FROM THE INSPECTION.[RULE 3004 (a)(4) MONITORING AND RECORDKEEPING]

2. THE OPERATOR SHALL DISCHARGE DUST COLLECTED IN THIS EQUIPMENT ONLY INTO CLOSED CONTAINERS.
[RULE 3004 (a)(1)]

3. THE OPERATOR SHALL CONDUCT AN INSPECTION FOR VISIBLE EMISSIONS FROM ALL STACKS AND OTHER EMISSION POINTS OF THIS EQUIPMENT WHENEVER THERE IS A PUBLIC COMPLAINT OF VISIBLE EMISSIONS, WHENEVER VISIBLE EMISSIONS ARE OBSERVED, AND ON AN ANNUAL BASIS, AT LEAST, UNLESS THE EQUIPMENT DID NOT OPERATE DURING THE ENTIRE ANNUAL PERIOD. THE ROUTINE ANNUAL INSPECTION SHALL BE CONDUCTED WHILE THE EQUIPMENT IS IN OPERATION AND DURING DAYLIGHT HOURS. IF ANY VISIBLE EMISSIONS (NOT INCLUDING CONDENSED WATER VAPOR) ARE DETECTED, THE OPERATOR SHALL TAKE CORRECTIVE ACTION(S) THAT ELIMINATES THE VISIBLE EMISSIONS WITHIN 24 HOURS AND REPORT THE VISIBLE EMISSIONS AS A POTENTIAL DEVIATION IN ACCORDANCE WITH THE REPORTING REQUIREMENTS IN SECTION K OF THIS PERMIT.
THE OPERATOR SHALL KEEP THE RECORDS IN ACCORDANCE WITH THE RECORDKEEPING REQUIREMENTS IN SECTION K OF THIS PERMIT AND THE FOLLOWING RECORDS:
 - A. STACK OR EMISSION POINT IDENTIFICATION;
 - B. DESCRIPTION OF ANY CORRECTIVE ACTIONS TAKEN TO ABATE VISIBLE EMISSIONS;
AND
 - C. DATE AND TIME VISIBLE EMISSION WAS ABATED.[RULE 3004 (a)(4) MONITORING AND RECORDKEEPING]

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

Emissions And Requirements:

4. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS
PM: RULE 405, SEE APPENDIX B FOR EMISSION LIMITS
PM: RULE 1140, SEE APPENDIX B FOR EMISSION LIMITS

**FACILITY PERMIT TO OPERATE
ABBOTT CARDIOVASCULAR SYSTEMS, INC.**

RULE 219 EQUIPMENT

Equipment Description:

RULE 219 EXEMPT EQUIPMENT, COATING EQUIPMENT, VOC EMISSIONS THREE POUNDS PER DAY OR LESS OR 66 POUNDS PER CALENDAR MONTH OR LESS.

Emissions And Requirements:

1. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

VOC: RULE 1145, SEE APPENDIX B FOR EMISSION LIMITS

VOC: RULE 1171, SEE APPENDIX B FOR EMISSION LIMITS

[RULE 1145, RULE 1171]

| | | |
|---|------------------------|---|
|  SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>STATIONARY SOURCE COMPLIANCE DIVISION</i> APPLICATION PROCESSING AND CALCULATIONS | PAGES 4 | PAGE 1 |
| | APPL. NO. See below | DATE 9/1/2010 Revised 10/20/2012 |
| | PROCESSED BY DR | CHECKED BY |

COMPANY NAME: ADVANCED CARDIOVASCULAR SYSTEMS, ID 45489
NOW KNOWN AS ABBOTT CARDIOVASCULAR

EQUIPMENT DESCRIPTION

ANs 487407, 487409, 487410

3 BOILERS, WATERTUBE TYPE, CLEAVER BROOKS, MODEL FLX 700-800, WITH LOW NOX BURNER, 8 MMBTU/HR EACH, NATURAL GAS FIRED.

BACKGROUND

On April 9, 2008, the company submitted application numbers 480752, 480753 and 480754 for replacement of three 6 MMBtu/hr boilers (ANs 261655, 261656 and 261657) with three new 6 MMBTU/hr boilers. These initial 3 applications were processed and reviewed by EPA, but before the Title V permits were issued, the company submitted the applications above, for 8 MMBtu/hr boilers, to supersede ANs 480752-480754. Issuance of the above P/Cs was delayed due to the permit moratorium. While waiting for the permits to construct, the company rented various location boilers. The P/Cs were issued 1/1/10 when the moratorium was lifted. The boilers have now been source tested, and results indicate compliance with permit limits.

It was discovered that ID 45489 and ID 156808 are contiguous. The two IDs have been merged under 45489.

PROCESS DESCRIPTION

Advanced (Abbott) Cardiovascular manufactures therapeutic medical devices for the treatment of atherosclerotic disease of the coronary and peripheral arteries. These devices include angioplasty balloon catheters, guide wires, wire-mesh stents, and accessories. The company operates these boilers for space heating and other operating needs at the facility.



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

STATIONARY SOURCE COMPLIANCE DIVISION

APPLICATION PROCESSING AND CALCULATIONS

| | |
|------------------------|---|
| PAGES 4 | PAGE 2 |
| APPL. NO. See below | DATE 9/1/2010 Revised 10/20/2012 |
| PROCESSED BY DR | CHECKED BY |

EMISSIONS

Basis:

NOx BACT limit (12 ppm new boilers, 30 ppm old boilers)

CO BACT limit (100 ppm* for new water tube boilers, 50 ppm for old fire tube boilers)

Standard default factors for PM10, ROG and SOX

See attached calculation sheets

| Application No. | CO Emissions, lb/day | NOx Emissions, lb/day | PM10 Emissions, lb/day | ROG Emissions, lb/day | SOx Emissions, lb/day |
|--------------------|----------------------|-----------------------|------------------------|-----------------------|-----------------------|
| 487407 | 14.18 | 2.8 | 1.44 | 1.01 | 0.11 |
| 487409 | 14.18 | 2.8 | 1.44 | 1.01 | 0.11 |
| 487410 | 14.18 | 2.8 | 1.44 | 1.01 | 0.11 |
| Total | 42.54 | 8.4 | 4.32 | 3.03 | 0.33 |
| From 3 old boilers | 15.96 | 15.73 | 3.12 | 2.26 | 0.247 |

There is a potential increase in all pollutant emissions except NOx, if all three new boilers are operating. Permit limits operation of the boilers to only two at a time and the third unit would be on standby. The table below shows the emissions when only 2 of the 3 new boilers are operating (16 mmbtu/hr total) compared with the 3 old boilers (18 mmbtu/hr total).

| Criteria Pollutants | Emissions from 3 Old boilers, lb/day | Emissions from 2 New boilers, lb/day | Emission change, lb/day |
|---------------------|--------------------------------------|--------------------------------------|-------------------------|
| CO | 15.96 | 28.36* | +12.41 |
| NOx | 15.73 | 5.6 | -10.13 |
| PM10 | 3.12 | 2.88 | -0.24 |
| ROG | 2.26 | 2.02 | -0.24 |
| SOx | 0.247 | 0.22 | -0.027 |

*P/C limit of 100 ppm, but P/C calculation done at 50 ppm in error

| | | |
|--|------------------------|---|
|  SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>STATIONARY SOURCE COMPLIANCE DIVISION</i> APPLICATION PROCESSING AND CALCULATIONS | PAGES 4 | PAGE 3 |
| | APPL. NO. See below | DATE 9/1/2010 Revised 10/20/2012 |
| | PROCESSED BY DR | CHECKED BY |

RULE REVIEW

Rule 212 (c) (1): This section requires a public notice for all new or modified permit units that emit air contaminants located within 1000 feet from the outer boundary of a school.

The nearest school is approximately 5800 ft from the boundary of the facility, therefore, public notice is not required.

(c) (2): This section requires a public notice for all new or modified facilities having onsite emission increases exceeding any of the daily maximums specified in Rule 212(g).

The proposed new installations are not expected to result in emissions close to the maximum daily increase specified in Rule 212. No public notice is required.

(c) (3): This section requires a public notice for all new or modified permit unit with increases in emissions of toxic air contaminants listed in Table I of Rule 1401 resulting in MICR greater than 1E-6 per permit unit or greater than 10E-6 per facility.

The proposed project is has a resulting MICR for toxic pollutants less than 1E-6, therefore, public notice is not required.

(g): Project emissions are less than the threshold, public notice is not required

Rule 431.1 The sulfur content of natural gas is expected to comply with the rule requirements.

Rule 1146 The boilers comply with the NOx requirement of 30 ppm and CO of 400 ppm corrected to 3% oxygen.

REG XIII New Source Review

OFFSET: Since there is a rating increase, this is not a functionally identical replacement. There is an increase in CO emissions even if only two new boilers are operated at a time. However, CO is in attainment, and not subject to NSR per discussion with manager Brian

| | | |
|--|------------------------|---|
|  SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>STATIONARY SOURCE COMPLIANCE DIVISION</i> APPLICATION PROCESSING AND CALCULATIONS | PAGES 4 | PAGE 4 |
| | APPL. NO. See below | DATE 9/1/2010 Revised 10/20/2012 |
| | PROCESSED BY DR | CHECKED BY |

Yeh. Qualifies as a concurrent facility modification and is exempt from providing offsets per our discussions.

Combining this facility with ID 156808, which was determined to be contiguous, may result in exceedance of the 4T/yr NOx limit that was on the permit to construct. ID 156808 has four permitted boilers, with 1# NOX PTE each in the NSR database (4 #/day total). The 4 T/year limit will be removed, and the facility is to be brought into RECLAIM mid 2013.

Other pollutants are below the offset threshold, so offsets are not required. CO is in attainment, so offsets would not be required.

BACT: Source test indicated that the boilers meet BACT requirements of 12 ppm NOx and 100 ppm CO (for water tube type) corrected to 3% oxygen.

MODELING: Below screening levels - Complies

Rule 1401 Risk less than 1 in 1 million. See attached risk assessment

Reg. XXX Title V
 Permit to Construct changed to permit to operate, with removal of the P/C source test condition, and the 4 T/yr NOx limit condition. Does not qualify as administrative since more than just the source test condition was changed. De minimus significant permit revision. 45 day EPA notice is required.

RECOMMENDATION

It is recommended that conditional Permits to Operate be issued.

| | | |
|--|------------------------|---|
|  SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>STATIONARY SOURCE COMPLIANCE DIVISION</i> APPLICATION PROCESSING AND CALCULATIONS | PAGES 4 | PAGE 1 |
| | APPL. NO. See below | DATE 9/1/2010 Revised 10/20/2012 |
| | PROCESSED BY DR | CHECKED BY |

COMPANY NAME: ADVANCED CARDIOVASCULAR SYSTEMS, ID 45489
NOW KNOWN AS ABBOTT CARDIOVASCULAR

EQUIPMENT DESCRIPTION

ANs 487407, 487409, 487410

3 BOILERS, WATERTUBE TYPE, CLEAVER BROOKS, MODEL FLX 700-800, WITH LOW NOX BURNER, 8 MMBTU/HR EACH, NATURAL GAS FIRED.

BACKGROUND

On April 9, 2008, the company submitted application numbers 480752, 480753 and 480754 for replacement of three 6 MMBtu/hr boilers (ANs 261655, 261656 and 261657) with three new 6 MMBTU/hr boilers. These initial 3 applications were processed and reviewed by EPA, but before the Title V permits were issued, the company submitted the applications above, for 8 MMBtu/hr boilers, to supersede ANs 480752-480754. Issuance of the above P/Cs was delayed due to the permit moratorium. While waiting for the permits to construct, the company rented various location boilers. The P/Cs were issued 1/1/10 when the moratorium was lifted. The boilers have now been source tested, and results indicate compliance with permit limits.

It was discovered that ID 45489 and ID 156808 are contiguous. The two IDs have been merged under 45489.

PROCESS DESCRIPTION

Advanced (Abbott) Cardiovascular manufactures therapeutic medical devices for the treatment of atherosclerotic disease of the coronary and peripheral arteries. These devices include angioplasty balloon catheters, guide wires, wire-mesh stents, and accessories. The company operates these boilers for space heating and other operating needs at the facility.



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

STATIONARY SOURCE COMPLIANCE DIVISION

APPLICATION PROCESSING AND CALCULATIONS

| | |
|------------------------|---|
| PAGES 4 | PAGE 2 |
| APPL. NO. See below | DATE 9/1/2010 Revised 10/20/2012 |
| PROCESSED BY DR | CHECKED BY |

EMISSIONS

Basis:

NOx BACT limit (12 ppm new boilers, 30 ppm old boilers)

CO BACT limit (100 ppm* for new water tube boilers, 50 ppm for old fire tube boilers)

Standard default factors for PM10, ROG and SOX

See attached calculation sheets

| Application No. | CO Emissions, lb/day | NOx Emissions, lb/day | PM10 Emissions, lb/day | ROG Emissions, lb/day | SOx Emissions, lb/day |
|--------------------|----------------------|-----------------------|------------------------|-----------------------|-----------------------|
| 487407 | 14.18 | 2.8 | 1.44 | 1.01 | 0.11 |
| 487409 | 14.18 | 2.8 | 1.44 | 1.01 | 0.11 |
| 487410 | 14.18 | 2.8 | 1.44 | 1.01 | 0.11 |
| Total | 42.54 | 8.4 | 4.32 | 3.03 | 0.33 |
| From 3 old boilers | 15.96 | 15.73 | 3.12 | 2.26 | 0.247 |

There is a potential increase in all pollutant emissions except NOx, if all three new boilers are operating. Permit limits operation of the boilers to only two at a time and the third unit would be on standby. The table below shows the emissions when only 2 of the 3 new boilers are operating (16 mmbtu/hr total) compared with the 3 old boilers (18 mmbtu/hr total).

| Criteria Pollutants | Emissions from 3 Old boilers, lb/day | Emissions from 2 New boilers, lb/day | Emission change, lb/day |
|---------------------|--------------------------------------|--------------------------------------|-------------------------|
| CO | 15.96 | 28.36* | +12.41 |
| NOx | 15.73 | 5.6 | -10.13 |
| PM10 | 3.12 | 2.88 | -0.24 |
| ROG | 2.26 | 2.02 | -0.24 |
| SOx | 0.247 | 0.22 | -0.027 |

*P/C limit of 100 ppm, but P/C calculation done at 50 ppm in error

| | | |
|--|------------------------|---|
|  SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>STATIONARY SOURCE COMPLIANCE DIVISION</i> APPLICATION PROCESSING AND CALCULATIONS | PAGES 4 | PAGE 3 |
| | APPL. NO. See below | DATE 9/1/2010 Revised 10/20/2012 |
| | PROCESSED BY DR | CHECKED BY |

RULE REVIEW

Rule 212 (c)(1): This section requires a public notice for all new or modified permit units that emit air contaminants located within 1000 feet from the outer boundary of a school.

The nearest school is approximately 5800 ft from the boundary of the facility, therefore, public notice is not required.

(c)(2): This section requires a public notice for all new or modified facilities having onsite emission increases exceeding any of the daily maximums specified in Rule 212(g).

The proposed new installations are not expected to result in emissions close to the maximum daily increase specified in Rule 212. No public notice is required.

(c)(3): This section requires a public notice for all new or modified permit unit with increases in emissions of toxic air contaminants listed in Table I of Rule 1401 resulting in MICR greater than 1E-6 per permit unit or greater than 10E-6 per facility.

The proposed project is has a resulting MICR for toxic pollutants less than 1E-6, therefore, public notice is not required.

(g): Project emissions are less than the threshold, public notice is not required

Rule 431.1 The sulfur content of natural gas is expected to comply with the rule requirements.

Rule 1146 The boilers comply with the NOx requirement of 30 ppm and CO of 400 ppm corrected to 3% oxygen.

REG XIII New Source Review

OFFSET: Since there is a rating increase, this is not a functionally identical replacement. There is an increase in CO emissions even if only two new boilers are operated at a time. However, CO is in attainment, and not subject to NSR per discussion with manager Brian

| | | |
|--|------------------------|---|
|  SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>STATIONARY SOURCE COMPLIANCE DIVISION</i> APPLICATION PROCESSING AND CALCULATIONS | PAGES 4 | PAGE 4 |
| | APPL. NO. See below | DATE 9/1/2010 Revised 10/20/2012 |
| | PROCESSED BY DR | CHECKED BY |

Yeh. Qualifies as a concurrent facility modification and is exempt from providing offsets per our discussions.

Combining this facility with ID 156808, which was determined to be contiguous, may result in exceedance of the 4T/yr NOx limit that was on the permit to construct. ID 156808 has four permitted boilers, with 1# NOX PTE each in the NSR database (4 #/day total). The 4 T/year limit will be removed, and the facility is to be brought into RECLAIM mid 2013.

Other pollutants are below the offset threshold, so offsets are not required. CO is in attainment, so offsets would not be required.

BACT: Source test indicated that the boilers meet BACT requirements of 12 ppm NOx and 100 ppm CO (for water tube type) corrected to 3% oxygen.

MODELING: Below screening levels - Complies

Rule 1401 Risk less than 1 in 1 million. See attached risk assessment

Reg. XXX Title V
 Permit to Construct changed to permit to operate, with removal of the P/C source test condition, and the 4 T/yr NOx limit condition. Does not qualify as administrative since more than just the source test condition was changed. De minimus significant permit revision. 45 day EPA notice is required.

RECOMMENDATION

It is recommended that conditional Permits to Operate be issued.

BOILER EMISSIONS FOR FIRING ON NATURAL GAS ONLY

1. DATA

| | | |
|-------------------------|------------|---------|
| Max burner rating | 18,000,000 | BTU/hr |
| Max hr/day | 24 | hr/day |
| day per week | 7 | dy/wk |
| wk/yr | 52 | wk/yr |
| Use default NOx E.F. | no | yes/no |
| Use default CO E.F. | no | |
| Max NOx rate | 30 | ppm |
| Max CO rate | 50 | ppm |
| 30-day ave | 30 | days |
| Ave load-Rule 1401 | 100.0% | |
| Max load-Reg 13 | 100.0% | |
| Fuel HHV | 1050 | btu/ft3 |
| Fuel rate | 17143 | ft3/hr |
| MM cf fuel rate | 0.017143 | mmcf/hr |
| VOC control (Rule 1401) | 0% | eff |
| Deemed complete date | 6/7/2002 | |

3 OLD BOILERS, 6 MM BTU/hr EACH

Emissions factor

| Item | value | units | Ref |
|-------------|-------------|----------|--------------------|
| ROG | 5.5 | lb/mmcf | AP-42, table 1.4-1 |
| SOx | 0.6 | lb/mmcf | AP-42, table 1.4-1 |
| PM | 7.6 | lb/mmcf | AP-42, table 1.4-1 |
| NOx-default | 100 | lb/mmcf | AP-42, table 1.4-1 |
| CO-default | 85 | lb/mmcf | AP-42, table 1.4-1 |
| MMCF/hr | 0.017142857 | MMCF/hr | |
| therm/hr | 180 | therm/hr | |

ROG, SOX and PM10 Emissions = lb/mmcf * MMCF/hr * load

2. Combustion Emissions

| | lb/hr | lb/day | 30-dy ave | lb/yr |
|-----|--------|--------|-----------|---------|
| RHC | 0.0943 | 2.26 | 2.26 | 824 |
| NOx | 0.66 | 15.73 | 16.00 | 5725.72 |
| SO2 | 0.0103 | 0.2470 | 0.25 | 89.893 |
| CO | 0.66 | 15.96 | 16.00 | 5808.55 |
| PM | 0.13 | 3.12 | 3.12 | 1136 |

By EPA Method 19

By the Ideal Gas Law

= [PV = nRT]

= [n/V = P/RT]

= [lbmol/dscf@68F.]

= [1 atm / (0.73 ft³-atm/lb-mole-R*(460 F+68F))]

=[0.00259 lbmol/dscf]

lbNOx/btu

=[dscf/mmbtu][$(10^{-6} \text{ mmbtu/btu})$][$20.9/(20.9 - 3\%O_2)$][ppmv][Vol Nox/ppm][Mol.Wt.
lb/lbmol][lbmol/dscf@68F.]
=[8710][0.000001][$20.9/(20.9-3)$][30][0.000001][46][0.00259]
=[3.641E-08]

lbNOx/hr

=[lb/btu][Rating, btu/hr]
=[3.641E-08][1.80E+07]
=[0.66 lb/hr]

lbNox/day

=[lbNOx/hr][hr/day]
=[0.66 lb/hr][24hr/day]
=[15.73 lb/day]

30 day NOx ave

=[lbNox/day][days/mon]/[30 days/mon]
=[15.73 lb/day][30days/mon]/[30 days/mon]
=[15.73 lb/day]

lbNox/year

=[lbNox/day][days/wk][wk/yr]
=[15.73 lb/day][7days/wk][52wk/yr]
=[5726 lb/year]

By EPA Method 19

lbCO/btu

=[dscf/mmbtu][$(10^{-6} \text{ mmbtu/btu})$][$20.9/(20.9 - 3\%O_2)$][ppmv][Vol CO/ppm][Mol.Wt.
lb/lbmol][lbmol/dscf@68F.]
[8710][0.000001][$20.9/(20.9-3)$][50][0.000001][28][0.00259]
=[3.694E-08]

lbCO/hr

=[lb/btu][Rating, btu/hr]
=[3.694E-08][1.80E+07]
=[0.66 lb/hr]

lbCO/day

=[lbCO/hr][hr/day]
=[0.66 lb/hr][24hr/day]
=[15.96 lb/day]

30 day CO ave

=[lbCO/day][days/mon]/[30 days/mon]
=[15.96 lb/day][30days/mon]/[30 days/mon]
=[15.96 lb/day]

lbCO/year

=[lbCO/day][days/wk][wk/yr]

=[15.96 lb/day][7days/wk][52wk/yr]
=[5809 lb/year]

lbROG/hr

[ROG E.F.][Firing Rate][Boiler Rating]
[5.50 lb/mmcft][100%][18.0mmbtu/hr][1cf/1050btu]
[0.0943
lb/hr]

lbROG/day

[lbROG/hr] x [hr/day]
[0.09 lb/hr] x [24 hr/day]
[2.26 lb/day]

30 day ROG ave

[lbROG/day][days/mon]/[30 days/mon]
[2.26 lb/day][30days/mon]/[30 days/mon]
[2.26 lb/day]

lbROG/year

[lbROG/day][days/wk][wk/yr]
lbROG/day[7days/wk][52wk/yr]
[824 lb/year]

lbSOx/hr

[SOx E.F.][Firing Rate][Boiler Rating]
[0.60 lb/mmcft][100%][18.0mmbtu/hr][1cf/1050btu]
[0.0103 lb/hr]

lbSOx/day

[lbSOx/hr] x [hr/day]
[0.0103 lb/hr] x [24 hr/day]
[0.2470 lb/day]

30 day SOx ave

[lbSOx/day][days/mon]/[30 days/mon]
[0.2470 lb/day][30days/mon]/[30 days/mon]
[0.2470 lb/day]

lbSOx/year

[lbSOx/day][days/wk][wk/yr]
[0.2470 lb/day][7days/wk][52wk/yr]
[90 lb/year]

lbPM/hr

[PM E.F.][Firing Rate][Boiler Rating]
[7.60 lb/mmcft][100%][18.0mmbtu/hr][1cf/1050btu]
[0.1300 lb/hr]

lbPM/day

[lbPM/hr] x [hr/day]
[0.1300 lb/hr] x [24 hr/day]
[3.1200 lb/day]

30 day PM ave
 [lbPM/day][days/mon]/[30 days/mon]
 [3.1200 lb/day][30days/mon]/[30 days/mon]
 [3.1200 lb/day]

lbPM/year
 [lbPM/day][days/wk][wk/yr]
 [3.1200 lb/day][7days/wk][52wk/yr]
 [1136 lb/year]

3. Rule 1303 (b)(1)-Screen Table A-1

| Item | Emissions rate (lb/hr) | | Compliance |
|------|------------------------|------------|------------|
| | Allowed | calculated | |
| NOx | 0.86 | 0.66 | Yes |
| CO | 47.3 | 0.66 | Yes |
| PM10 | 5.2 | 0.13 | Yes |

4. Rule 1401 Emissions Calculations

| VOC reduction | 0% | percent | | | | |
|---------------|-------------|-------------|-------------|---------|---------|----------|
| Fuel usage | 0.017142857 | mmcf/hr | | nsr | nsr | nsr |
| item | EF(lb/mmcf) | R1-lb/hr | R2lb/hr | R1 E-06 | R1 E-06 | R2 lb/yr |
| toluene | 2.65E-02 | 4.54E-04 | 0.000454286 | 454.29 | 454.29 | 3.96864 |
| xylenes | 1.97E-02 | 0.000337714 | 0.000337714 | 337.71 | 337.71 | 2.950272 |
| naphthalene | 3.00E-04 | 5.14286E-06 | 5.14286E-06 | 5.14 | 5.14 | 0.044928 |
| PAH | 1.00E-04 | 1.71429E-06 | 1.71429E-06 | 1.71 | 1.71 | 0.014976 |
| acrolein | 2.70E-03 | 4.62857E-05 | 4.62857E-05 | 46.29 | 46.29 | 0.404352 |
| acetaldehyde | 3.10E-03 | 5.31429E-05 | 5.31429E-05 | 53.14 | 53.14 | 0.464256 |
| benzene | 5.80E-03 | 9.94286E-05 | 9.94286E-05 | 99.43 | 99.43 | 0.868608 |
| formaldehyde | 1.23E-02 | 0.000210857 | 0.000210857 | 210.86 | 210.86 | 1.842048 |
| propylene | 5.30E-01 | 9.09E-03 | 0.009085714 | 9085.71 | 9085.71 | 79.3728 |
| ethy benzene | 6.90E-03 | 1.18E-04 | 0.000118286 | 118.29 | 118.29 | 1.033344 |
| hexane | 4.60E-03 | 7.89E-05 | 7.88571E-05 | 78.86 | 78.86 | 0.688896 |
| | | | | | | |

Referance AB-2588 Emissions factors

BOILER EMISSIONS FOR FIRING ON NATURAL GAS ONLY

1. DATA

| | | |
|-------------------------|-----------|---------|
| Max burner rating | 8,000,000 | BTU/hr |
| Max hr/dy | 24 | hr/day |
| day per week | 7 | dy/wk |
| wk/yr | 52 | wk/yr |
| Use default NOx E.F. | no | yes/no |
| Use default CO E.F. | no | |
| Max NOx rate | 12 | ppm |
| Max CO rate | 100 | ppm |
| 30-day ave | 30 | days |
| Ave load-Rule 1401 | 100.0% | |
| Max load-Reg 13 | 100.0% | |
| Fuel HHV | 1050 | btu/ft3 |
| Fuel rate | 7619 | ft3/hr |
| MM cf fuel rate | 0.007619 | mmcf/hr |
| VOC control (Rule 1401) | 0% | eff |
| Deemed complete date | 6/7/2002 | |

New boilers

Emissions factor

| Item | value | units | Ref |
|-------------|-------------|----------|--------------------|
| ROG | 5.5 | lb/mmcf | AP-42, table 1.4-1 |
| SOx | 0.6 | lb/mmcf | AP-42, table 1.4-1 |
| PM | 7.6 | lb/mmcf | AP-42, table 1.4-1 |
| NOx-default | 100 | lb/mmcf | AP-42, table 1.4-1 |
| CO-default | 85 | lb/mmcf | AP-42, table 1.4-1 |
| MMCF/hr | 0.007619048 | MMCF/hr | |
| therm/hr | 80 | therm/hr | |

ROG, SOX and PM10 Emissions = lb/mmcf * MMCF/hr * load

2. Combustion Emissions

| | lb/hr | lb/day | 30-dy ave | lb/yr |
|-----|--------|--------|-----------|---------|
| RHC | 0.0419 | 1.01 | 1.01 | 366 |
| NOx | 0.12 | 2.80 | 3.00 | 1019.20 |
| SO2 | 0.0046 | 0.1097 | 0.11 | 39.924 |
| CO | 0.59 | 14.18 | 14.00 | 5163.16 |
| PM | 0.06 | 1.44 | 1.44 | 524 |

By EPA Method 19

By the Ideal Gas Law

= [PV = nRT]

= [n/V = P/RT]

= [lbmol/dscf@68F.]

= [1 atm / (0.73 ft³-atm/lb-mole-R*(460 F+68F))]

$$=[0.00259 \text{ lbmol/dscf}]$$

lbNOx/btu

$$=[\text{dscf/mmbtu}][(10^{-6} \text{ mmbtu/btu})][20.9 / (20.9 - 3\% \text{O}_2)][\text{ppmv}][\text{Vol Nox/ppm}][\text{Mol. Wt. lb/lbmol}][\text{lbmol/dscf@68F.}]$$
$$=[8710][0.000001][20.9/(20.9-3)][12][0.000001][46][0.00259]$$
$$=[\underline{1.456\text{E-08}}]$$

lbNOx/hr

$$=[\text{lb/btu}][\text{Rating, btu/hr}]$$
$$=[1.456\text{E-08}][8.00\text{E+06}]$$
$$=[\underline{0.12 \text{ lb/hr}}]$$

lbNox/day

$$=[\text{lbNOx/hr}][\text{hr/day}]$$
$$=[0.12 \text{ lb/hr}][24\text{hr/day}]$$
$$=[\underline{2.80 \text{ lb/day}}]$$

30 day NOx ave

$$=[\text{lbNox/day}][\text{days/mon}]/[30 \text{ days/mon}]$$
$$=[2.80 \text{ lb/day}][30\text{days/mon}]/[30 \text{ days/mon}]$$
$$=[\underline{2.80 \text{ lb/day}}]$$

lbNox/year

$$=[\text{lbNox/day}][\text{days/wk}][\text{wk/yr}]$$
$$=[2.80 \text{ lb/day}][7 \text{ days/wk}][52\text{wk/yr}]$$
$$=[\underline{1019 \text{ lb/year}}]$$

By EPA Method 19**lbCO/btu**

$$=[\text{dscf/mmbtu}][(10^{-6} \text{ mmbtu/btu})][20.9 / (20.9 - 3\% \text{O}_2)][\text{ppmv}][\text{Vol CO/ppm}][\text{Mol. Wt. lb/lbmol}][\text{lbmol/dscf@68F.}]$$
$$[8710][0.000001][20.9/(20.9-3)][100][0.000001][28][0.00259]$$
$$=[7.388\text{E-08}]$$

lbCO/hr

$$=[\text{lb/btu}][\text{Rating, btu/hr}]$$
$$=[7.388\text{E-08}][8.00\text{E+06}]$$
$$=[\underline{0.59 \text{ lb/hr}}]$$

lbCO/day

$$=[\text{lbCO/hr}][\text{hr/day}]$$
$$=[0.59 \text{ lb/hr}][24\text{hr/day}]$$
$$=[\underline{14.18 \text{ lb/day}}]$$

30 day CO ave

$$=[\text{lbCO/day}][\text{days/mon}]/[30 \text{ days/mon}]$$
$$=[14.18 \text{ lb/day}][30\text{days/mon}]/[30 \text{ days/mon}]$$
$$=[\underline{14.18 \text{ lb/day}}]$$

lbCO/year

$$=[\text{lbCO/day}][\text{days/wk}][\text{wk/yr}]$$

= $[14.18 \text{ lb/day}][7\text{days/wk}][52\text{wk/yr}]$
= $[5163 \text{ lb/year}]$

lbROG/hr

$[\text{ROG E.F.}][\text{Firing Rate}][\text{Boiler Rating}]$
 $[5.50 \text{ lb/mmcf}][100\%][8.0\text{mmbtu/hr}][1\text{cf}/1050\text{btu}]$
 $[0.0419$
 $\text{lb/hr}]$

lbROG/day

$[\text{lbROG/hr}] \times [\text{hr/day}]$
 $[0.04 \text{ lb/hr}] \times [24 \text{ hr/day}]$
 $[1.01 \text{ lb/day}]$

30 day ROG ave

$[\text{lbROG/day}][\text{days/mon}]/[30 \text{ days/mon}]$
 $[1.01 \text{ lb/day}][30\text{days/mon}]/[30 \text{ days/mon}]$
 $[1.01 \text{ lb/day}]$

lbROG/year

$[\text{lbROG/day}][\text{days/wk}][\text{wk/yr}]$
 $\text{lbROG/day}[7\text{days/wk}][52\text{wk/yr}]$
 $[366 \text{ lb/year}]$

lbSOx/hr

$[\text{SOx E.F.}][\text{Firing Rate}][\text{Boiler Rating}]$
 $[0.60 \text{ lb/mmcf}][100\%][8.0\text{mmbtu/hr}][1\text{cf}/1050\text{btu}]$
 $[0.0046 \text{ lb/hr}]$

lbSOx/day

$[\text{lbSOx/hr}] \times [\text{hr/day}]$
 $[0.0046 \text{ lb/hr}] \times [24 \text{ hr/day}]$
 $[0.1097 \text{ lb/day}]$

30 day SOx ave

$[\text{lbSOx/day}][\text{days/mon}]/[30 \text{ days/mon}]$
 $[0.1097 \text{ lb/day}][30\text{days/mon}]/[30 \text{ days/mon}]$
 $[0.1097 \text{ lb/day}]$

lbSOx/year

$[\text{lbSOx/day}][\text{days/wk}][\text{wk/yr}]$
 $[0.1097 \text{ lb/day}][7\text{days/wk}][52\text{wk/yr}]$
 $[40 \text{ lb/year}]$

lbPM/hr

$[\text{PM E.F.}][\text{Firing Rate}][\text{Boiler Rating}]$
 $[7.60 \text{ lb/mmcf}][100\%][8.0\text{mmbtu/hr}][1\text{cf}/1050\text{btu}]$
 $[0.0600 \text{ lb/hr}]$

lbPM/day

$[\text{lbPM/hr}] \times [\text{hr/day}]$
 $[0.0600 \text{ lb/hr}] \times [24 \text{ hr/day}]$
 $[1.4400 \text{ lb/day}]$

30 day PM ave
 [lbPM/day][days/mon]/[30 days/mon]
 [1.4400 lb/day][30days/mon]/[30 days/mon]
 [1.4400 lb/day]

lbPM/year
 [lbPM/day][days/wk][wk/yr]
 [1.4400 lb/day][7days/wk][52wk/yr]
 [524 lb/year]

3. Rule 1303 (b)(1)-Screen Table A-1

| Item | Emissions rate (lb/hr) | | Compliance |
|------|------------------------|------------|------------|
| | Allowed | calculated | |
| NOx | 0.47 | 0.12 | Yes |
| CO | 25.9 | 0.59 | Yes |
| PM10 | 2.8 | 0.06 | Yes |

4. Rule 1401 Emissions Calculations

| VOC reduction | 0% | percent | | nsr | nsr | nsr |
|---------------|-------------|-------------|-------------|---------|---------|----------|
| Fuel usage | 0.007619048 | mmcf/hr | | R1 E-06 | R1 E-06 | R2 lb/yr |
| item | EF(lb/mmcf) | R1-lb/hr | R2lb/hr | R1 E-06 | R1 E-06 | R2 lb/yr |
| toluene | 3.66E-02 | 2.79E-04 | 0.000278857 | 278.86 | 278.86 | 2.436096 |
| xylenes | 2.72E-02 | 0.000207238 | 0.000207238 | 207.24 | 207.24 | 1.810432 |
| naphthalene | 3.00E-04 | 2.28571E-06 | 2.28571E-06 | 2.29 | 2.29 | 0.019968 |
| PAH | 1.00E-04 | 7.61905E-07 | 7.61905E-07 | 0.76 | 0.76 | 0.006656 |
| acrolein | 2.70E-03 | 2.05714E-05 | 2.05714E-05 | 20.57 | 20.57 | 0.179712 |
| acetaldehyde | 4.30E-03 | 3.27619E-05 | 3.27619E-05 | 32.76 | 32.76 | 0.286208 |
| benzene | 8.00E-03 | 6.09524E-05 | 6.09524E-05 | 60.95 | 60.95 | 0.53248 |
| formaldehyde | 1.70E-02 | 0.000129524 | 0.000129524 | 129.52 | 129.52 | 1.13152 |
| propylene | 7.31E-01 | 5.57E-03 | 0.005569524 | 5569.52 | 5569.52 | 48.65536 |
| ethy benzene | 9.50E-03 | 7.24E-05 | 7.2381E-05 | 72.38 | 72.38 | 0.63232 |
| hexane | 6.30E-03 | 4.80E-05 | 0.000048 | 48.00 | 48.00 | 0.419328 |

Referance AB-2588 Emissions factors

BOILER DATA

| | | |
|-------------------------|-----------|-------------|
| Max burner rating | 8,000,000 | BTU/hr |
| Fuel HHV | 1050 | btu/ft3 |
| Fuel rate | 7,619 | ft3/hr |
| MM cf fuel rate | 0.007619 | mmcf/hr |
| VOC control (Rule 1401) | | percent eff |

| Compound | EF (lb/mmcf) | R1 (lb/hr) | R2 (lb/hr) | NSR Data Entry (E-06 lb/hr) | |
|--|-----------------|---------------|---------------|-----------------------------|-----------|
| | | | | R1 | R2 |
| Acetaldehyde | 4.30E-03 | 3.2762E-05 | 3.2762E-05 | 32.7619 | 32.7619 |
| Acrolein | 2.70E-03 | 2.0571E-05 | 2.0571E-05 | 20.5714 | 20.5714 |
| Benzene (including benzene from gasoline) | 8.00E-03 | 6.0952E-05 | 6.0952E-05 | 60.9524 | 60.9524 |
| Ethyl benzene | 9.50E-03 | 7.2381E-05 | 7.2381E-05 | 72.3810 | 72.3810 |
| Formaldehyde | 1.70E-02 | 0.00012952 | 0.00012952 | 129.5238 | 129.5238 |
| Hexane (n-) | 6.30E-03 | 4.80000E-05 | 4.80000E-05 | 48.0000 | 48.0000 |
| Naphthalene | 3.00E-04 | 2.2857E-06 | 2.2857E-06 | 2.2857 | 2.2857 |
| PolyCyclic Aromatic | 1.00E-04 | 7.619E-07 | 7.619E-07 | 0.7619 | 0.7619 |
| Propylene | 7.31E-01 | 0.00556952 | 0.00556952 | 5569.5238 | 5569.5238 |
| Toluene (methyl benzene) | 3.66E-02 | 0.00027886 | 0.00027886 | 278.8571 | 278.8571 |
| Xylenes (isomers and mixtures) | 2.72E-02 | 2.07238E-04 | 0.00020724 | 207.2381 | 207.2381 |

New Boilers

TIER 2 SCREENING RISK ASSESSMENT REPORT

A/N: 487407
 Fac: 45489

Application deemed complete date: 09/09/08

2. Tier 2 Data

| | |
|------------|------|
| MET Factor | 0.65 |
| 4 hr | 0.98 |
| 6 or 7 hrs | 0.77 |

Dispersion Factors tables

| | |
|---|-----------------|
| 3 | For Chronic X/Q |
| 6 | For Acute X/Q |

Dilution Factors (ug/m3)/(tons/yr)

| Receptor | X/Q | X/Qmax |
|-------------|-------------|-------------|
| Residential | 2.989459169 | 51.60164681 |
| Commercial | 2.989459169 | 51.60164681 |

Adjustment and Intake Factors

| | AFann | DBR | EVF |
|-------------|-------|-----|------|
| Residential | 1 | 302 | 0.96 |
| Worker | 1 | 149 | 0.38 |

TIER 2 RESULTS

5a. MICR
 MICR = CP (mg/(kg-day))⁻¹ * Q (ton/yr) * (X/Q) * AFann * MET * DBR * EVF * 1E-6* MP

| Compound | Residential | Commercial |
|---|-----------------|-----------------|
| Acetaldehyde | 8.06E-10 | 1.57E-10 |
| Acrolein | | |
| Benzene (including benzene from gasoline) | 1.50E-08 | 2.93E-09 |
| Ethyl benzene | | |
| Formaldehyde | 6.69E-09 | 1.31E-09 |
| Hexane (n-) | | |
| Naphthalene | 6.75E-10 | 1.32E-10 |
| PolyCyclic Aromatic Hydrocarbon (PAHs) | 2.18E-07 | 2.09E-08 |
| Propylene | | |
| Toluene (methyl benzene) | | |
| Xylenes (isomers and mixtures) | | |
| Total | 2.41E-07 | 2.54E-08 |
| | PASS | PASS |

No Cancer Burden, MICR<1.0E-6

| 5b. Cancer Burden | NO |
|---------------------------|----|
| X/Q for one-in-a-million: | |
| Distance (meter) | |
| Area (km ²): | |
| Population: | |
| Cancer Burden: | |

6. Hazard Index

HIA = [Q(lb/hr) * (X/Q)max] * AF / Acute REL

HIC = [Q(ton/yr) * (X/Q) * MET * MP] / Chronic REL

| Target Organs | Acute | Chronic | Acute Pass/Fail | Chronic Pass/Fail |
|--------------------------------|----------|----------|-----------------|-------------------|
| Alimentary system (liver) - AL | | 3.07E-07 | Pass | Pass |
| Bones and teeth - BN | | | Pass | Pass |
| Cardiovascular system - CV | | | Pass | Pass |
| Developmental - DEV | 2.25E-06 | 1.68E-05 | Pass | Pass |
| Endocrine system - END | | 3.07E-07 | Pass | Pass |
| Eye | 5.66E-03 | 3.28E-03 | Pass | Pass |
| Hematopoietic system - HEM | 1.86E-06 | 8.62E-06 | Pass | Pass |
| Immune system - IMM | 7.30E-05 | | Pass | Pass |
| Kidney - KID | | 3.07E-07 | Pass | Pass |
| Nervous system - NS | 3.89E-07 | 1.91E-05 | Pass | Pass |
| Reproductive system - REP | 2.25E-06 | | Pass | Pass |
| Respiratory system - RES | 5.66E-03 | 3.34E-03 | Pass | Pass |
| Skin | | | Pass | Pass |

A/N: 487407

Application deemed complete date: 09/09/08

6a. Hazard Index Acute

HIA = [Q(lb/hr) * (X/Q)max] * AF/ Acute REL

| Compound | HIA - Residential | | | | | | | | | |
|---|-------------------|----|----------|----------|----------|----------|----------|----------|----------|------|
| | AL | CV | DEV | EYE | HEM | IMM | NS | REP | RESP | SKIN |
| Acetaldehyde | | | | | | | | | | |
| Acrolein | | | | 5.59E-03 | | | | | 5.59E-03 | |
| Benzene (including benzene from gasoline) | | | 1.86E-06 | | 1.86E-06 | 1.86E-06 | | 1.86E-06 | | |
| Ethyl benzene | | | | | | | | | | |
| Formaldehyde | | | | 7.11E-05 | | 7.11E-05 | | | 7.11E-05 | |
| Hexane (n-) | | | | | | | | | | |
| Naphthalene | | | | | | | | | | |
| PolyCyclic Aromatic Hydrocarbon (PAHs) | | | | | | | | | | |
| Propylene | | | | | | | | | | |
| Toluene (methyl benzene) | | | 3.89E-07 | 3.89E-07 | | | 3.89E-07 | 3.89E-07 | 3.89E-07 | |
| Xylenes (isomers and mixtures) | | | | 4.86E-07 | | | | | 4.86E-07 | |
| Total | | | 2.25E-06 | 5.66E-03 | 1.86E-06 | 7.30E-05 | 3.89E-07 | 2.25E-06 | 5.66E-03 | |

| Compound | HIA - Commercial | | | | | | | | | |
|---|------------------|----|----------|----------|----------|----------|----------|----------|----------|------|
| | AL | CV | DEV | EYE | HEM | IMM | NS | REP | RESP | SKIN |
| Acetaldehyde | | | | 5.59E-03 | | | | | 5.59E-03 | |
| Acrolein | | | | | | | | | | |
| Benzene (including benzene from gasoline) | | | 1.86E-06 | | 1.86E-06 | 1.86E-06 | | 1.86E-06 | | |
| Ethyl benzene | | | | 7.11E-05 | | | | | 7.11E-05 | |
| Formaldehyde | | | | | | 7.11E-05 | | | | |
| Hexane (n-) | | | | | | | | | | |
| Naphthalene | | | | | | | | | | |
| PolyCyclic Aromatic Hydrocarbon (PAHs) | | | | | | | | | | |
| Propylene | | | | | | | | | | |
| Toluene (methyl benzene) | | | 3.89E-07 | 3.89E-07 | | | 3.89E-07 | 3.89E-07 | 3.89E-07 | |
| Xylenes (isomers and mixtures) | | | | 4.86E-07 | | | | | 4.86E-07 | |
| Total | | | 2.25E-06 | 5.66E-03 | 1.86E-06 | 7.30E-05 | 3.89E-07 | 2.25E-06 | 5.66E-03 | |

6b. Hazard Index Chronic

$$HIC = [Q(\text{ton/yr}) * (X/Q) * MET * MP] / \text{Chronic REL}$$

| Compound | HIC - Residential | | | | | | | | | | | | |
|---|-------------------|----|----|----------|----------|----------|----------|-----|----------|----------|-----|----------|------|
| | AL | BN | CV | DEV | END | EYE | HEM | IMM | KID | NS | REP | RESP | SKIN |
| Acetaldehyde | | | | | | | | | | | | 3.09E-03 | |
| Acrolein | | | | | | 2.91E-03 | | | | | | 2.91E-03 | |
| Benzene (including benzene from gasoline) | | | | 8.62E-06 | | | 8.62E-06 | | | 8.62E-06 | | | |
| Ethyl benzene | 3.07E-07 | | | 3.07E-07 | 3.07E-07 | | | | 3.07E-07 | | | | |
| Formaldehyde | | | | | | 3.66E-04 | | | | | | 3.66E-04 | |
| Hexane (n-) | | | | | | | | | | 5.82E-08 | | | |
| Naphthalene | | | | | | | | | | | | 2.16E-06 | |
| PolyCyclic Aromatic Hydrocarbon (PAHs) | | | | | | | | | | | | | |
| Propylene | | | | | | | | | | | | 1.58E-05 | |
| Toluene (methyl benzene) | | | | 7.89E-06 | | | | | | 7.89E-06 | | 7.89E-06 | |
| Xylenes (isomers and mixtures) | | | | | | | | | | 2.51E-06 | | 2.51E-06 | |
| Total | 3.07E-07 | | | 1.68E-05 | 3.07E-07 | 3.28E-03 | 8.62E-06 | | 3.07E-07 | 1.91E-05 | | 3.34E-03 | |

6b. Hazard Index Chronic (cont.)

A/N: 487407

Application deemed complete date:

09/09/08

| Compound | HIC - Commercial | | | | | | | | | | | | |
|---|------------------|----|----|-----------------|-----------------|-----------------|-----------------|-----|-----------------|-----------------|-----|-----------------|----------|
| | AL | BN | CV | DEV | END | EYE | HEM | IMM | KID | NS | REP | RESP | SKIN |
| Acetaldehyde | | | | | | | | | | | | 3.09E-05 | |
| Acrolein | | | | | | 2.91E-03 | | | | | | 2.91E-03 | |
| Benzene (including benzene from gasoline) | | | | 8.62E-06 | | | 8.62E-06 | | | 8.62E-06 | | | |
| Ethyl benzene | 3.07E-07 | | | 3.07E-07 | 3.07E-07 | | | | 3.07E-07 | | | | |
| Formaldehyde | | | | | | 3.66E-04 | | | | | | 3.66E-04 | |
| Hexane (n-) | | | | | | | | | | 5.82E-08 | | | |
| Naphthalene | | | | | | | | | | | | 2.16E-06 | |
| PolyCyclic Aromatic Hydrocarbon (PAHs) | | | | | | | | | | | | | 1.58E-05 |
| Propylene | | | | | | | | | | | | | 7.89E-06 |
| Toluene (methyl benzene) | | | | 7.89E-06 | | | | | | 7.89E-06 | | 7.89E-06 | |
| Xylenes (isomers and mixtures) | | | | | | | | | | 2.51E-06 | | 2.51E-06 | |
| Total | 3.07E-07 | | | 1.68E-05 | 3.07E-07 | 3.28E-03 | 8.62E-06 | | 3.07E-07 | 1.91E-05 | | 3.34E-03 | |