GENERAL PROVISIONS

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1. Equivalency of Methods - It shall be the responsibility of the holder of this permit to demonstrate or otherwise justify the equivalency of emission control methods, sampling or other emission testing methods and monitoring methods proposed as alternatives to methods indicated in the provisions of this permit. Alternative methods shall be applied for in writing and shall be reviewed and approved by the Executive Director prior to their use in fulfilling any requirements of this permit.

2. Sampling Requirements - If sampling of stacks or process vents is required, the holder of this permit must contact the Source and Mobile Monitoring Division of the Texas Air Control Board (TACB) prior to sampling to obtain the proper data forms and procedures. The holder of this permit is also responsible for providing sampling facilities and conducting the sampling operations at his own expense.

3. Appeal - This permit may be appealed pursuant to Rule 103.81 of the Procedural Rules of the TACB and Section 382.032 of the Texas Clean Air Act. Failure to take such appeal constitutes acceptance by the applicant of all terms of the permit.

4. Construction Progress - Start of construction, construction interruptions exceeding 45 days and completion of construction shall be reported to the appropriate regional office of the TACB not later than 10 working days after occurrence of the event.

5. Recordkeeping - Information and data concerning production, operating hours, sampling and monitoring data, if applicable, fuel type and fuel sulfur content, if applicable, shall be maintained in a file at the plant site and made available at the request of personnel from the TACB or any local air pollution control program having jurisdiction. The file shall be retained for at least two years following the date that the information or data is obtained.

6. Maintenance of Emission Control - The facilities covered by this permit shall not be operated unless all air pollution emission capture equipment and abatement equipment are maintained in good working order and operating properly during normal facility operations.

7. Piping, Valves, Flanges, Pumps and Compressors in Volatile Organic Compound (VOC) Service - Intensive Directed Maintenance

Except as may be provided for in the special provisions of this permit, the following requirements apply to the above referenced equipment.

A. These provisions shall not apply (1) where the VOC has an aggregate partial pressure or vapor pressure of less than 0.05 psia at 20°C or (2) to piping and valves two inches nominal size and smaller or (3) operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this provision shall be identified in a list to be made available upon request.

B. Construction of new and reworked piping, valves and pump and compressor systems shall conform to applicable ANSI, API, ASME or equivalent codes.

C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical.

D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Non-accessible valves shall be identified in a list to be made available upon request.

E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. No later than the next scheduled quarterly monitoring after initial installation or replacement, all new or reworked connections shall be gas tested or hydraulically tested at no less than normal operating pressure and adjustments made as necessary to obtain leak-free performance. Flanges shall be inspected by visual, audible and/or olfactory means at least weekly by operating personnel walk-through.

Each open-ended valve or line shall be equipped with a cap, blind flange, plug or a second valve.

F. Accessible valves shall be monitored by leak-checking for fugitive

emissions at least quarterly using an approved gas analyzer with a directed maintenance program. Sealless/leakless valves (including but not limited to bellows and diaphragm valves) and relief valves equipped with a rupture disc or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure gauge shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

A directed maintenance program shall consist of the repair and maintenance of components assisted simultaneously by the use of an approved gas analyzer such that a minimum concentration of leaking VOC is obtained for each component being maintained.

G. All new and replacement pumps and compressors shall be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. These seal systems need not be monitored and may include but are not limited to dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including but not limited to diaphragm, canned or magnetic driven pumps) may be used to satisfy the requirements of this provision and need not be monitored.

All other pump and compressor seals emitting VOC shall be monitored with an approved gas analyzer at least quarterly.

H. Damaged or leaking valves, flanges, compressor seals and pump seals found to be emitting VOC in excess of 500 ppmv or found by visual inspection to be leaking (e.g. dripping liquids) shall be tagged and replaced or repaired. Every reasonable effort shall be made to repair a leaking component, as specified in this paragraph, within 15 days after the leak is found. If the repair of a component would require a unit shutdown, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. The Executive Director, at his discretion, may require early unit shutdown or other appropriate action based on the number and severity of tagged leaks awaiting shutdown.

I. The results of the required fugitive monitoring and maintenance program shall be made available to the Executive Director or his designated representative upon request. Records shall indicate appropriate dates, test methods, instrument readings, repair results and corrective actions taken. Records of flange inspections are not required unless a leak is detected.

J. Compliance with the requirements of this provision does not assure compliance with requirements of TACB Regulation V, an applicable New Source Performance Standard (NSPS) or an applicable National Emission Standard for Hazardous Air Pollutants (NESHAPS) and does not constitute approval of alternative standards for these regulations.

SPECIAL PROVISIONS

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EMISSION STANDARDS

1. The total emissions of air contaminants from any of the sources shall not exceed the values stated on the attached table entitled "Emission Sources - Maximum Allowable Emission Rates."

2. Except as may be provided for in the special provisions of this permit, all waste gas from point sources containing VOC and/or other organic compounds (hydrocarbons and/or hydrocarbon derivatives excluding carbon dioxide) and/or hydrogen chloride (HCl) and chlorine (Cl_2) shall be routed to an incinerator or environmental vent system (EVS). The incinerator and EVS shall operate with no less than 99.9 and 99 percent efficiency in disposing of the compounds, respectively. The waste gas streams shall include process vents, all relief valves, analyzer vents, steam jet exhausts, upset emissions, start-up and shutdown related emissions or purges, blowdowns or other system emissions of waste gas. Any other exception to this provision requires prior review and approval by the Executive Director and such exceptions may be subject to strict monitoring requirements.

OPERATING PROCEDURES

3. The incinerator shall operate at not less than 2.0 percent oxygen (O_2) and not more than 400 parts per million by volume dry carbon monoxide (CO), corrected to zero percent excess air, in the incinerator stack and not less than 1,800°F firebox exit temperature.

4. The EVS caustic scrubber shall operate with no less than 2 percent by weight caustic solution. When sampling shows that the EVS caustic scrubber solution has dropped below 10 percent by weight caustic, the scrubber solution shall be recharged with fresh caustic within four hours of the time that the sample was analyzed. Until such time as the EVS is recharged, the process fumes normally passing through this scrubber shall be routed to the Chlorothalonil II Unit EVS scrubber described in TACB Permit No. R-3945A. Caustic strength shall be analyzed once per shift. Records of these analyses shall be maintained at the plant site and be made available to representatives of the TACB upon request.

5. <u>Piping, Valves, Pumps and Compressors in Cl_2 Service</u>

A. All operating practices and procedures shall conform to the recommended design and safety practices specified by the Chlorine Institute Guidelines for Cl_2.

B. Physical and visual checks for HCl and Cl_2 leaks within the operating area shall be made at least once per shift.

C. Immediately, but not later than one hour upon detection of a leak, plant personnel shall isolate the leak and route the emissions to an abatement device that operates with 99 percent efficiency or better until the repair and/or equipment replacement is completed.

Records shall be maintained at the plant site of the dates and times of which:

1. A leak is detected.
2. The leak is isolated or abated.
3. The leak is repaired or the affected equipment is replaced.

These records shall be maintained for a period of two years and shall be made available to representatives of the TACB upon request.

6. The company shall install, maintain and operate a carbon adsorption system (CAS) designed to abate carbon tetrachloride (CCl_4) emissions when the GBB001 Incinerator is not operating. Vent streams containing CCl_4 shall be routed through the CAS while either the incinerator is repaired or the processes producing CCl_4 are shut down. The CAS shall not operate more than 30 minutes before the company begins the orderly shutdown of the Chlorothalonil production units.

COMPLIANCE DETERMINATION

7. The incinerator firebox temperature and the CO and O_2 concentration shall be continuously monitored and recorded. The individual average concentrations shall be reduced to units of the permit allowable emissions rate in pounds per hour and cumulative tons per year at least once every week.

8. The company shall be exempt from the requirements of paragraph G, General Provision No. 7 for a period not exceeding 270 days from the date of issuance of this current amendment. During this time the company shall seek sources of adequate replacement equipment for each process covered by this permit and monitor all pump and compressor seals in VOC service as required by General Provision No. 7.

9. The holder of this permit shall install, calibrate and maintain a continuous emission monitoring system (CEMS) to measure and record the in-stack concentration of CO and O_2 from the incinerator and to measure and record the in-stack concentration of Cl_2 from the EVS stack.

   A. The CEMS shall meet the design and performance specifications, pass the field tests and meet the installation requirements and the data analysis and reporting requirements specified in applicable Performance Specifications No. 1 through 6, Title 40 Code of Federal Regulations Part 60 (40 CFR 60), Appendix B with the following exceptions:

      (i) Continuous emission monitoring certification for Cl_2 shall be performed using the standard gas audit procedure contained in Section 5, Appendix F, 40 CFR 60.

      (ii) Cl_2 calibration gases used in the certification and subsequent quarterly audits shall be in ranges as specified in Section 5, Appendix F and shall be certified $\pm$2 percent standard gases.

      If there are no applicable performance specifica- tions in 40 CFR 60, Appendix B, contact the TACB in Austin for requirements to be met.

   B. The system shall be zeroed and spanned daily and corrective action taken when the 24-hour span drift exceeds two times the amount specified in 40 CFR 60, Appendix B or as specified by the TACB if not specified in Appendix B. Zero and span is not required on weekends and plant holidays if instrument technicians are not normally scheduled on those days, unless the monitor is required by a subpart of NSPS or NESHAPS, in which case zero and span shall be done daily without exception.

Each monitor shall be quality assured at least quarterly in accordance with 40 CFR 60, Appendix F, Procedure 1, Section 5.1.2. For non-NSPS sources, an equivalent method approved by the TACB may be used.

C. The monitoring data shall be reduced to hourly average concentrations at least once every day using a minimum of four equally spaced data points from each one-hour period. The individual average concentrations shall be reduced to units of the permit allowable emissions rate in pounds per hour and cumulative tons per year at least once every week.

D. All monitoring data and quality assurance data shall be maintained by the source for a period of two years and shall be made available to the Executive Director or his designated representative upon request. The data from the CEMS may, at the discretion of the TACB, be used to determine compliance with the provisions of this permit.

E. All cylinder gas audit exceedances of ±15 percent accuracy and any CEMS downtime shall be reported to the appropriate Regional Director and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the appropriate Regional Director.

F. For NSPS sources subject to Appendix F, the appropriate TACB regional office shall be notified at least 30 days prior to each annual relative accuracy testing audit in order to provide the TACB staff the opportunity to observe the testing.

MONITORING

10. The holder of this permit, at the permittee's expense, shall perform ambient air sampling for CCl_4 at locations between ISK Biotech's Chlorothalonil production facilities and the communities surrounding the Greens Bayou Plant. This sampling will be conducted for the express purpose of establishing the actual pattern of CCl_4 being emitted into the atmosphere from ISK Biotech and its impact on the community. This sampling shall be conducted as follows:

A. The company shall conduct ambient air sampling for 6 consecutive one-month periods. During each monthly period, the company shall collect at least 12 sample sets, with no more than 2 sample sets collected on any one day.

Unless alternate arrangements are approved by the TACB Houston Regional Office and the Harris County Pollution Control Department (HCPCD), sampling shall begin during the first April following approval of this amendment.

B. At least 25 percent of the sampling during each month shall be conducted between 6 p.m. and 6 a.m. In addition, at least one sample set per month shall be collected during the weekend (6 p.m. Friday to 6 a.m. Monday).

C. For each sample set, samples shall be collected at two locations downwind of the two Chlorothalonil production units and upwind of the residential areas in the immediate area. See the attached map for details on the location of sample points.

The company may collect a sample upwind of their production facilities to establish the background CCl_4 concentration. If the company elects not to collect an upwind sample, a background concen- tration of zero will be assumed.

D. Only those samples collected at locations downwind of the Chlorothalonil units during at least 80 percent of the sample period will be considered representative; however, results from all samples will be reported. Compliance with this provision will be measured by wind direction data collected at the sample site.

E. Sampling shall be conducted only when the average ambient wind speed during the sample period is greater than 5 miles per hour (MPH) and less than 20 MPH.

F. The Chlorothalonil I and the Chlorothalonil II Production Units shall be in full operation during all sampling runs.

G. The company shall notify the TACB Houston Regional Office and HCPCD at least 2 weeks prior to the start of the first monthly period. In addition, the company shall also notify these agencies at least one week prior to any sampling run to give them an opportunity to observe or participate in the sampling.

H. The sampling and analytical procedures shall be in accordance with NIOSH Method 1003 for the analysis of CCl_4 in air, except as modified by this section. To achieve the lowest possible detection limit, analysis of the desorption solvent will be conducted using a gas chromatograph equipped with an electron capture detector. To prevent significant interference with this detector, methanol will be used as the desorption solvent to remove the CCl_4 from the charcoal of the sample tubes. Drying tubes which utilize sodium sulfate, or equivalent, as a drying medium shall be used to remove humidity from samples prior to the charcoal sampling tubes. The sampling results will be corrected for extraction efficiency.

I. If weather condition or other situation beyond the company's control prevents the completion of these sampling requirements, sampling shall be rescheduled and completed at a later date.

J. The agencies reserve the right to utilize different procedures in any sampling that they conduct. However, samples collected and analyzed as described in this provision are presumed to be an accurate and precise measurement of the ambient air CCl_4 concentration.

K. The company shall complete a sampling report within 60 days of the end of the third- and sixth-monthly sampling periods. These reports will summarize the results of the preceding three months of the sampling program. Each report shall contain an executive summary, sample results, plant operating status during the sampling, records of wind direction and velocity, maps showing the sampling locations, calibration records, analytical data including copies of any chromatograms and copies of all upset reports covering incidents at the Chlorothalonil units during the sampling period (initially 6 months). Copies of this report shall be submitted to the TACB Executive Director, the TACB Houston Regional Office, and the HCPCD.

L. An evaluation of the data* collected by the company during the 6-month period in conjunction with any other data collected by the respective agencies will be used to determine:

i. the need for further sampling

ii. the need for additional CCl_4 abatement

iii. the likely benefit associated with other operating changes (operating procedures, operating schedule, etc.) at the ISK Biotech Greens Bayou Plant.

* Other data specifically relevant to this issue may be used in this analysis if sufficient information is available to put it in perspective; e.g. Houston Regional Marketing network sampling data, other sampling data by the company either independent from or prior to this program, modeling results, relevant health effects information, agency records pertaining to complaints, upsets, etc. may be considered.

Revised_____