CITY OF MOUNTAIN VIEW

Fire Department • Fire and Environmental Protection Division
500 Castro Street • City Hall • 4th Floor • Mountain View, California 94041-2010
650-903-6378 • FAX 650-903-6101

PLAN CHECK REQUIREMENTS FOR INSTALLATION OR UPGRADE OF HAZARDOUS MATERIALS STORAGE OR USE AREAS

The Fire and Environmental Protection Division of the Mountain View Fire Department (650/903-6378) will review your submitted plans using this plan check outline.

Where appropriate, enter below the page number of your submitted plans where the item asked for is indicated and highlight the item in your plans. Include brochures, manufacturer's cut sheets and calculations with the plans when asked for.

If all the information requested in this outline is included in your plans or attachments, they can be reviewed and approved by the Fire and Environmental Protection Division within five working days.

Facility Name: _____ Address: _____

Architect Name: _____ Phone: _____ PC No.: _____ Date: _____

GENERAL

☐ 1. *A chemical inventory** list must be attached to the plans indicating quantities and proposed storage/use locations (MVCC 24.4.2.c). NOTE: The HMMP inventory can be used for this as long as the locations are also identified in the submitted plans.

* For any containers exceeding 60 gallons capacity, identify their size, contents, concentration and hazard class.

* For plating, dipping, coating or other processing tanks, identify their size, contents, concentration and hazard class.

☐ 2. Security measures shall be employed to restrict access to each hazardous materials storage or use area (MVCC 24.3.3). *Identify how access will be restricted for each area on the plans.* Plan page number: _____.

☐ 3. Simplified emergency evacuation procedures shall be posted in all hazardous materials storage or use areas (MVCC 24.4.3.b.1(c)). *Identify the text and location for these procedures.* Plan page number: _____.

☐ 4. Emergency spill equipment to contain and remove any hazardous materials leaks or spills shall be provided (MVCC 24.3.4). *Indicate the type of spill equipment and where it will be stored on the plans.* (The Emergency Response II form of the HMMP may also be used as long as the locations are indicated on the plans.) Plan page number: _____.

☐ 5. *Material Safety Data Sheets (MSDS) must be attached to the plans for all* <u>*mixtures and blends which are listed by trade names*</u> (MVCC 24.3.6).

PRIMARY CONTAINMENT

☐ 6. If any of the proposed hazardous material storage containers will <u>exceed</u> 60 gallons capacity, *indicate the composition of these containers on the plans.* Plan page number: _____. (FOR OFFICE USE ONLY: Are these containers compatible with the materials being stored? _____)

☐ 7. If plating, dipping or other open processing tanks are utilized, *indicate the composition of these tanks on the plans.* Plan page number: _____. (FOR OFFICE USE ONLY: Are these tanks compatible with the materials being stored? _____)

☐ 8 Primary containment of containers and piping must be monitored for leaks. If the entire primary containment surface is visible, visual inspection is adequate; otherwise, an electronic sensor must be used (MVCC 24.3.0.m.1). *Indicate on the plans the type of leak detection monitoring for each hazardous material container storage area and piping run.* Plan page number: _____.

☐ a. If electronic sensors are used, they must be connected to audible and visual alarms (MVCC 24.3.0.m.4). *Attach manufacturer's cut sheets on the electronic sensors.*

☐ b. If electronic sensors are used, their audible/visual alarms shall be located in areas normally staffed with personnel trained in emergency response procedures (MVCC 24.3.0.m.4). *Indicate the location to which the audible/visual alarm is sent.* Plan page number: _____.

SECONDARY CONTAINMENT

☐ 9. <u>Each</u> hazardous materials storage/use location shall be secondarily contained (MVCC 24..3.0.q). *Describe the secondary containment and its composition for each location on the plans.* Plan page number: _____.

☐ 10. If any secondary containment systems employ drains for discharging accumulated liquids (MVCC 24.3.0.q.2(d)):

☐ a. *Show the drain lines and identify the locations where they terminate.* Plan page number: _____. (FOR OFFICE USE ONLY: Discharge to the storm drain is not allowed. Drain lines must discharge to an approved wastewater treatment system, collection system or sanitary sewer drain if uncontaminated. Does the proposed discharge meet these requirements? _____)

☐ b. Drain line materials shall be compatible with the potential discharges. *Describe the materials of construction of the drain lines.* Plan page number: _____. (FOR OFFICE USE ONLY: Are these materials compatible with the potential discharges? _____)

☐ 11. If any secondary containment systems employ a concrete pad or berm, the concrete must be sealed with an epoxy coating that is compatible with the stored/used chemicals (MVCC 24.3.0.q.2(a)). *Attach manufacturer's cut sheets which describe the coating and contains a compatibility chart which verifies that the chemicals being proposed for the storage/use area are compatible and will not degrade the coating.* (FOR OFFICE USE ONLY: Does the secondary containment maintain segregation of any incompatible hazardous materials spillage? _____)

☐ 12. If any secondary containment systems employ storage cabinets, *manufacturer's cut sheets of the cabinets must be attached to the plans* (MVCC 24.3.0.p).

☐ a. *Specify the proposed location(s) for each type of storage cabinet.* Plan page number. _____.

☐ b. Cabinets shall be labeled either: "Hazardous—Keep Fire Away" and "Flammable" in red letters on a contrasting background (for flammable liquid storage) or "Corrosive-Acids" or "Corrosives-Bases" (for corrosive liquid storage). *State this on the plans.* Plan page number: _____.

☐ c. Cabinets shall be constructed of metal (for flammable liquid storage), or lined with a noncorroding plastic if corrosives are stored. *Identify the materials of construction for the cabinets.* Plan or cut sheet page number: _____.

☐ d. Metal thickness of the cabinet shall not be less than 0.043". *Specify the metal thickness.* Plan or cut sheet page number: _____.

☐ e. Cabinets shall be double-walled with a 1.5" airspace between the walls. *Identify these dimensions.* Plan or cut sheet page number: _____.

☐ f. Cabinets shall have self-closing and self-latching doors. *Describe the door assemblies.* Plan or cut sheet page number: _____.

☐ g. Cabinets shall have a minimum height of 2" in the bottom sill. *Specify the sill height.* Plan or cut sheet page number: _____.

☐ 13. If any secondary containment systems employ overpack drums, trays, troughs, etc., they shall be made of metal (if flammables are stored) or polyethylene plastic (if corrosives are stored) (MVCC 24.3.0.q.2(a)). *Identify the materials of construction on the plans.* Plan page number: _____. (FOR OFFICE USE ONLY: Does the secondary containment maintain segregation of any incompatible hazardous materials spillage? _____)

☐ 14. If any secondary containment systems are storage sheds, *attach a manufacturer's cut sheet on the shed.* (FOR OFFICE USE ONLY: Does the secondary containment maintain segregation of any incompatible hazardous materials spillage? _____)

☐ a. Flooring material shall be compatible with the chemicals being stored (MVCC 24.3.0.q.2(a)). *Identify this material.* Plan or cut sheet page number: _____.

☐ b. Doors shall be self-closing and self-latching. *Identify the door construction.* Cut sheet page number: _____.

☐ 15. If any storage or use area will hold only a single container, the secondary container shall hold 110 percent of this primary container (MVCC 24.3.0.q.2(b)). *Indicate the capacity of the secondary container and show the calculations* on the plans.* Plan page number: _____. If any storage or use area will hold multiple containers, the secondary containment shall hold either 10 percent of the aggregate volume or 150 percent of the largest container, whichever is greater (MVCC 24.3.0.q.2(c)). *Indicate the capacity of the secondary containment and show the calculations*.* Plan page number: _____.

☐ * If this area is sprinklered, the calculations described above must also include 20 minutes of sprinkler flow for additional volume of the secondary container (MVCC 24.3.0.q.2(e)).

☐ * This area must be protected by a roof, cover or other structure to prevent the accumulation of precipitation, condensate or other outside liquid (MVCC 24.3.0.q.2(d)).

LABELING/PLACARDING

☐ 16. An NFPA 704 placard shall be affixed to each entrance of a hazardous material storage or use area (including storage sheds) (MVCC 24.3.8). *Indicate where these placards will be placed on the plans.* Plan page number: _____.

☐ a. Placards shall be 10" x 10" with 4" numbers, minimum. *Specify the placard dimensions and number designations on the plans.* Plan page number: _____.

☐ 17. Chemical storage areas, drum and container storage areas, and cylinder rack storage areas shall be labeled as follows (MVCC 24.3.9.b):

☐ a. Areas shall be marked with a sign indicating the hazard class(es) of the chemicals stored. *Indicate the text of the signage on the plans.* Plan page number: _____.

☐ b. Empty container storage areas shall be marked "Empty Drum Storage" or equivalent. *Indicate the text and location of the signage on the plans.* Plan page number: _____.

☐ 18. Piping and tubing containing hazardous liquids and gases shall be labeled as follows (MVCC 24.3.9.d):

☐ a. At 20' intervals with the material name and direction of flow. Piping and tubing shall be marked at each point where changes in direction occur and where wall, ceiling or floor penetrations occur. *Indicate this on the plans.* Plan page number: _____.

☐ 19. Safety cans shall be labeled as follows (MVCC 24.3.9.e):

☐ a. Chemical name and hazard class of the liquid contained therein. *Indicate the text of the labeling on the plans.* Plan page number: _____.

☐ 20. Open tanks, vats and baths shall be labeled as follows (MVCC 24.3.9.f):

☐ a. Chemical name, hazard class and percentage concentration on the tank itself or on the wall directly behind the tank. *Indicate the text and location of the labeling on the plans.* Plan page number: _____.

☐ b. Rinse dragout tanks shall be marked "Rinse Water" or equivalent. *Indicate the text of the labeling on the plans.* Plan page number: _____.

☐ 21. Aboveground storage tanks (tanks exceeding 60-gallon capacity) shall be labeled as follows:

☐ a. Chemical name. *Indicate the text of the labeling on the plans.* Plan page number: _____.

☐ b. Tanks containing process cooling water, rinse water, deionized water, etc., shall be labeled with name of the material contained. *Indicate the text of the labeling on the plans.* Plan page number: _____.

STORAGE/HANDLING

☐ 22. Equipment and machinery used for processing hazardous materials shall be listed, designed and constructed in accordance with approved standards (MVCC 24.3.0.d.3). *Attach a list of process equipment/machinery to the plans and indicate its listing (UL, NFPA, etc.).* Plan page number: _____. *Attach manufacturer's cut sheets of this equipment to the plans.*

☐ 23. (FOR OFFICE USE ONLY): Is the chemical storage layout designed so that compatible hazard classes of chemicals are stored together and incompatible classes of chemicals are segregated by at least 20' unless the secondary containment systems completely isolate all possible spillage so that intermixing cannot occur? _____

☐ 24. *Describe the method used to transport chemicals throughout the facility on the plans* (MVCC 24.3.0.v). Plan page number: _____. *If chemical carts or other transportation equipment is proposed, attach manufacturer's cut sheets of this equipment.*

☐ 25. If containers are used for accumulating hazardous liquids from a remote location (such as batch processing tanks or waste tanks), a liquid level control (i.e., high-level sensor with visual/audible alarm and pump shut-off) which will keep the container from overflowing is required (MVCC 24.3.0.n). (Visual inspection may suffice if the operator is within sight and immediate control of the filling device). *Identify the liquid level control on the plans.* Plan page number: _____. *Attach manufacturer's cut sheets on the liquid level control and audible/visual alarm.*

☐ a. If an electronic sensor is proposed, its audible/visual alarm shall be located in areas normally staffed with personnel trained in emergency response procedures (MVCC 24.3.0.m.4). *Indicate the location to which the audible alarm is sent.* Plan page number: _____.

☐ 26. If any heated containers/tanks will be used for hazardous materials storage or use, a high-temperature power shut-off and low-liquid level power shut-off shall be provided (MVCC 24.3.0.k). *Identify their locations on the plans.* Plan page number: _____. *Attach manufacturer's cut sheets of all electronic liquid level and high-temperature power shut-offs.*

☐ 27. If temperature-sensitive materials are used (for example, materials which must remain refrigerated), a redundant (backup) temperature control system, which will operate upon failure of the primary system, shall be provided (MVCC 24.3.0.u). *Show this system and the electrical schematics for how it is tied into the primary system on the plans.* Plan page number: _____.

☐ 28. If compressed gas cylinders are proposed, all cylinders not in use shall be chained (not strapped) to a stationary structure (MVCC 24.3.0.b). *Show the stationary structure and describe the securement on the plans.* Plan page number: _____.

☐ 29. If dispensing of Class I flammables or Class II combustibles is proposed (including pouring waste flammables into a collection pail or drum), bonding and grounding shall be provided (MVCC 24.3.0.j). Grounding (copper) rods shall be 1/2" thick and at least 8' long and terminate in the ground. Bonding straps shall connect the dispensing container to the grounding device during filling or dispensing activities. *Show the bonding and grounding layout on the plans.* Plan page number: _____.

☐ 30. If shelves are used for hazardous materials storage, they shall be seismically braced (MVCC 24.3.0.s). *Show the stationary structure and type of securement on the plans.* Plan page number: _____.

☐ a. Safeguards across the front face of the shelves (metal lip guards or metal brackets) shall be provided to keep containers from falling or being knocked over (MVCC 24.3.0.s). *Show these guards/brackets on the plans.* Plan page number: _____.

☐ 31. If tanks, piping, valves or fittings used for storage/transfer of hazardous materials are exposed to vehicular traffic, bollards shall be installed (MVCC 24.3.0.o). Bollards shall meet the following:

☐ a. Constructed of steel not less than 4" in diameter and concrete-filled. *Indicate this on the plans.* Plan page number: _____.

☐ b. Spaced not more than 4' apart on center. *Indicate the bollard spacing on the plans.* Plan page number: _____.

☐ c. Set not less than 3' deep in a concrete footing of not less than 15" diameter. *Indicate the depth and footing diameter on the plans.* Plan page number: _____.

☐ d. Set with the top of the post not less than 3' above ground. *Indicate bollard height on the plan.* Plan page number: _____.

☐ e. Located not less than 5' from the tank/piping/valves. *Indicate distances between the bollards and tank/piping/valves on the plans.* Plan page number: _____.

☐ 32. If piping is installed for conveying liquids having a UFC health hazard ranking of 3 or 4, the following are required:

☐ a. Fail-safe-to-close emergency shutoff valves shall be installed at the point of use and at the hazardous materials source (MVCC 24.3.0.d.4(e)). *Indicate on the plans the location of the shut-off valves.* Plan page number: _____. *Attach manufacturer's cut sheets of the shut-off valve to the plans.*

☐ b. Pressurized piping shall be provided with excess flow control valves which shall be located as close to the hazardous materials source as possible (MVCC 24.3.0.d.4(d)). *Indicate on the plans the location of the excess flow valve.* Plan page number: _____. *Attach manufacturer's cut sheets of the shut-off valve and the calculation which determines its correct sizing to the plans.*

☐ 33. If piping is installed for conveying flammable, oxidizing orpyrophoric gases (such as hydrogen, silane, etc.), the following are required:

☐ a. Piping, valves and fittings made of either: (1) Low melt-point materials such as aluminum, copper and brass; (2) materials which soften on exposure to fire (plastic); or (3) nonductile materials, such as cast iron, shall be suitable protected by fire-resistive construction such as gas cabinets or automatic fire sprinklers (MVCC 24.3.0.h.l(a)). *Indicate on the plans the materials of construction for piping conveying flammable, oxidizing or pyrophoric gases.* Plan page number: _____. *If any of these items are constructed of materials described above, indicate the type of fire-resistive protection provided.* Plan page number: _____.

☐ b. Emergency shut-off valves at each point of use and at the source (MVCC 24.3.0.h.2). *Indicate the locations of the valves on the plans.* Plan page number: _____. *Attach manufacturer's cut sheets on the valves.*