

**APPENDIX IV-A
CONTAMINATED WATER MANAGEMENT PLAN**

A1.0 INTRODUCTION

This Contaminated Water Management Plan for the Hawthorn Park RDF provides details for the collection and containment, storage, and disposal of any contaminated water generated at the site, any leachate collected, or any gas condensate generated. The facility is operated as a Type IV MSW landfill and, consistent with 30 TAC Chapter 330, Subchapter H, will not have a leachate collection system. Therefore, this plan focuses on contaminated water management.

Contaminated water is defined by 30 TAC §330.3(36) as leachate, gas condensate, or water that has come into contact with waste. Examples of contaminated water are stormwater runoff that has come in contact with waste at the working face, or stormwater runoff on weekly cover soil that is not intact and has become contaminated by waste. Per 30 TAC §330.165(b), stormwater runoff from areas that have intact weekly cover is not considered as having come into contact with the active face or leachate.

The management of both uncontaminated (i.e. clean) surface water and contaminated water (i.e., water that has come into contact with waste) is described in the remainder of this plan.

A2.0 WORKING FACE WATER MANAGEMENT

A2.1 Uncontaminated Water

Throughout the active life of the facility, best management practices will be used to manage surface water and minimize contaminated water generation at the facility. The facility will be constructed with temporary and permanent drainage features to provide run-on/off controls for stormwater. Weekly, intermediate, and final cover will be graded and maintained to promote runoff, minimize the area of exposed waste, and prevent ponding of surface water as detailed in the Site Operating Plan (SOP). Should ponding of surface water occur in areas having intact weekly cover, intermediate cover, or final cover, the water shall be considered clean and discharged into the facility's surface water management system.

At the working face, a system of temporary diversion berms will be constructed around the active face to minimize the possibility of clean stormwater run-on from becoming contaminated water. These temporary diversion berms will be constructed, as needed, with clean soil and will route clean stormwater runoff into the surface water management system and away from the active face. Calculations for the design of the temporary diversion, or run-on, berms based on various flowline slopes and drainage areas are included in the Part III, Attachment 2, Appendix III-2B.

If a leachate collection system and/or a gas recovery system are employed in the future, leachate and/or gas condensate will be collected and segregated from surface water to minimize contaminated water generation at the facility.

A2.2 Contaminated Water

A system of temporary containment berms will be constructed around the down-gradient portions of the active face to collect and contain surface water that has come into contact with waste. Also, similar containment berms will be constructed elsewhere at the facility wherever they are needed to collect and contain contaminated water. Calculations for the design of these temporary containment berms based on various setback distances from the toe of the active face are included in the Part III, Attachment 2, Appendix III-2B.

Contaminated water at the active face may be allowed to remain within the active face for evaporation or to be absorbed into the waste. However, contaminated water shall not be allowed to remain ponded and become stagnant, nor shall contaminated water be allowed to cause nuisance conditions (e.g., odors or the attraction of vectors). These operational requirements regarding ponded water, odors, and preventing vectors, are described in the SOP, and shall be followed. Quantities of contaminated water that would cause such problems shall be removed and disposed of at an authorized facility, as discussed subsequently in Section A3 of this plan.

A3.0 CONTAMINATED WATER DISCHARGE AND DISPOSAL

A3.1 Contaminated Water Discharge

No discharge of contaminated water off-site or into waters of the United States shall occur without obtaining specific written authorization from TCEQ prior to the discharge. The landfill will be operated consistent with 30 TAC §330.15(h) regarding the discharge of solid wastes or pollutants into waters of the United States.

A3.2 Contaminated Water Disposal

If necessary, contaminated water will be transported off-site to a Publicly Owned Treatment Works (POTW), or similar facility, for treatment and disposal. Transportation will be by tanker truck. Sampling and analysis of the contaminated water will be performed as required by the POTW.

The results of any monitoring required by the POTW, a copy of the disposal agreement, and documentation of disposal shall be placed in the Site Operating Record.

APPENDIX IV-B
CONSTRUCTION AND DEMOLITION (C&D)
MATERIAL RECYCLING PLAN

B1.0 INTRODUCTION AND OVERVIEW

A C&D recycling program will be implemented at the facility to collect and process (segregate) C&D materials into separate material streams for recycling. The program will include various C&D materials that are potentially-recyclable items, such as metal, cardboard, plastic, concrete, bricks, shingles, sheetrock, tires, land clearing debris, wood pallets, or other inert materials. A special area to stage, store, and process potentially-recyclable C&D materials received/salvaged at the facility will be established in an area of the site separate from the active working face to provide convenient access to users, without interrupting landfill operations. It is anticipated that the area will move as landfill development progresses, but in all cases the area will either be located within the current landfill footprint, or in areas within the future landfill footprint.

Separated materials will be stockpiled either in piles (e.g., for shingles and yard waste), or in roll-off box containers (e.g., for sheetrock). The incoming loads of C&D will be weighed at the facility's scales, and then will be visually observed by facility personnel to decide whether the material is clean and composed of material(s) that is suitable to be diverted to the C&D recycling area instead of disposal at the working face.

Some of the processed C&D materials may be diverted for other use (e.g., grinding/wood-chipping to create mulch) or be used at the facility (e.g., concrete debris for road base). Other separated materials will be sent off-site for beneficial use where possible as described herein or landfilled on-site.

Consistent with 30 TAC §328.4, the materials removed for recycling shall not be considered to be accumulated, but shall be considered to be recycled, since they have been contained, covered, or otherwise managed to protect them from degradation, contamination, or loss of value as recyclable material.

B2.0 PROCESS AND STANDARD OPERATING PROCEDURES

Equipment. Standard landfill and material handling equipment may be used for the purpose of separating C&D materials into separate streams. Equipment proposed for this recycling operation also includes: grinders with optional belt-feeders; conveyors; magnets; and a trommel screen.

C&D waste may also be hand-sorted on optional belt-feeder(s) and/or processed using magnets, screen, or hand-picking prior to placement in the grinder(s). In this system, the ground-up waste would pass along a conveyor under a magnet, to separate most remaining metal material.

Material-Specific Process Descriptions. Details of the process for specific types of recyclable materials are presented below.

- Asphalt Shingles. Residential asphalt shingles (RAS) can be beneficially reused. RAS contains ingredients that can be utilized by hot mix asphalt (HMA) producers to enhance paving mixtures. These ingredients include asphalt cement (AC) binder and mineral aggregate. Shingles also contain fibrous mat made from organic felt (cellulose) or fiberglass that can be valuable as fiber in some asphalt paving mixtures. Sampling and analysis of shingle material for asbestos will be done by facility personnel or qualified vendors. The required sampling frequency is one sample per 1,000 tons of shingle material received. Incoming shingles will be brought to the site by customers such as roofing contractors. Those loads deemed by facility personnel as suitable for shingle recycling will be unloaded and stockpiled in the recycling area. Loads that are lightly mixed with other debris may be sent to a belt feeder manual sorting line or may be hand-picked. A magnet is typically also provided to remove nails and other metals. Dumpsters are located below the sorting line for the separated materials. The separated shingles are then moved to another shingle stockpile area. Periodically, the stockpiled shingles are loaded into a third-party transport trailer and hauled off-site to a grinding plant. The asphalt shingle recycling effort may include agreements or partnerships with specialized vendors for transport, grinding, and distribution to asphalt vendors. Any residual shingle material will be landfilled on-site.
- Metals. Metals are separated from the recyclable loads by both hand-sorting and magnetic separation. Materials that are processed on the sort line pass under a magnet that separates metals. The facility may also use a magnet attached to a piece of heavy equipment such as a track-hoe for separating metals from stockpiles of mixed materials. Metals will be collected and stockpiled and transferred off-site to a TCEQ-approved recycling facility.
- Wood and Wood Pallets. Those loads deemed by facility personnel as suitable for wood recycling will be unloaded and stockpiled in the recycling area. Clean wood and wood pallets will then be separated by hand-sorting and mechanical means. The wood will then be ground/chipped/mulched on-site.
- Plastics/Cardboard. Those loads deemed by facility personnel as suitable for plastics and cardboard recycling will be unloaded and stockpiled in the recycling area. The plastics and cardboard will then be hand-sorted and stored in dumpsters until full loads of each material are available for transportation to an off-site TCEQ-approved recycling facility.

Material Unloading. The unloading of C&D materials in the recycling area shall be confined to as small an area as practical. The unloading of such items will be supervised by site personnel and the C&D recycling area will be policed regularly to ensure that any noncompliant materials are removed and deposited in the landfill.

Access Control. Since the C&D recycling area will be located within the limit of landfill footprint inside the permit boundary, access will be through the main landfill entrance, and access control will be accomplished through the overall facility access controls described in Section 7 of the SOP.

Surface Water Management and Other Environmental Controls. To prevent surface water runoff onto and off of the recycling area, this area will be operated and maintained to manage run-on and runoff during peak discharge from the 25-year, 24-hour storm event and to prevent the potential for off-site discharge of waste and contaminated water. This will be accomplished through the installation of run-on diversion berms up-gradient from the recycling area in the same manner as for the active working face – in accordance with the Contaminated Water Management Plan (Appendix IV-A to the SOP). This will prevent excessive surface water from passing through the area and potentially causing any washouts, etc. The recycling area will also be operated in a manner that prevents it from becoming a nuisance or fire hazard. Dust control will be performed. Fire protection requirements for the area are provided in Section 6 of the SOP (in particular see Section 6.4.5).