

Concrete Batch Plant Investigations

Applicable Rules - Air

- 30 TAC 116.110 – Permits
 - All facilities must be authorized by a permit, a standard permit, or a permit by rule. Small mixers under 5 ft³ are exempt.
- 30 TAC 101.4 – Nuisance
- 30 TAC 111.111 – Visible Emissions
- 30 TAC 111.141 to 111.149 – Materials handling, roads, construction
- 30 TAC 101.221 (a) – Maintaining Pollution Abatement Equipment

Applicable Rules - Water

- TXG 110000 – Concrete Batch Plant General Permit
- TXR050000 – Multisector General Stormwater Permit
- TWC 26.121 – Unauthorized Discharge

Applicable Rules – Solid Waste

- 30 TAC 330 – Municipal Solid Waste
- 30 TAC 335 – Industrial Solid Waste

Applicable Rules - Criminal

- TWC 7.177 – Violations of the Clean Air Act
- TWC 7.145 – Intentional or knowing unauthorized discharge
- TWC 7.147 – Unauthorized Discharge
- TWC 7.148 – Failure to properly use pollution control measures (water)

Types of Plants

- Central Mix
- Batch Drop
- Precast

Central Mix and Batch Drop Plants may be located temporarily or permanently.

Plant Location

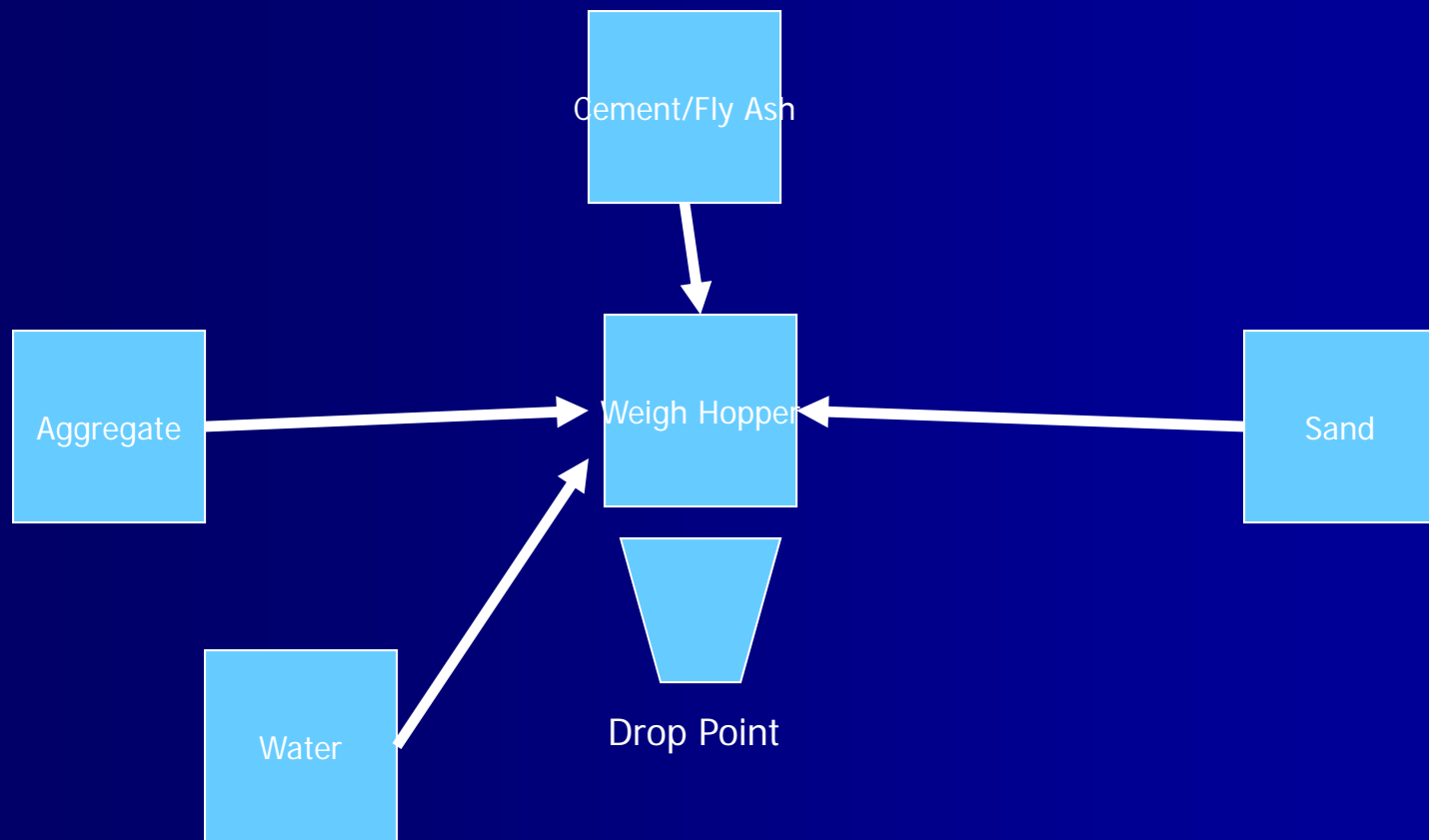
- Permanently located facilities

- Baghouse at least 100 ft from property line
- Equipment, stockpiles, vehicles at least 25 ft from property line

- Temporary facilities

- May not be at site for more than 180 days and service a single project
- Drop point, baghouse, shroud at least 100 ft from property line
- Equipment, stockpiles, vehicles at least 25 ft from property line

Plant Operations



Air Emissions

- Air emissions can be generated at multiple locations within the plant
- Account for the majority of complaints received about concrete plants
- Generally consist of fine particulate dust that can be corrosive due to lime content.

TIPS:

Airborn dust emissions of this type are difficult to photograph
Dust accumulated on a surface at a property can be wet with water and tested with pH paper to determine if it is caustic (high pH)

Use the plate trick to collect accumulating dust

Air Emission Points

Aggregate
Hopper



Conveyor

Aggregate
Stockpile

Air Emission Points cont'd



Aggregate Bin

Air Emission Points cont'd



Baghouses on
Cement/Fly Ash Silos

Air Emission Points cont'd

Weigh Hopper



Drop Point



Air Emission Points cont'd

Central Baghouse



Piping

Air Emission Points cont'd



Plant Roads

Slump/Washout
Stockpile

Typical causes of air emissions

- Road traffic
 - Most are paved (required) but not all
 - Major cause is bad housekeeping
 - Tracking from unpaved areas
 - From overfill at batch drop point
 - Dried dust from truck washout
 - Spills
 - Dust tracked onto public roads
 - Can be controlled with regular sweeping and watering of roads





- Silo and Central Baghouses

- Equipment may not be maintained properly
 - Broken retention rings on bags
 - Leaking or broken bags
 - Leaking piping
- Equipment may not be operated properly
 - Overfilling silo
 - Overpressuring silo and associated baghouses

- Weigh Hopper/Batch drop point
 - Equipment missing or not working properly
 - Shrouds or water mists missing or not working
 - Failure to have central baghouse collection line
 - Leak in central baghouse collection line causes loss of pressure

- Aggregate and Sand Stockpiles, conveyors, hoppers
 - Not usually a problem unless there are extremely high winds
 - Emissions that do occur are generally minor and do not leave the site
- Slump/Washout Stockpiles
 - Not usually a problem as pile is usually worked wet; however, working a pile that has dried out can cause emissions offsite



Water Discharges

- A plant that has a general permit is allowed to discharge a combination of process wastewater and stormwater from designated outfalls.
 - Discharged wastewater must meet permit limitations on TSS, pH (6-9 units), and oil and grease.
 - Discharges from any other location than the designated outfall are unauthorized discharges.
- A plant with a multisector general stormwater permit is allowed to discharge stormwater only.

Tips:

- pH can be tested with a simple pH strip
- water that is white or cloudy may be exceeding the TSS limit and should be sampled

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Protecting Texas by Reducing and Preventing Pollution

June 6, 2000

Dorsett Brothers Concrete Supply, Inc.
Attn: Mr. Todd Vlasak
P.O. Box 630747
Houston, Texas 77263-0747

Re: TPDES General Permit TXG110000

Dear Mr. Vlasak :

This letter serves as verification of the receipt of a Notice of Intent (NOI) by the TNRCC and extension of coverage under the referenced permit. A permit number of **TXG110215** has been assigned to the facility, which includes 1 outfall(s) identified in the NOI, located at 3210 Lilac, of Pasadena, Harris County, Texas.

Please note that:

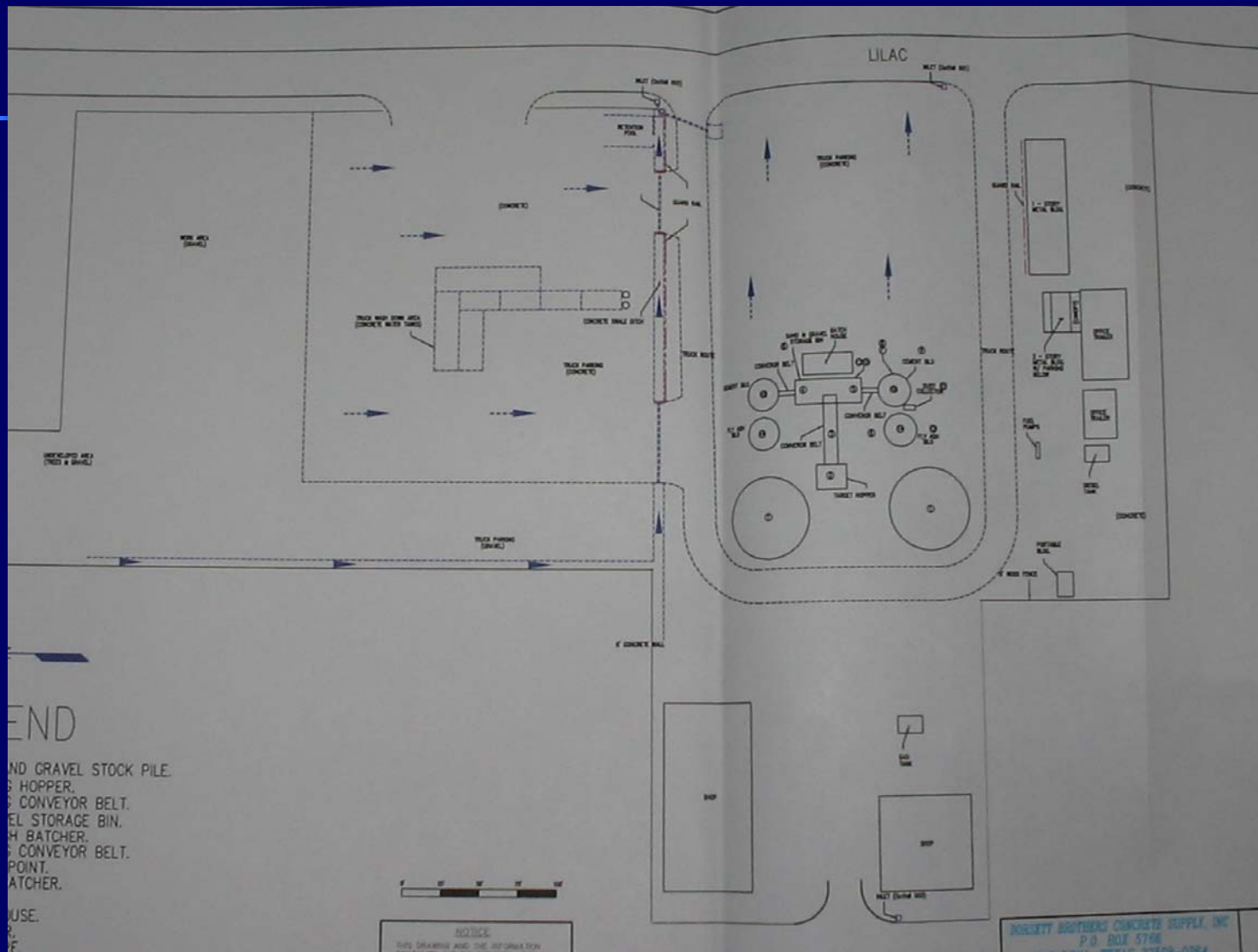
- Coverage under this general permit supersedes and replaces the authorization for discharge previously provided under Certificate of Registration E.J-0000193 issued pursuant to TNRCC rules, Chapter 321, Subchapter J.
- Coverage under this general permit will expire February 14, 2005, unless voluntarily terminated prior to this date or as the result of Commission action to modify or terminate the general permit. The final general permit was published in the Federal Register on January 13, 2000 and you may access the final general permit on the TNRCC Web page.

Discharge monitoring and reporting (DMR) is to be accomplished utilizing EPA Form 3320- this form will be mailed to you in the near future. Upon receipt of DMR's, you should be prepared to submit the results of monitoring dating back to February 14, 2000. In many cases, a facility may only discharge following a substantial or prolonged rainfall; therefore, in order to satisfy all monitoring requirements you should consider sampling the first discharge occurring after February 14th of each year.

Please note that if a discharge associated with this general permit will enter a storm collection system maintained by a municipality or other political subdivision, it is recommended that the owner of the system must be notified of the permitted discharge and a copy of the letter should be made a part of the pollution prevention plan required for the facility.

The SWPPP

- All plants must have a SWPPP
- The SWPPP will contain important information that can be used by an inspector/investigator
 - Names of responsible parties at the plant
 - Plot plan indicating water flow and designated discharge points (outfalls)
 - Results from monthly samples
 - Log of spills, maintenance activities, and monthly inspections



Wastewater Process

- Wastewater treatment at concrete batch plants varies widely but all functional systems will have some of the same basic equipment.
 - Slump/waste concrete pile
 - Washout basin
 - Retention basin
 - Designated discharge point

- Mixer trucks will discharge leftover concrete in the slump/waste concrete pile
- The pile will be worked and rotated daily to prevent large blocks from forming
- Waste concrete is a marketable recycled product used for road base





- Concrete washout pit.
- Pits may vary in size and shape
- Some pits may be concrete lined others may be earth lined

- Settling basins allow the concrete to settle to the bottom and reduce TSS
- Plants may have one or more basins throughout a site, some basins may look more like ditches with a series of low dikes
- Basins must be cleaned on a regular basis to prevent overflow due to silt build up





- Designated discharge points may be a formal outfall with a weir or may be the terminus of an on-site ditch or simply the edge of a driveway
- There may be more than one discharge point at a site
- The SWPPP will show where the designated discharge points are located

Solid Waste

- Solid Waste is not a common problem at most concrete batch plants, however, it should not be ignored.
- Slump or waste concrete is recyclable product and must be managed as such. The discharge or dumping of waste concrete when not being managed as a recyclable material is a violation.
- Many (not all) plants have vehicle shops on site. All plants have diesel storage tanks.
 - Oil, transmission fluid, and other automotive wastes must be disposed of properly
 - Diesel spills must be cleaned up promptly

Offsite Issues

- At contract sites, the contractor is responsible for maintaining an SWPPP
- The contractor should set up and maintain a washout pit and waste concrete area if needed at any contract site and designate this location on the SWPPP
- Mixer truck drivers should not wash out their trucks at any location except the designated wash out pit and should never washout their truck where it appears that the material will discharge off site.

Common Problems at Concrete Batch Plant Sites

Unauthorized
discharge from
slump/waste
concrete pile





Failure to keep settling basin clean has resulted in overflow and discharge exceeding the limits of the permit



Though it is difficult to show dust emissions in a photo, this cement tanker has a damaged center hatch allowing dust to be emitted when silo is being filled

Poor housekeeping
has led to blockage
of wastewater
control devices





Road is paved as required but poor housekeeping (failure to sweep or clean) has allowed at least 2 inches of concrete dust to build up on paved surface and generate offsite emissions when traffic crosses the road



Failure to clean out settling basins and washout pits has caused them to overflow



Solid waste issues
should not be
forgotten