APPENDIX D
CHRONOLOGY OF OPERATIONS AT YARD 520 AND NIPSCO MICHIGAN CITY GENERATING STATION RELATED TO CCBs

This appendix presents a brief summary of the operational history of the Yard 520 Restricted Waste Facility and changes in operations at NIPSCO's Michigan City Generating Station that may have affected the types of wastes disposed at Yard 520.

- Initial filling at Yard 520 began in 1966. (1)

- On February 1, 1972, the Town of Pines Town Board approved the disposal of "boiler slag at Drake's dump on US 20". Note: Yard 520 was owned by the VP of Brown Inc., Donald and Edwin Drake. (1) [Slag may have been used to form the slag roads onsite.]

- Historically, Yard 520 has accepted fly ash wastes (usually a slurry material) from the NIPSCO Michigan City and Bailly Generating Stations twice a year. Additionally, some construction/demolition debris (concrete, bricks, lumber, steel, and site clearing overburden, trees and brush) was disposed of onsite. Steel waste was also received and hauled offsite to a scrap metal recycler. (1)

- Yard 520 fill consists principally of fly ash material with an estimated 5% of the total fill material consisting of other debris. (2) According to Barry Brown, most of the CCBs material at Yard 520 is fly ash rather than other types of CCBs (B. Brown, personal communication, 2004).

- Bailly Generating Station converted their ash collection system to a dry ash process in 1981. In the spring of 1981, disposal of ash to Yard 520 from the Bailly Generating Station was terminated. (1)

- According the Brown records, approximately 1.5M cubic yards (CY) of ash from Michigan City were disposed at Yard 520 between 1975 and 2001. Between 1981 and 1989, approximately 600 CY of fly ash and 400 CY of fly ash debris from Bailly were disposed.

- According to NIPSCO, most of the bottom ash from Bailly and Michigan City was sold for beneficial re-use, although there may have been some small portion disposed.

- May 15, 1981, the Indiana State Board of Health (ISBH) grants temporary permission to continue to dispose of NIPSCO Michigan City fly ash until November 1, 1981. Formal permit application to

be submitted to ISBH by November 1, 1981. (3) ISBH continues to grant interim approvals to dispose of fly ash as they review permit application. (4, 5, 6, 7)

- In November, 1981, Brown Inc. submits Construction/Operation Application for Solid Waste Management Permits to ISBH. (1)

- As of November 1, 1981, Brown reports approximately 15 of the 45 acres available have been covered with up to 20 feet of fly ash. Most fly ash was deposited in the original depression near the highway's edge (specific location not given). (1)

- December 4, 1981, Vernier China Co. grants Brown permission to fill the area south of the Vernier China facility on the Vernier China Co. property with fly ash. (1)

- ISBH issues permit to Brown, May 10, 1983 (Solid Waste Facility renewal permit FP #64-04). The Yard 520 Solid Fill Site consists of a 45 acres permitted for filling (includes northern and southern areas). (8)

- February 8, 1984 - Brown, Inc. requests approval to dispose of fly ash from NIPSCO's Bailly and Mitchell Generating Stations. (9,10)

- April 4, 1984 – Brown, Inc. withdrew request to dispose of fly ash from NIPSCO's Bailly and Mitchell Generating Stations. (11)

- Between 1984 and 1986, IDEM inspector suggests southern areas of Yard 520 be excavated about 15 feet to underlying clay unit, so that this clay forms the base of the waste unit. Suggestion is implemented by Yard 520 (27). In 1987 and 1988, clay was also excavated to construct side walls of the southern area. (14, 15, 28)

- The northern area of the landfill was closed and re-vegetated in 1986-1987. (27)

- A Potential Hazardous Waste Site Preliminary Assessment was conducted for Yard 520 on November 7, 1985. (12)

- In 1987, a permit renewal application was submitted. The application was revised in 1988-89 to comply with 329 IAC 2 regulations for Type II wastes. (27)

- Note: In 1988, the following sources and anticipated quantities of wastes were anticipated to be deposited at Yard 520 (17):

Material	**Source**	**Quantities** (cubic yards)
Fly ash	MC NIPSCO	80,000
Fly ash	Bailly NIPSCO	10,000
Fly ash	DM NIPSCO	40,000
BOF Rubble*	Bethlehem	15,000
Caster Rubble**	Bethlehem	15,000
Construction Debris	Various	5,000
Demo Debris	Various	5,000
Excavations	Various	5,000
Tires	Brown/Bulk	1,000

*BOF Rubble includes basic oxygen furnace (BOF) slag and materials associated with slag production (steel cable, conveyor belting, lumber, pallets, plastic buckets, and scrap steel)

**Caster Rubble includes material associated with steel production (brick, mortar, mortar pails, pallets, lumber, and alloy packaging)

- In 1989, construction takes place to divert Brown Ditch. New flow is from the southwest corner of Yard 520, along the southern boundary (Railroad Avenue) to the southeast corner then north and off site to re-join original channel. (14)

- IDEM issues permit for Type II waste disposal in 1989. (27)

- Between 1989 and 1996, IDEM and Brown correspond and meet to discuss waste designation for the southern area. (27, 15) Brown requesting modification to Type IV designation.

- In April 1991, a Construction Quality Assurance Plan is prepared for installation of a clay barrier wall for the Yard 520 Solid Waste Fill site. The purpose of the barrier wall is to provide a low permeable separator between the northern area (Type III) and southern area (Type IV). The barrier is to be 10 feet thick, directly connected to the existing liner for the southern area, extend to the ground surface, and tie in at the surface to a 2-ft clay cover for the northern area. The barrier is designed to have a permeability no greater than 10^{-6} cm/sec. (29)

- NIPSCO's Michigan City Generating Station switches from Illinois Basin coals to Powder River coals (high sulfur low calcium to low sulfur high calcium) in 1992 (K. Strnatka of NIPSCO, personal communication, 2004)

- In 1995, an Order is agreed between Brown and IDEM (27) to construct the clay barrier (20). In 1995, the barrier is installed. It is typically 10 feet thick, starting from 3 to 4 feet below the top of the existing clay liner for the southern area, extending up to the proposed grade for a service road, resulting in a height of 17 feet. (20)

- In May 1997, IDEM issues a permit for closure of the northern area and operations of the southern area. (8)

  Northern area, RWS Type II area
  - Separated from southern area by clay barrier in September 1995 (8)
  - Regulated by Type II permit FP #64-04 (May 10, 1983) (8)
  - Approx. 27 acres (8)
  - Had not received waste since 1987 (8, 16)
  - Areas to be closed (8)

  Southern area, RWS Type III fill area
  - Approx. 15.6 acres (8)
  - Formerly regulated by permit FP#64-04 (8)
  - After construction of the clay barrier (20), Southern area regulated by permit FP #64-07 and classified as Type III (permit FP#64-07 granted May 27, 1997). (8)

- Closure of northern area approved by IDEM July 27, 1998 (18)
  - Closure activities were initiated in 1987 and completed in 1996 (16, 17, 30)
  - Closure and Post Closure Plan was submitted in August 1996, March 1997 (16, 20)
  - Closure Certification Report dated September 1996 (2)
  - A Certificate of Closure was issued by IDEM on July 27, 1998 (18)

- NIPSCO's Michigan City Generating Station switched to a dry fly ash processing system in 1998. More frequent disposals of smaller volumes of waste expected. (24)

- Permit Renewal Application submitted to IDEM December 2001. (18)

- In April 2003, IDEM is notified that Yard 520 will not longer be accepting waste and the facility will be closed. (25) The last delivery of fly ash from Michigan City to Yard 520 took place in early 2001 (V. Blumenfeld, personal communication, 2004).

- Modified Closure and Post-Closure Plan submitted to IDEM under Permit FP#64-07. (21) No additional material was accepted at the Type III Unit after April 24, 2003. (21) Only 11.2 acres of the permitted facility had been used for waste disposal at the time of closure. (23) The facility had only accepted fly ash from NIPSCO's Michigan City Generating Station. (18)