

Privileged & Confidential
Prepared at the request of General Motors Counsel

***Phase I Environmental
Site Assessment
Building 9
Delphi-Flint West Facility
Flint, Michigan***

General Motors Corporation
Worldwide Facilities Group
Environmental and Regulatory
Support - Remediation
Detroit, Michigan

June 1997

TECHNICAL REPORT

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Executive Summary

A Phase I Environmental Site Assessment (ESA) was conducted by Blasland, Bouck & Lee, Inc. (BBL) on Building 9 (the Property) of the Delphi-Flint West Facility located in Flint, Michigan. In May and on June 19 and 20, 1996, BBL personnel conducted interviews, reviewed files, and performed an inspection of the Property and the immediate surrounding area. On October 9, 1996, BBL personnel revisited the site and inspected the integrity of the trenches inside the building after decontamination of the trenches had been completed. Assessment activities were consistent with American Society for Testing and Materials (ASTM) Standard E 1527-97, and usual and customary practices.

The areas investigated during the Phase I ESA were:

- underground storage tank (UST) systems
- aboveground storage tank (AST) systems
- polychlorinated biphenyl (PCB) containing materials
- asbestos containing materials
- sumps and trench systems
- lubrication systems
- process systems
- waste management areas
- deactivation activities
- pits, ponds, and lagoons
- wastewater collection and treatment processes
- batteries and lift truck areas
- maintenance areas
- hydraulic elevators
- process lines
- fill areas
- exterior work areas
- state and federal files
- property files and records
- personal interviews
- database searches

BBL identified five potential areas of environmental concern (PAOC). The definition of a PAOC is an area with a known or documented release of a hazardous substance or petroleum product to soils or groundwater that could pose an unacceptable risk to human health or the environment. BBL recommends that a Phase II Environmental Site Investigation (ESI) be conducted at these locations to confirm or deny the presence of contaminants at levels that could pose an unacceptable risk to human health or the environment. The five PAOCs identified are as follows:

PAOC#1 - Electrical Substation

Minor amounts of oils were observed seeping into southern sidewall cracks in the electrical substation during the October 1995 Property walk through conducted by BBL. During the June 1996 Property walk through, the cracks in the south wall were plugged with silicone caulk. It is thought that the seepage is from grinding/welding area oil rather than from the transformers. This area should be further investigated to determine if contaminants are present in soil and groundwater at concentrations that could pose an unacceptable risk to human health and the environment.

PAOC #2 - Stormwater Pump and Sump Located in the North Storage Area

Releases of oils were observed during the October 1995 Property walk through and historically have been documented from the overflow of the north storage yard stormwater and wastewater collection system. The overflow of these substances was documented as flowing 75 to 100 feet east down the adjacent railroad tracks. In addition, personnel interviews conducted during the June 1996 Property visit indicated releases of oil and oily wastewater, the most recent of which occurred on May 26, 1996. This area will require further investigation to determine if contaminants are present in soil and/or groundwater at concentrations that could pose an unacceptable risk to human health and the environment.

PAOC #3 - Northwest Side of Building Gravel Area

During the October 1993 Property walk through, oil staining was observed on the gravel area along the northwest side of the Property. During the June 1996 Property visit, GM personnel indicated that this area was excavated to a depth of 6 to 12 inches, and the excavated material was disposed by USPCI. Further investigation is required to determine if contaminants are present in soils and groundwater at concentrations that pose an unacceptable risk to human health and the environment.

PAOC #4 - Fire Protection Trench Excavation

On November 26, 1996, during trench excavation activities for a fire protection system in Building 9, an oil-like substance was observed seeping into the trench in the vicinity of Column B-9. This event was reported to BBL by personnel conducting the facility deactivation. This visual evidence of an oil-like substance seeping into the excavated trench indicates that this area meets the definition of a PAOC. Further investigation is required to determine if contaminants are present in soils and groundwater at concentrations that pose an unacceptable risk to human health and the environment.

PAOC #5 - Former Trichloroethylene Degreasing Unit and Sump

In a report documenting a UST removal and petroleum contaminated soils removal operation, low levels of trichloroethylene (TCE) were reported in the groundwater 150 feet downgradient from Building 9. The source of the TCE is unknown, but it may be the former TCE degreasing unit and sump. Due to the TCE groundwater impacts 150 feet downgradient from known TCE operations and a documented release, BBL considers this area and the groundwater to the north a PAOC. Further investigation is needed to see if TCE impacts are originating from the Property, and if this area meets the definition of a PAOC. Further investigation is required to determine if contaminants are present in soils and groundwater at concentrations that pose an unacceptable risk to human health and the environment.

1. Introduction

1.1 Purpose

This report summarizes the results of a Phase I Environmental Site Assessment (ESA) that BBL Environmental Services, Inc. (BBL) conducted at Building 9 and in the immediate surrounding areas (the Property) at Delphi-Flint West, General Motors Corporation (GM), located in Section 12, Township 7 North, Range 6 East, Flint, Genessee County, Michigan. A property location map is presented as Figure 1. The Property is within Flint West at the northwest corner of Stevenson Street and Glenwood Avenue in Flint, Michigan. Figure 2 shows the Property boundaries, and provides a layout and a description of surrounding land use. This Phase I ESA was performed at the request of GM Legal Counsel, consistent with usual and customary practices, as defined by the Scope of Work and is consistent with the American Society for Testing and Materials (ASTM) E 1527-97, the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*.

The purpose of this Phase I ESA is was to identify potential areas of environmental concern (PAOCs) related to the subject Property. PAOCs are defined as areas with a documented release of hazardous substance or petroleum product to soils or groundwater that could pose an unacceptable risk to human health or the environment. The determination that an area constitutes a PAOC is based on a review of available property records, interviews with property personnel, property reconnaissance, a review of reasonably available public information, and knowledge of past or present processes at the property. If PAOCs are identified, then a Phase II Environmental Site Investigation (ESI) may be recommended at specific locations identified. The Phase II ESI is an intrusive study performed to confirm or deny that a known or documented release poses an unacceptable risk to human health or the environment.

1.2 Scope of Work

The Property inspection was conducted by BBL personnel on June 19 and 20, 1996. The integrity of the trenches was inspected on October 9, 1996. The scope of work was to identify past, present, or potential environmental concerns related to both the subject Property and adjoining properties. BBL performed a property walkover, interviewed site personnel, conducted an environmental database search, and reviewed historical records. In addition, a public records review was also conducted.

Files reviewed for this Phase I ESA included:

- Environmental files and architectural/engineering drawings maintained at Flint West. Environmental files spill reports, waste manifest, historical investigation and remediation projects, maintenance files, and RCRA files.
- Aerial photographs of Building 9, Flint West, and surrounding areas for the years 1965, 1971, 1977, 1986, and 1991, compiled by the Genesee County Metropolitan Planning Commission. The 1991 aerial photograph is included in Appendix A.
- Records of the MDEQ (formerly Michigan Department of Natural Resources [MDNR]), Waste Management Division, Environmental Response Division (ERD), Surface Water Division (SWD), and Underground Storage Tank Division (USTD) available under the Michigan Freedom of Information Act (FOIA), P.A. 442 of 1976.
- Records of the State of Michigan Fire Marshall, Underground Storage Tank Department.

Additional sources of information consulted include:

- A federal and state environmental database search performed by Environmental Risk Information and Imaging Services (ERIIS). The ERIIS search was performed for the Property and surrounding areas in accordance with the ASTM E 1527-94 defined search radii (Appendix C).
- Available Sanborn Maps (Appendix D).
- Interviews with environmental and engineering personnel with knowledge of the property.
- Interviews with personnel and consultants conducting oversight of facility deactivation, decontamination, and demolition activities.

1.3 Report Organization

The remainder of this report is divided into four sections. Section 2 describes the Property, surrounding land use, topography, geological and hydrogeological setting, hydrology, surface water, historical land use, Property features and operations. Section 3 describes the environmental conditions at the Property, features and processes at the Property, activities conducted as part of facility deactivation, and BBL's determination as to whether or not these areas meet the definition of a PAOC. Section 4 presents a review of federal and state public records, including the ERIIS database, Sanborn Fire Insurance Maps, and MDEQ files available through the Freedom of Information Act (FOIA) and all files available at the site. In addition, sites that were listed in the database review were assessed to determine if they met the definition of a PAOC at the Property. Section 5 presents BBL's conclusions based on the results of the Phase I ESA. Figures, tables, and appendices also are attached to this document.

1.4 Phase I ESA Limitations

The conclusions reached herein are based on the limits of the investigation described in this report. BBL can offer no assurances and assumes no responsibility for Property conditions or activities that were outside of the scope of inquiry provided. In performing its investigation, BBL has used usual and customary practices, and has performed the scope of work by keeping within industry standards as defined in ASTM E 1527-97 and standard agency procedures, as appropriate. It is understood that BBL has relied on the accuracy of documents, oral information, and other material and information provided by sources documented in this report. There can be no assurance, and BBL offers no assurance, that Property conditions do not exist or could not exist in the future that were undetected and that could lead to liability in connection with the subject Property. Similarly, past and present activities on the subject Property indicating potential environmental concerns may not have been discovered by BBL's inquiries. Such activities may include those that would indicate the potential presence of regulated hazardous substance at the subject Property. BBL has analyzed the information obtained in this limited investigation, in keeping with existing environmental standards and enforcement practices, but cannot accurately predict what actions any given agency make take presently, or what standards and practices may apply to the subject Property in the future.

2. Site Description

2.1 Property Description

Building No. 9 at Flint West was constructed in 1929 and was used as a machine shop. The machine shop evolved into an assembly line manufacturing plant. The major products manufactured at this plant were intake and exhaust engine valves. Throughout the history of the plant, processes associated with intake and exhaust engine valve manufacturing included forming, forging, grinding, plating, and heat treating. The former plating area shown in Figure 3 was operational from 1982 to 1991. An addition was made to the Property in 1971 and an overhang roof was added to the north storage area in 1986. The total area of the building is approximately 80,897 square feet. The building was undergoing facility decommissioning activities at the time of the Property visits. Most manufacturing process machines had been removed in accordance with the facility deactivation plan. Figure 3 shows the layout of the Property and the location inside the building where each process was carried out.

Deactivation activities at Building 9 included removal of the machinery and wooden floor blocks, cleaning, filling, and concrete capping of trenches and sumps, and demolition of the plant building. There are no immediate plans for the land use after the Property has been deactivated.

Building 9 is bordered by industrial automotive manufacturing facilities to the east, southeast, north and west. To the immediate south is a parking lot. Residential homes are located beyond the parking lot to the south and southwest. The south side of building No. 9 has no windows, doors, or protruding objects (Photograph #1, Appendix B).

The eastern face of building No. 9 has no windows or doors, and there are two small capped steel pipes of unknown use that extend approximately two inches from the wall. Plant No. 38, a 326,000-square foot manufacturing facility, is located to the southeast of the Property.

The north side of the Property consisted of:

- A loading dock (Oils and greases in 55-gallon drums, grinding swarf disposal (non-hazardous) and waste metal chips from shearing, Photograph # 4, Appendix B)
- A 6,000-gallon hydraulic oil product aboveground tank within a secondary containment system (as discussed in section 3.1.10.2, Photograph # 3, Appendix B)
- A stormwater collection sump and trench located in the loading dock area (Figure 5 and Photograph #s 13, 14, and 15, Appendix B). The stormwater collection sump and trench collected and transported stormwater that flowed over the north storage area to the industrial wastewater pre-treatment plant (IWWPTP) through underground piping to the IWWPTP of Building 9. Wastewater then proceeded through the main IWWPTP piping leading to GM's Flint West Industrial Wastewater Pre-Treatment System (IWWPTS) located west of former Building 5. The stormwater collection system transported water to the IWWPTS through an underground pipe. The pipe exited the building just west of the pump power room.
- A number of drums containing roofing tar, roofing paper, and sand were located in this area. The materials in these drums were used for miscellaneous roof repair. These drums were removed from the Property during facility deactivation.
- A stairway entrance was located in the central northern side of Building No. 9. A gravel area surrounded the stair entrance (Photograph #s 5 and 16, Appendix B).

- An approximately 4-foot by 4-foot concrete pad, shown in Figure 3 (and Photograph # 6, Appendix B), where a former drinking-water supply well was located. The former well, which is discussed in Section 3.1.13, was constructed in 1937 to a depth of 218 feet but has not been used since the 1950s. The facility exit points for industrial wastewater, steam, and compressed air pipes are situated in this area and run approximately 40 feet above the ground and proceed northwest from Building 9, across the railroad tracks and into Plant 8. These pipes will remain in place after the facility deactivation.
- Three steel and concrete pipes protruded from the north wall of building No. 9. Review of records and personnel interviews did not indicate that these pipes met criteria of PAOC. There was no staining apparent or any other environmental concern.
- A network of active railroad track lines and spurs located to the north-north west of the building (Photograph # 7, Appendix B).

The western face of Building No. 9 consists of the Property entrance, a garage door for large equipment and fork lift entrance, and a large tractor trailer loading dock capable of loading/unloading two tractor trailers simultaneously (Photograph # 8, Appendix B). A stormwater trench is located at the base of the loading dock.

2.2 Surrounding Land Use

Figure 2 shows the surrounding land use in the vicinity of Building 9. Buildings associated with Flint West are situated along a one mile stretch of the Flint River. Previously, the Facility consisted of approximately 40 buildings, several of which have undergone closure and demolition. Buildings at Flint West range from a few hundred-square feet to more than 700,000-square feet in size. The surrounding properties associated with the Facility were developed for the manufacture and assembly of automobiles and automobile parts as early as 1915.

The Property is bordered to the east by Stevenson Street, which has a stormwater runoff gradient to the north towards the Flint river. Beyond Stevenson street is a large automobile parking lot. To the south side of Building 9 is an asphalt parking lot with stormwater runoff controlled by drains. The west side of Building 9 consists of railroad tracks and an asphalt/cobblestone road proceeding down a gradient towards the west.

The Flint River, in the vicinity of the Property, is controlled and contained within a concrete trench constructed in 1966 and 1967 by the United States Army Corp of Engineers. The trench is bordered by parking areas and Facility support roads.

2.3 Topography

Property topography is affected by the proximity of Building No. 9 to the Flint River. The Property is located approximately one-tenth of a mile south of the river and approximately 756 feet above mean sea level. The Property was approximately 10 to 13 feet above the water level of the river at the time of BBL's Property visit. The topography on the Property is generally flat, but the surrounding land is sloped towards the Flint River. The Property is overlain with concrete and asphalt. A pumping and trenching system, designed to intercept stormwater generated from the north storage yard, pumps stormwater to the wastewater treatment system for the Flint West Facility. Inside the building, the floor is constructed of approximately 8 inches thick concrete, overlain in the past with wood blocks. The wooden floor blocks were removed during the facility deactivation.

2.4 Geologic and Hydrogeologic Settings

Pleistocene glacial drift overlays Paleozoic sedimentary rocks in the Flint area (Wiitala *et al.*, 1963). Pre-Cambrian igneous and metamorphic rocks of the Canadian shield form the bedrock upon which several thousand feet of sandstone, limestone, shale, and evaporites of the Michigan Basin have been deposited. The Flint area is located in the southeast portion of the basin.

Glacial drift of generally low hydraulic conductivity mantles the bedrock in nearly all parts of Genesee County. These deposits consist of clay, silty sand, gravel, and boulders. Hydraulic conductivity is highly variable in both the horizontal and vertical planes. Glacial deposits, in general, are an important source of water in Michigan. However, outwash plains and buried stream valleys are the most productive facies. The lacustrine deposits that are predominant in the vicinity of Flint have low permeabilities due to the abundance of clay (Wiitala *et al.*, 1963). Thin lenses of permeable sand and gravel yield adequate water for domestic use, but the primary source of groundwater in communities surrounding the Flint area is the Pennsylvanian Saginaw aquifer (Wiitala *et al.*, 1963). The City of Flint itself purchases water from the City of Detroit, which obtains water from Lake Huron (City of Flint Water Services, personal communication). The glacial deposits are approximately 50 feet thick in the vicinity of Flint (Genesee County Department of Public Health, personal communication). The top of the Saginaw formation lies between 600 and 700 feet above mean sea level MSL. The Property is approximately 756 feet above MSL.

In the vicinity of Flint, sandstones of the Pennsylvanian Grand River and Saginaw formations form the uppermost bedrock aquifer. Fractures greatly enhance the permeability of the sandstone beds. The thickness of the Grand River-Saginaw aquifer varies from 200 feet to 400 feet (Mandle and Westjohn, 1989).

Shale, siltstone, and thin-bedded sandstone intercalated with shale of the lower Saginaw formation serve as a regional confining unit separating the Grand River-Saginaw aquifer from the Parma-Bayport aquifer (Wiitala *et al.*, 1963). The Late Mississippian Bayport Limestone and the Early Pennsylvanian Parma Sandstone Member of the Saginaw formation make up the Parma-Bayport aquifer. The Bayport Parma aquifer is not used as a source of water in the vicinity of Flint (Westjohn and Weaver, 1996).

The Mississippian Michigan formation lies beneath the Saginaw formation. The upper portion is composed of shale, thin-bedded limestone, dolomite, gypsum, and anhydrite, and separates the Parma-Bayport aquifer from the Marshall aquifer (Mandle and Westjohn, 1989). Sandstones in the lower portion are hydraulically connected to the Early Mississippian Marshall Sandstone below and compose the Marshall aquifer. The thickness of the Michigan formation averages around 100 feet in the vicinity of Flint (Wiitala *et al.*, 1963).

The Marshall formation is present in most of Genesee County. It consists primarily of sandstone, with some beds of conglomerate, shale, and dolomite. Thickness varies from over 200 feet in the northern part of the county to 70 feet in the south. In some places, the Marshall, Michigan, and Saginaw formations form a single aquifer (Wiitala *et al.*, 1963).

The Early Mississippian Coldwater Shale forms the base of the aquifer system and ranges in thickness from 500 to 1,100 feet.

2.4.1 Site Specific Geology

A one-foot-thick layer of concrete was present across most of the property. Near-surface lithology consists of sand and gravel fill material in the uppermost three feet overlying glacial deposits. A light brown sandy clay is present

from 3 feet to 14 feet below land surface (BLS). Below 14 feet, lies a gray till. The depth of the clay increases towards the Flint River as the sand and gravel layer (and fill) thickens. The native clay and till in the Flint vicinity are not useable aquifers. Soil descriptions are available from soil borings performed as part of UST removal activities at Plant 7, 150 feet to the north of Building 9. The lithology is as follows:

<u>Sample Interval</u>	<u>Description</u>
1-3 feet BLS	Brown Clayey Sand, trace of pebbles.
3-5 feet BLS	Brown sand, trace of clay, silt, pebbles, and coal.
5-7 feet BLS	Brown medium-grained sand, trace of pebbles, slightly moist.
7-9 feet BLS	Brown medium-grained sand, trace of pebbles, moist.
9-11 feet BLS	Brown medium-grained sand, trace of pebbles, saturated.
11-13 feet BLS	Brown medium-grained sand, trace of pebbles, saturated.

The till in the Flint vicinity is not a useable aquifer, because it is less than 25-feet thick, which is one of the basic definitions for an aquifer and according to the Genesee County Health Department (personal communication), there were no potable water wells drilled to tap the glacial drift since 1967, when records were first required. In addition, Michigan Department of Public Health regulations require all potable wells to be cased to 25 feet BLS (Rule 818). Personnel from the City of Flint Water Services state that hookup to the municipal water supply is mandatory within City limits.

Based on data collected from property files, groundwater elevation data were collected on July 20, 1996 (after one week of little or no precipitation) and August 4, 1996 (within 24 hours after a 48 hour rain event). The results of both events indicate that groundwater flows primarily towards the Flint River (O'Brien & Gere's Summary Report - Subsurface Assessment, Delphi Flint West Facility, Flint, MI, January 3, 1996). This data concurs with additional file reports on the surrounding area, that determined a groundwater flow direction towards the Flint River (BBL, 1995).

The water table in this area lies approximately 4 to 16-feet BLS, depending on distance from the Flint river, and the groundwater flows toward the Flint River at the facility.

2.5 Hydrology

Historically, stormwater runoff was collected in catch basins from the parking areas and roof drains and was transferred by stormsewer lines through stormwater outfalls to the Flint River (Figure 5). According to Facility personnel, previous operations involved the collection of stormwater runoff from the western portion of the roof and other areas in which oil and other contaminants accumulated. This stormwater was transferred by a separate industrial process water sewer system to the IWWPTP. The sewer system connecting to the IWWPTP exits Building 9 approximately 15 feet west of the electrical sub-station (Figure 5).

Facility personnel indicated that after the demolition was completed, approximately one-third of the roof conductors were converted to catch basins and the remainder were plugged. The catch basins were connected to the stormwater system that discharges to the Flint River. After demolition, the press pits were cleaned, cracked (for drainage), and filled with clean fill or crushed concrete.

2.6 Surface Water

As previously noted, the Flint River lies to the north of the Property and is controlled and contained within a concrete channel. The channel was constructed in 1966 and 1967 by the United States Army Corps of Engineers for flood control. The channel is bordered by a railroad spur, an electrical substation, Building 37, parking areas, and support roads for the Property. Schwartz Creek lies to the east and south of the Property and is a tributary to the Flint River.

2.7 Historical Land Use

Based on a review of historical Sanborn maps dated 1909, 1914, and 1928, the Property was a residential area prior to the construction of the plant. Since 1929, engine exhaust and intake valves were manufactured at the building. The following are the processes that have been conducted at Building 9 (Environmental conditions are discussed for each process in the sections noted in parentheses.):

1. Forging (Section 3.1.1)
2. Plating (Section 3.1.2)
3. Degreasing/parts cleaning system (Section 3.1.3)
4. Process wastewater collection and transport systems (Section 3.1.4)
6. Lubrication sumps and systems (Sections 3.1.7 and 3.1.8)
7. North Storage Lot Stormwater Recovery System (Section 3.11.5)
8. Grinding/Forming (Section 3.1.7)
9. Lubricating Oils and Recycling System (Section 3.1.7.2)
10. Welding, Forming, and Heat Treating Areas (Section 3.1.8)
11. Soluble Lubricating Oils Treatment and Recycling System (Section 3.1.8.2)
13. Tumblers (Section 3.19)
14. Hydraulic oil systems (Section 3.1.10.2)
15. Air pollution treatment systems (No environmental conditions of concern related to this process were noted during the site inspection, Section 3.1.14.)
16. Heat Treating (No environmental conditions of concern related to this process were noted during the site inspection, Section 3.1.15.)
17. Waste management procedures (No environmental conditions of concern related to this process were noted during the site inspection, Section 3.1.16.)

Figure 3 shows the location where each process was carried out inside the building.

Since 1929 the Property operated as an engine intake and exhaust valve manufacturing facility. The nature of the industry and associated industry growth, especially in the last few decades, has created an extensive list of both raw materials and lubricating, treatment and degreasing chemicals. This is documented by the Material Safety Data Sheet (MSDS) library for Building No. 9, which is located in Plant 7.

2.8 Historical Aerial Photograph Review

To obtain a historical perspective of the Property, a review of historical aerial photographs was conducted. Aerial photographs from the years: 1965, 1971, 1977, 1986, and 1991 were obtained from the City of Flint Property Assessor's Office, and reviewed.

1965 Aerial Photograph

Across Glenwood Avenue to the south of the building are residential areas. To the east, north, and west are the manufacturing buildings of the facility. Railroad tracks run along the north and west borders of the Property. To the north across the tracks is what appears to be a storage lot. Approximately 150 feet beyond the storage lot lies the Flint River.

1971 Aerial Photograph

The street to the south of the building was open to traffic. Beyond the street are residential homes. Storage of 55-gallon drums can be seen in the north storage area and in the area adjacent to the railroad tracks and west of the existing building. Approximately 100 feet to the north of the building are three Aboveground Storage Tanks (AST), with a volume approximately in the range of 5,000 to 10,000-gallons. A network of railroad lines and spurs extend along the north edge of the building and curve towards the southwest at the western end of the building. Stevenson Street parallels the eastern side of the building. Beyond Stevenson street is a large parking lot.

1977 Aerial Photograph

The street to the south of the building has been diverted to the south, thereby providing space for a triangular shaped asphalt parking lot. The west side of the building has an addition which covers approximately 20,000 square feet. Storage of 55- gallon drums is apparent in the north storage area.

1986 Aerial Photograph

The north storage area has a roof extending to the north of the building. Storage of 55-gallon drums is apparent on the north area lot. Two ASTs are visible approximately 100 feet to the north of the Property. Based on a review of the aerial photograph and interviews with Property personnel, these ASTs do not meet the definition of a PAOC.

1991 Aerial Photograph

The Property appears unchanged as compared to the 1986 aerial photograph. Two silos are visible approximately 100 feet to the north of the Property. In general, the areas adjacent to the Property are overlain with asphalt and/or concrete.

2.9 Site Features and Historical Facility Operations

At the time of the first walk through, the GM, AC Rochester Division, Flint West Facility, Building No. 9 was an 80,897-square feet manufacturing plant. The facility contained several groups of operating assembly line type machinery systems. These systems were all grouped into areas associated with the lubricating, quench, or cutting oils required for the operation of the machines (Figure 4). Throughout the machinery areas, the floors were saturated with petroleum products and other oils utilized in the operations of the facility. Various sumps existed beneath the hot forge presses for oil collection and machinery repair.

A quench oil system was located in the blast furnace area for emergency quenching of oils. This fire suppressant system consisted of a sump and a quench oil storage tank located beneath the sump.

An electrical sub-station room was located at the northwest perimeter of the building. This was the only transformer location on site. The transformers contain polychlorinated biphenyls (PCB) oils as defined in 40 CFR 761 as PCB transformers. PCB transformers are discussed in detail in Section 3.2.4.1. Capacitors also existed throughout the building and are discussed in detail in Section 3.2.4.2.

Throughout the building, steel lined trenches directed soluble cutting oil and a petroleum based lubricating oil to sumps (Photograph # 9, Appendix B). The trenches varied in depth from 4 feet to approximately 17 feet below grade. These sumps were designed to collect and recycle used cutting fluids and lubricating oils. Figure 4 shows the layout of the trenches and sumps in the building. The trenches are discussed in detail in Section 3.1.7.2 and 3.1.8.2.

An additional system of steel lined trenches was present throughout the plant. These trenches collected and transported water and liquids that were released to the plant floor from the main sump located on the eastern inside of the building to the wastewater treatment plant located adjacent to Building 5 (Figure 2). The collected fluids are treated and discharged to the City of Flint sewer system. This trench system extended into the waste storage area on the north side of the Property where stormwater runoff was collected and directed to the wastewater treatment system. Figure 5 shows the layout of these trenches and they are discussed in Section 3.1.11.3.

Chemicals and supplies were transferred from a central shipping and storage location in the Flint West facility to Building No. 9 and were stored inside the loading dock on the southwestern part of the building as shown in Figure 3. These materials were then transported to the appropriate area for use. Non-hazardous wastes that were generated from the plant processes (i.e. waste oil, metal chips, and grinding swarf) did not enter the wastewater treatment system. They were drummed and placed at the north side loading area, shown in Figure 3, and then transported to the storage shed at "17 yard," which is located between Buildings 13 and 17. Waste material was stored there (for less than 90 days) prior to off-site shipment to a recycling, disposal, or destruction facility. An oil crib (oil container storage), hydraulic oil AST, and oil AST were also located in the north side loading area as shown in Figure 3.

Electrical power, wastewater, steam, and compressed air pipelines entered and exited the facility from the northwest side of the building and were distributed throughout the building. These pipelines also connect to Plant No.38 through an underground tunnel located southeast of the Property.

The sump location for the wastewater pumping station was situated so that malfunctions of the wastewater pumping system would overflow into an adjacent stormwater sump, which ultimately discharges into the Flint River.

At the time of BBL's second walk through, the building was undergoing deactivation procedures. Operations had ceased and most of the equipment and machines had been removed. In 1995, The Best Group, Inc. was hired by GM to complete the environmental deactivation and demolition, and The Traverse Group was retained to perform oversight of these activities.

Deactivation and demolition included removal of asbestos containing materials, mercury containing lights and apparatuses, cleaning of sumps, tanks, floors, pits, and sewers, removal of wood block flooring, and containerizing hazardous and non-hazardous materials for disposal or recycling. Specific deactivation and demolition activities are discussed in Section 3.2.

3. Environmental Conditions

The following discussion of environmental conditions was derived from observations made and information collected and reviewed while performing this Phase I ESA. In addition, recommendations are provided regarding specific Property conditions that meet the definition of a PAOC, as defined in Section 1.1. Photographs documenting Property conditions at the time of the Property walk through are included in Appendix D.

This section is divided into three main parts: processes (Section 3.1); deactivation activities (Section 3.2); and general areas (Section 3.3).

Section 3.2 discusses deactivation and cleaning procedures. As a general note, deactivation cleaning included high pressure washing with a detergent solution. Wash water and rinsate were collected and directed to the IWWPTP at Flint West. Any further specific decontamination activities are discussed in each section, as appropriate¹.

3.1 Processes

This section includes discussion of the various manufacturing processes conducted at Building 9.

3.1.1 Forge Press Pits

The forge press pits were located on the northern side of the building, as shown in Figure 3. The pits were used to collect metal chips generated during operation of the presses. The pits are approximately eight feet deep and range from approximately three feet to six feet wide. These pits were connected to the oil sump which pumps the oil back to the forge presses for re-use.

During the June 1996 Property visit, the presses had been removed and the cleanup of the press pits had not yet begun, but decontamination was completed in 1996. The press pits were inspected on October 9, 1996, after decontamination and there was no visual evidence of release to the subsurface soils. The press pits have been filled with sand and capped with concrete as part of facility deactivation activities.

Because there is no known or documented release that would pose an unacceptable risk to human health and the environment, this area does not meet the definition of a PAOC.

3.1.2 Former Chrome Plating Area

Based on interviews with Property personnel, a chrome plating operation was conducted in the building from 1982 to 1991. The former location is shown in Figure 3. The MDNR uniform hazardous waste manifests obtained from plant personnel indicate that approximately 3,000 gallons of reportable quantity (RQ) hazardous waste, ORM-E NA9189 (EPA D007) was transported off-site each week. The records file search revealed that the chrome plating system was decontaminated by scrapping and pressure washing followed by dismantled between March 20, 1990 and October 13, 1991. Equipment and debris were placed in roll-off containers, while decontamination liquids and process wastes from the sumps were placed in drums. The clean-up and disposal of the plating area required 19 months to complete. Clean closure or clean verification samples were not collected for this area. Interviews with facility personnel indicated that the sumps appeared competent at the time of decontamination.

¹Reference to "proper disposal" of wash waters means that they were directed to the IWWPTP.

It was reported in a discharge notification form dated June 15, 1990, that approximately 1 pound of chromic acid waste leaked from a gondola onto the pavement and into a storm sewer catch basin. Samples were collected downgradient and upgradient of the spill in the storm sewer system and the results indicated some quantity did overflow the basin. Liquid waste was pumped from the basin into containers and transported off site for disposal. The release was followed by a limited investigation which did not detect chromium in soils at the outflow point.

Because there is no known or documented release at levels that would pose an unacceptable risk to human health or the environment, this area does not meet the definition of a PAOC.

3.1.3 Former Trichloroethylene Degreasing Unit and Sump

Trichloroethylene (TCE) was used as a vapor degreasing solvent in the former degreasing area which is shown in Figure 3. An internal GM memorandum stated that the TCE spill entered the wastewater treatment system and Property personnel notified the City of Flint. The wastewater treatment system was reportedly self contained. The sump was pumped out periodically and the waste was disposed of off site.

BBL did not locate information that indicated that the sump was clean closed, but during facility deactivation. The area was high pressure washed with an aqueous degreasing agent.

In a report documenting an UST removal and petroleum contaminated soils removal operation, low levels of TCE were reported in the groundwater 150 feet downgradient from Building 9. The TCE source is unknown. Due to the existence of TCE downgradient from known TCE operations and a documented release, BBL considers this area a potential source to groundwater, and is, therefore, considered a PAOC.

3.1.4 Quench Oil Systems

3.1.4.1 Quench Pits Dump Tank

Quench oil was used to cool steel valves as the valves exited the heat treating area (Figure 3). The sump system was used to manage the quench oil, but was not in operation during the walk through. No known releases from the sump were discovered by BBL. The integrity of the sump could not be evaluated because the sumps were full of aqueous and oil based liquids. During and after facility deactivation (discussed in Section 3.2) the sump was inspected and found to be intact with no evidence of cracks that would constitute a PAOC. Facility personnel indicated that during the course of operation of this system, no notable volumes of these oils were required to fill the system, and no substantial mass balance shortfalls occurred. Because there is no known or documented release at levels that could pose unacceptable risk to human health and the environment, this area does not meet the definition of a PAOC.

3.1.4.2 Fire Hazard Dump Tank

A 3,000 gallon steel dump tank existed below the sumps in a basement-like room in the northern central part of the building. The dump tank was used to contain quench oil solely for emergency purposes. In the event of a fire, quench oil would be pumped from the tank to suppress the fire. Since the tank was not buried but free standing within the room, it is not considered a UST and, therefore, is not registered.

During inspection, the tank was found to be intact and no leaks were noted. Since no known or documented releases at levels that would pose an unacceptable risk to human health or the environment, this area does not meet the definition of a PAOC.

3.1.5 Exhaust Forge Presses Area

The exhaust forge presses utilized a system of sumps below the presses to recycle lubricating oils. Prior to entering the presses, the parts were sprayed with oil. Some of the oil would drip back into the sumps. The sumps were inspected on October 9, 1996, and there was no visual evidence that a release to the environment had occurred, and no documented releases to the environment were discovered (Photograph # 10, Appendix B).

Because there is no known or documented release at levels potentially dangerous to human health and the environment, the sump does not meet the definition of a PAOC.

3.1.6 PCBs

PCBs may be present in transformers, capacitors, or in hydraulic fluids at GM plants. Typically they are not found or associated with other material or processes. This is consistent with findings at other buildings at Flint West.

3.1.6.1 Transformers

The electrical sub-station (pump power room) contained the only PCB transformers located at the Property. The transformers were labeled and the floor was sealed to contain possible spills or leaks and appeared competent. The room had two doors that open to stairs leading north onto a gravel area (Section 3.3.2.1). Oil puddles were observed on the floor at the base of the stairs leading into the power room (Photograph # 16, Appendix B). The power room was approximately three feet below average plant grade. Plant personnel explained that "minimal amounts" of oil occasionally overflowed from the sumps associated with the exhaust forge presses area into the pervious gravel area.

On the inside of the southern wall, at and below the normal plant grade, oil was observed seeping through cracks in the wall (Photograph #s 11 and 12, Appendix B). The seepage did not appear to be associated with the transformers, but rather with the grinding/ welding oil sumps. Because there is known evidence of oil below the floor to the south of the pump power room (where the welding systems were located), this area should be investigated further. By the time of the property walk through on October 9, 1996, the cracks in the wall had been patched and painted.

The visual evidence of a release in this area demonstrates that this area meets the definition of a PAOC, and will be discussed further in Section 5.

3.1.6.2 Capacitors

According to review of records and interviews, there were no PCB-containing capacitors at the Property.

3.1.6.3 Hydraulic Fluids

Hydraulic fluids used at the Property did not contain PCBs, according to files reviewed and interviews.

3.1.7 Grinding/Forming Areas

3.1.7.1 Equipment

Grinding equipment was located in the southern and central part of the former building, as shown in Figure 3. Equipment included mechanical grinders that used oil as a lubricant in the grinding process.

3.1.7.2 Oil Sump and Trench System

The oil based trench system distributed, collected, and recycled grinding and welding oils during the operation of the facility. The trench system appeared to be in good condition, although the integrity of the trenches and sumps could not be inspected in June 1996 because the systems were in use and the sumps had oils in them. The oil observed seeping through cracks in a wall of the electrical sub-station could be from leakage from this system. Due to the nature of the system, volume controls were not utilized to monitor potential leakage of the systems to the environment.

An inspection conducted by BBL personnel on October 9, 1996, revealed that the concrete trenches were lined with steel. Due to the steel lining, integrity of the concrete in the trenches could not be determined. Some of the trenches contained water and debris and the overall integrity of trenches could not be determined. The steel appeared sound, but there were gaps between several of the welded joints. BBL personnel also noted that at land surface there was approximately a one-inch gap between the steel lining and the concrete trench, i.e. the steel is not flush against the side of the concrete trench. Because there is no known or documented release at levels potentially dangerous to human health and the environment, this area does not meet the definition of a PAOC.

Because there is no known or documented release that would pose an unacceptable risk to human health and the environment, this area does not meet the definition of a PAOC.

3.1.8 Welding, Forging and Heat Treating Areas

3.1.8.1 Equipment

Equipment was located in the northern part of the former building, as shown in Figure 3. This process utilized a soluble oil as a lubricant.

3.1.8.2 Sump and Trench System

The soluble oil trench system distributed, collected, and recycled lubricants during the operation of the facility. The trench system appeared in good condition, although the integrity of the trenches and sumps could not be inspected because the systems were in use in June 1996 and contained liquid. Due to the nature of the system, volume controls were not utilized to monitor potential leakage of the systems to the environment.

An inspection conducted by BBL personnel on October 9, 1996, revealed that the concrete beneath the steel trenches were lined with steel. Due to the steel lining, the integrity of the concrete in the trenches could not be determined. Some of the trenches contained water and debris and the overall integrity of trenches could not be determined. The steel appeared sound, but there were gaps between several of the welded joints. At land surface there was approximately a one-inch gap between the steel lining and the concrete trench (i.e., the steel is not flush against the side of the concrete trench).

Because there is no known or documented release at levels that would pose an unacceptable risk to human health and the environment, this area does not meet the definition of a PAOC.

3.1.9 Tumblers

The tumblers were located at the central-northern part of the former building and were used to mechanically remove metal burs from metal parts. The metal dust that was generated by this process was transferred to the grinding swarf disposal system. The tumbler room, as shown in Figure 3, had a concrete floor with expansion joints that appeared in good condition at the time of the walk through. The tumblers have been removed from the room and the room was demolished along with the rest of the building.

Because there is no known or documented release at levels that would pose an unacceptable risk to human health and the environment, this area does not meet the definition of a PAOC.

3.1.10 Tanks

3.1.10.1 Underground Storage Tanks (USTs)

In 1985 a 6,000-gallon hydraulic oil UST was removed and replaced with the tank discussed in the next section. The UST was located in approximately the same location as the existing tank. Prior to 1986, registration of the tank was not required, so there is no written documentation on the UST excavation. Discussions with facility personnel indicated that the excavation was completed successfully and that there were no releases to the environment observed during tank closure.

Because there is no known or documented release at levels that would pose an unacceptable risk to human health and the environment, this area does not meet the definition of a PAOC.

3.1.10.2 6,000-Gallon Hydraulic Oil Aboveground Storage Tanks (ASTs)

A 6,000 - gallon hydraulic oil AST was located in the north storage area within a concrete secondary containment system and adjacent to the north wall of Building 9. The hydraulic oil AST was periodically filled by tanker truck. The hydraulic oil was pumped through aboveground pipes into the building, where personnel dispensed the oil into drums or containers for use throughout the forging, grinding, and forming areas. The tank was properly labeled and did not require registration with MDEQ because the tank did not contain more than 1 percent of a critical compound as defined in MDNR's Critical Materials Register dated January 1, 1994. Based on visual inspections by BBL, the secondary containment system appeared competent. In September 1996, the system was cleaned by pressure washing with liquid detergent and removed from the Property. According to plant personnel, no evidence of spillage was noted during the removal of the AST system.

Because there is no known or documented releases at levels that would pose an unacceptable risk to human health and the environment, this area does not meet the definition of a PAOC.

6,000-Gallon Lubricating Oil AST

A 6,000-gallon lubricating oil AST is located within a secondary containment system along the north wall of the building. Oil is pumped to the forge presses through an overhead piping system. The tank was properly labeled and did not require registration with the MDEQ because the tank did not contain more than 1 percent of a critical compound as defined in MDNR's Critical Materials Register dated January 1, 1994. Based on visual inspections

by BBL in 1994, the secondary containment system was in good condition. In September 1996, the system was cleaned by pressure washing with liquid detergent and removed from the Property. According to plant personnel, no evidence of spillage was noted during the removal of the AST system.

Because there is no known or documented release at levels that would pose an unacceptable risk to human health and the environment, this area does not meet the definition of a PAOC.

3.1.11 Sewer Lines

3.1.11.1 Storm Sewers

Figure 5 shows the locations of storm sewer lines at the Property. The storm sewers direct stormwater to outfalls located on the Flint River. A portion of stormwater collected in the North Storage Area is piped to the industrial wastewater system, as discussed in Section 3.1.11.5.

3.1.11.2 Sanitary Sewers

Sanitary sewers beneath the building collect sanitary wastewater through dedicated lines and direct it to the City of Flint sanitary sewer system.

Because there is no known or documented release at levels that would pose an unacceptable risk to human health and the environment, this area does not meet the definition of a PAOC.

3.1.11.3 Industrial Process Lines

Figure 5 shows the layout for industrial wastewater process lines beneath the building. The lines directs industrial wastewater to the to the main sump located at the northwestern end of the building. From the main sump, industrial wastewater is pumped to the facility-wide industrial WWTP for pre-treatment and processing prior to discharge to the City of Flint sanitary sewer system.

3.1.11.4 Stormwater Discharge Point Located Adjacent to Industrial Wastewater Sump in the Northeast Corner of the Building

A documented release to the stormwater system occurred on August 19, 1991. Oil was discharged to the City of Flint storm sewer system that created a 20-foot wide sheen on the river 0.5 miles downstream of the outfall. Apparently, the wastewater treatment system sump pump was not adequate to handle the wastewater flow rate (presumably due to rainwater). Samples of the outfall water were collected and laboratory analyses did not indicate elevated levels of contaminants.

The pipe leading to the stormwater system from the process wastewater sump was plugged in 1995. The pump was decontaminated and removed. The sump was pressure cleaned, and the fluids were pumped out and disposed of off site. The sump was then backfilled and capped with cement. Since the storm sewer system channels stormwater to the River, and therefore prevents contact of potential contaminants with the environment, this area does not meet the definition of a PAOC.

3.1.11.5 Stormwater Pump and Sump located in the North Storage Area

This pump and sump system was designed to collect overland runoff in the north storage area and pump this water to the pollution wastewater system. During BBL's walk through in 1994, rainwater on the surface exhibited a petroleum sheen, indicating the need to treat overland runoff.

On May 14, 1993, a MDNR report of oil, salt, or polluting material losses form was filed. The form indicted that the stormwater pump in the north storage area became uncoupled and approximately 50-100 gallons of oil overflowed the trench at the northeast corner of the area and flowed onto Stevenson Street. The form indicated the oil also flowed onto the railroad tracks and ran east along the tracks (along natural drainage paths to the north and east) a distance of 75 to 100 feet.

During BBL's property walk through in 1993, it was discovered that the pump in the sump failed and a small amount of oil was noticed overflowing onto Stevenson Street. During BBL's walkthrough in October 9, 1996, no evidence of a release was observed or noted.

Because oil was released to a pervious (gravel) area along the railroad tracks, there exists the potential for oil to have permeated to the underlying soil and groundwater. The release of substances at levels that could pose an unacceptable risk to human health and the environment may have occurred. This area meets the definition of a PAOC, and is discussed further in Section 5.

3.1.12 Pits, Ponds, and Lagoons

There are no pits, ponds, or lagoons associated with the Property. There is a basement-like structure that contained the fire hazard dump tank (Section 3.1.4.2) that is referred to as a pit by the demolition contractor. Section 3.1.4.2 discusses this area.

3.1.13 Groundwater Wells

On August 3, 1937, an 8-inch diameter drinking water well was installed to a depth of 218 feet below land surface (Figure 3). Records from MDEQ indicated that the well was constructed with steel casing to a depth of 52-feet bls. This well has not been used as a source of water since the 1950's. On November 13, 1991, a black oily film was observed on the pump intake pipe. Subsequently, 11.5 feet of unknown petroleum product was measured floating on the water table. The source of the product is not known, but vandalism was suspected. The product was not in contact with the surrounding geology because of the solid casing. The petroleum product was pumped out of the well and the well was purged. Subsequent sampling and analysis indicates that water in this well was below detection limits for EPA Method 8260 (volatile organics) and 8270 (semi-volatile organics) compounds. A well closure report in the GM files indicated that the well was grouted with 85 bags of neat cement on July 7, 1992 and was properly closed.

The documentation indicates a release may have occurred into this well; however, analytical data indicates that VOC or SVOC impacts were not present in the water contained in the well. Therefore, since there were no documented releases at levels that would pose an unacceptable risk to human health and the environment and this well has been closed, this area does not meet the definition of a PAOC.

3.1.14 Air Pollution Treatment Systems

The property maintained air pollution permits for various operations at the building. Eight air permits were formerly required for plant operations at Building 9, including:

<u>Permit No.</u>	<u>Equipment Description</u>
30-78A	Shot Blast Dust Collector
358-90	Inlet Forge Wet Scrubber
452-75B	First Stem Collector
454-75C	Exhaust Forge Wet Scrubber
455-75A	Tip Harden Mist Collector
456-75A	Seat Gr Mist Collector
457-75A	Finish Stem Gr Mist Collector
785-77A	Multiform Mist Collector

Permits were required for emissions from collectors of (1) oil mists from coolants applied during grinding processes, (2) smoke and fumes generated during quenching, (3) smoke and mist generated during application of lubricants, and (4) scale and dust generated from steel shot directed at rough valve forgings during tumbling action. Information from facility files indicates that all permits were in order and GM was in compliance with all applicable regulations. There were no environmental issues identified relating to this process that would constitute PAOCs at the Site.

3.1.15 Heat Treating

The facility heat treated metal components such as valves to temper the metal. This activity was conducted in the central to northeastern part of the facility, as shown in Figure 3. The metal was heated to various temperatures depending on the component and application. There were no chemical releases as environmental issues identified in this area, so this area does not meet the definition of a PAOC.

3.1.16 Waste Management Procedures

The general procedure for waste management at the Property was to containerize solid waste in rolloffs or DOT-approved 55-gallon drums upon generation. Waste was then temporarily stored (less than 90 days) at the north storage area until it was either transported offsite by USPCI for proper disposal or transferred to the storage shed at "17 yard," which is located between Buildings 13 and 17. Waste materials was stored there (for less than 90 days) prior to offsite shipment to a recycling, disposal, or destruction facility. Wastes appeared to be characterized and managed appropriately. Accordingly, there were no environmental issues identified related to this process.

3.2 Deactivation Activities

In preparation for facility deactivation, an assessment of the Building 9 was conducted to determine what type of deactivation and decontamination activities were required. The objective of this assessment process was to evaluate the building structures and equipment remaining in the facility for the level of cleaning required prior to their ultimate disposal.

In 1995, the Best Group, Inc. was hired by GM to complete the environmental deactivation and demolition of Building 9, and The Traverse Group was retained to oversee these activities. Results of the various closure activities are summarized and provided in this section.

3.2.1 Wooden/Composite Floor Blocks

Wooden and resin composite floor blocks were located along the walkways throughout the Property. During the Property walk through the integrity of the floor blocks appeared sound. Since the wooden floor blocks cover concrete, the integrity of the floor beneath the blocks was addressed during the facility deactivation process when the blocks were removed and disposed. Wooden block flooring was determined to be non-hazardous, therefore; the wood block floors were removed and disposed of at the USPCI Echo Mountain Facility.

3.2.2 Asbestos

Asbestos was found in the following:

- Tar paper wrap used to cover elbows;
- Pipe installation in the northwest corner of the building where the lines feeding Building 38 branch off the lines feeding Building 9;
- Thermal system insulation in scattered locations throughout the plant; and
- Roof membrane on both the new and old sections of the plant.

Nonfriable ACM was removed and disposed of at Venice Park. Friable asbestos-containing material was disposed of at the USPCI Echo Mountain Facility. Since the building has been demolished and all debris has been removed, ACM is not an issue and this does not meet the definition of a PAOC.

3.2.3 Lead Paint

Lead abatement was completed on Building 9 columns. The work was completed by MPC Environmental, a subcontractor to The Best Group on February 21, 1997. Since the building has been demolished and all debris has been removed, lead paint is not an issue at this Property and this does not meet the definition of a PAOC.

3.2.4 PCBs

3.2.4.1 Transformers

Transformers containing PCB oil were drained and cleaned by S.D. Myers, a subcontractor to The Best Group. Both oil and the drained transformers have been removed from the site. PCB oil went to CWM Chem Services, while transformers formerly containing PCB oil were disposed by S.D. Myers. This work was completed on December 10, 1996.

3.2.4.2 Capacitors

PCB-containing capacitors had formerly been used in the Plant. Under a facility-wide program, GM gradually replaced them with non-PCB capacitors as equipment needed repair or as finances were allotted to replace them. The last PCB-containing capacitors were removed from Building 9 prior to 1995. The PCBs were drained and incinerated, and the capacitors were shipped for disposal by Aptus in Coffeysville, Kansas. No PCB-containing transformers were found in Building 9 during facility deactivation.

3.2.5 Hazardous and Universal Waste

Universal waste included fluorescent light tubes disposed at Greenlites Recycling.

Wastes were accumulated in designated areas during deactivation and the containers were clearly marked with proper identification. When the accumulation quantity was reached, containers were transported to the north dock storage area for shipment offsite, or to the "17 yard" storage shed. (See Section 2.9 for description.) Any unused product encountered during facility deactivation was either managed in the same manner or sent back to the supplier. Waste stream profiles were established for the wastes and scheduled for removal. All waste accumulation areas were reported to have been managed in accordance with 40 CFR 262.34. The only hazardous wastes generated during deactivation were PCB transformer oil, reported to be disposed at CWM Chem Services, and transformers that formerly contained PCB oil were reported to be disposed at S.D. Myers.

3.2.5.1 Disposal of Drums

During deactivation, wastes were accumulated in designated areas within the plant and the containers were clearly marked with proper identification. When the accumulation quantity was reached (i.e., drum or container was full), containers were transported to the north dock storage area for shipment offsite, or to the "17 yard" storage shed. (See Section 2.9 for description.) Any unused product encountered during facility deactivation was either managed in the same manner or sent back to the supplier. Waste stream profiles were established for the wastes and scheduled for removal. All waste accumulation areas were reported to have been managed in accordance with 40 CFR 262.34.

3.2.5.2 Waste Storage Area

The North Dock Area was used to temporarily store waste when the facility was operating. The area was cleaned as discussed in Section 3.2.6.

3.2.6 Pits, Sumps and Trenches

Pits, trenches and sumps were cleaned during deactivation by high pressure wash with an aqueous degreasing agent. Sampling was performed in several of the pits, trenches, and sumps that contained oil prior to cleaning. The oil was then removed, and the units were cleaned as described. Wash waters were collected and transferred to the IWWPTP.

3.2.7 Hydraulic Equipment

All machinery remaining within the buildings was inspected for PCB containing capacitors and mercury switches. Any oil within the machines was sampled and analyzed for PCBs. PCBs were not detected in any machinery at Building 9.

3.2.7.1 Elevators

There were no hydraulic elevators at Building 9.

3.2.7.2 Hoists and Lifts

There were no hydraulic hoists or lifts at Building 9.

3.2.8 Floors and Interior Surfaces

Oily floors were high pressure washed using an aqueous degreasing agent. Wash and rinse waters were transferred to the IWWPTP. Wooden/composite floor blocks are discussed in Section 3.2.1.

3.2.9 CFC - Containing Equipment

CFC-containing equipment present at the Building 9, such as air conditioners, drinking fountains, and water coolers, were located and removed during the deactivation activities by subcontractors to The Best Group. CFCs were salvaged by removing the material from the unit for future reuse. CFCs are no longer at the Property.

3.2.10 Cooling Towers

There were no cooling towers associated with the Property.

3.2.11 Batteries

All batteries encountered during the deactivation inspections were divided by battery type. Lead acid batteries were placed on pallets, wrapped, and removed by GM for reclamation. Nickel Cadmium batteries were placed in 55-gallon drums and shipped to Chemical Waste Management for reclamation or removed by GM environmental staff. Battery charging areas identified during the inspections were cleaned during facility deactivation with a high pressure wash with a liquid detergent. Wash water and rinsate were collected and properly disposed.

3.2.12 Sewer Systems

Any oil, greases, solids, or debris was removed from accessible sanitary sewers, manholes, and catch basins and properly disposed. The units were then cleaned using pressure jet washing system and visually inspected to insure all residues had been removed.

3.2.13 Tank Systems

3.2.13.1 UST

There were no USTs associated with Building 9.

3.2.13.2 AST

The ASTs, including the 3,000 gallon fire hazard quench oil dump tank, were drained of oil and high pressure washed. The tanks were scrapped along with other steel from the facility during demolition activities by a metal recycling facility.

3.2.14 Fire Protection Trench Excavation

On November 26, 1996, during trench excavation activities for a fire protection system in Building 9, an oil-like substance was observed seeping into the trench in the vicinity of Column B-9, which is shown in Figure 3. This event was reported to BBL by personnel conducting the facility deactivation activities. This visual evidence of an oil-like substance seeping into the excavated trench indicates that this area meets the definition of a PAOC, and is discussed further in Section 5.

3.3 General Areas

3.3.1 Floors

Section 3.2.1 discussed the wood block floor at the building. Other floors were typical of industrial buildings; concrete, with wear indication and light staining that would be removed during facility decontamination.

3.3.2 Exterior Surfaces

3.3.2.1 Northwest Side of Building Gravel Area

The stairs leading down to the gravel area were heavily stained with oils and rain water puddles on the stairs exhibited a petroleum sheen (Photograph # 16, Appendix B). Another set of stairs leading from the power room also exhibited oil staining. Interviews with Property personnel indicated that the oil was probably dragged out by employee traffic. BBL observed oil surface staining throughout the area. It was noted that the sumps located in the exhaust forge presses area had overflowed in the past. In June 1996, on-site interviews indicated that GM personnel had excavated the top 6 to 12 inches of stained gravel. This gravel was disposed by USPCI. Paperwork or manifests could not be located.

Due to the heavy petroleum staining and sheen on the stairs, BBL considers the area with the pervious surface to meet the definition of a PAOC. This area will be referred to as PAOC #3.

3.3.3 Railroad Tracks and Spurs

Railroad tracks exist on the north-northwest side of the Property. The tracks are used exclusively for transporting manufacturing material to and from the site. Because there is no known or documented release at levels that would pose an unacceptable risk to human health and the environment, this area does not meet the definition of a PAOC.

3.3.3.1 Oil Staining

Minor oil staining typical of industrial railroad track yards was observed on the surface of rocks in the rock bed. Since there were no observed or documented releases at levels that would pose an unacceptable risk to human health and the environment, this area does not meet the definition of a PAOC.

3.3.3.2 Railroad Ties

Railroad ties used to support track were typical creosote-treated lumber. Since the railroad tracks are on the north side of the Property fence, they run through and are used for the entire Flint West site, and they are downgradient from the Property, environmental impacts from the ties to the Property are not anticipated. Because there is no known or documented release at levels that would pose an unacceptable risk to human health and the environment, this area does not meet the definition of a PAOC.

4. Record Review

4.1 ERIIS Database Review

BBL retained Environmental Risk Information and Imaging Services (ERIIS) to perform an environmental records database search of federal, state, and county records in accordance with ASTM E 1527-94. An ERIIS report was originally obtained in 1993 and a new report was ordered for this Phase I ESA. The 1996 ERIIS report was ordered because it was unknown if the 1993 report was applicable current investigation. A full copy of the ERIIS review of federal and state databases is included as Appendix B. The review of federal and state records identified five sites within a one-mile radius of the subject Property that may have been impacted by hazardous materials or petroleum products, or that store, use, or manufacture such materials as follows (some properties appear on multiple lists):

Database (miles)	Radius of Search (miles)	Properties Within Radius			Total Listings	
		0 to 1/4 Mile	1/4 to 1/2 Mile	1/2 to 1 Mile		
National Priorities List (NPL)	1	0	0	0	0	
RCRA Information System (RCRIS-TS) Facilities	1	0	0	0	0	
No Further Remedial Action Planned Properties (NFRAP)	0.5	0	1	NA	1	
CERCLA Information System (CERCLIS)	0.5	0	0	NA	0	
RCRIS Large Quantity Generators (RCRIS-LG)	0.25	0	NA	NA	0	
RCRIS Small Quantity Generators (RCRIS-SG)	0.25	1	NA	NA	1	
Emergency Response Notification System (ERNS)	0.5	0	NA	NA	0	
Michigan Environmental Contamination List (HWS)	1	0	1	1	2	
Michigan Leaking Underground Storage Tank List (LRST)	0.5	0	5	NA	5	
Michigan Solid Waste Facilities (SWF)	0.5	0	0	NA	0	
Michigan Facility and Tank Data Report (RST)	0.25	1	NA	NA	1	
NA = not within search radius					Total Listings	10 ¹

¹ - These ten listings represent only eight distinct properties.

The Property was not identified in any of the environmental databases. The following sub-sections are a brief summary of the information provided in the above table. Further details about the subject Property, its status, and the surrounding properties within the search radius are contained in the ERIIS report included as Appendix B. After careful review of the ERIIS report and available Federal, State, and Facility records, none of the properties identified above have conditions that would constitute a PAOC at the Property.

4.1.1 Summary of United States Environmental Protection Agency Databases

National Priorities List

The National Priorities List (NPL) is a listing of facilities and/or locations where environmental contamination has been confirmed. The NPL was devised as a method for the EPA to prioritize these properties for the purpose of taking remedial action as funded by the Hazardous Waste Substances Superfund program, that was initially

established under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), and reinstated under the Superfund Amendments and Reauthorization Act of 1986 (SARA). No NPL properties were listed within a one-mile radius of the Property, nor is the Property listed.

Resource Conservation and Recovery Information System Treatment, Storage, and Disposal

The Resource Conservation and Recovery Information System Treatment Storage, and Disposal (RCRIS-TS) list identifies those facilities or locations that have notified the EPA of their activities relative to the handling of hazardous waste, as well as treatment, storage, and disposal facilities. The appearance of a property on this list does not necessarily indicate environmental problems on the property, but rather that the property is (or was) engaged in hazardous waste handling activities and, therefore, may have the potential to cause environmental degradation if hazardous wastes have been mishandled or otherwise released in an uncontrolled manner. Information pertaining to the status of facilities tracked by the RCRA Administrative Action Tracking System (RAATS, March 3, 1995) is included in the RCRIS-TS report.

No RCRIS-TS properties were listed within a one-mile radius of the Property, nor is the Property listed.

No Further Remedial Action Planned Properties

The No Further Remedial Action Planned (NFRAP) Report contains information pertaining to properties which have been removed from the Federal EPA's CERCLIS Database. NFRAP properties may be properties where, following an initial investigation, no contamination was found, contamination was removed quickly without need for the property to be placed on the NPL, or the contamination was not serious enough to require federal superfund action or NPL consideration.

Flint West was listed on the NFRAP database. According to the database review, a preliminary site assessment was conducted on April 12, 1991. This site does not constitute a PAOC at the Property.

No other NFRAP sites were listed in the database review within a one-half-mile radius of the Property.

Comprehensive Environmental Response, Compensation and Liability Information System List

The Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) list contains facilities and/or locations that the USEPA or state environmental agency is investigating to determine if an existing or threatened release of hazardous substances is present. These properties may also occur on the NPL list as slated for EPA-funded response action, or they may be under state or federal enforcement action for cleanup by the responsible parties.

No CERCLIS properties were listed within a one-half-mile radius of the Property, nor is the property listed.

Resource Conservation and Recovery Information System - Large Quantity Generators

The Resources Conservation and Recovery Information System - Large Quantity Generators (RCRIS-LG) report contains information pertaining to facilities that generate more than 1,000 kilograms (kg) of hazardous waste per month or meet other applicable requirements of the RCRA. Information pertaining to the status of facilities tracked by the RCRA Administrative Action Tracking System (RAATS, March 3, 1995) is included in the RCRIS-LG report.

No RCRIS-LG facilities were reported within a one-quarter-mile radius of the Property, nor is the Property listed.

Resource Conservation and Recovery Information System - Small Quantity Generators

The Resource Conservation and Recovery Information System - Small Quantity Generators (RCRIS-SG) report contains information pertaining to facilities that either generate between 100 kg and 1,000 kg of hazardous waste per month or meet other applicable requirements of the RCRA. Information pertaining to the status of facilities tracked by the RCRA Administrative Action Tracking System (RAATS, March, 3, 1995) is included in the RCRIS-SG report.

The Cadillac Flint Tool and Die site located at 425 Stevenson Street located approximately 0.2 miles northwest of the Property was listed as a RCRIS-SG facility. This site generated the following hazardous wastes: D001, F002, F003, and F004 type wastes. These waste codes are described in detail in the *EPA Hazardous Waste Reference Guide* included in the ERIIS report. Management of hazardous waste alone at a nearby property does not constitute a PAOC at the Property and no other records reviewed indicated that this site would be a PAOC at the Building 9 property.

No other RCRIS-SG properties were reported within a one-quarter-mile radius of the Property, nor is the Property listed.

Emergency Response Notification System

The Emergency Response Notification System (ERNS) is a national computer database that is used to store information concerning the sudden and/or accidental release of hazardous substances, including petroleum, into the environment. The ERNS reporting system contains preliminary information on specific releases, including the spill location, the substance released, and the responsible party. The information in the ERNS pertains only to those releases that occurred between January 1, 1996, and August 22, 1996.

No ERNS locations were identified at the Property.

4.1.2 Summary of Michigan Department of Environmental Quality Databases

Michigan Environmental Contamination List (Act 307)

The Michigan Environmental Contamination List (HWS) contains summary information pertaining to properties deemed hazardous by the MDEQ. Established under Michigan Environmental Response Act 307, the environmental contamination list is equivalent to the state hazardous waste properties list referenced in ASTM E 1527.94.

Flint West was listed on the HWS list. The ERIIS report stated that benzene, toluene, ethylene, and xylene (BTEX) constituents were released from petroleum bulk storage areas. These areas are discussed in the following section as the five leaking USTs identified in the Michigan Leaking Underground Storage Tank List section. These facilities do not constitute a PAOC at the Property, because groundwater flow from this area would not be expected to reach the Property.

The Oil Chem, Inc. Facility located at 711 12th Street located approximately 0.95 miles southeast of the Property is also on the HWS list. The ERIIS report stated that BTEX constituents were released from petroleum bulk storage

areas. This site does not constitute a PAOC at the Property, because groundwater flow from this area would not be expected to reach the Property.

No other HWS properties were reported within a one-mile radius of the Property.

Michigan Leaking Underground Storage Tank List

The Michigan Leaking Underground Storage Tank (LRST) Report is a comprehensive list of all reported leaking above ground and underground storage tanks located within the State of Michigan. ERIIS' Leaking Underground Storage Tank (LUST) report consists of the listings maintained by the MDEQ LUST Section and the Michigan Department of State Police (Fire Marshal Division).

Five LRST sites were located within a one-half-mile radius of the Property. The properties listed are: Container Specialities, Inc located at 607 W. 2nd Street, approximately 0.3 miles northwest of the Property; Total Petroleum #2606 located at 1330 W. Court Street, approximately 0.35 miles southeast of the Property; Rupp's Marathon Service located at 527 N. Grand Traverse Street, approximately 0.48 miles northeast of the Property; 1031GK located at 502 W. 3rd Avenue, approximately 0.49 miles northeast of the Property, and Flint West. Based on their geographic relationship to the Property, and the hydrogeologic nature of the subsurface, these sites do not constitute PAOCs at the Property.

No other LRST properties were listed within a one-half-mile radius of the Property, nor at the Property.

Michigan Solid Waste Facilities List

The Michigan Solid Waste Facilities (SWF) List is a comprehensive listing of all active and inactive solid waste landfills and processing facilities within the State of Michigan.

No SWF properties were identified within a one-half-mile radius of the Property, nor at the property.

Michigan Facility and Tank Data Report

The Michigan Facility and Tank Data Report (RST) is a comprehensive listing of all registered underground storage tanks within the State of Michigan.

Dover & Company located at 651 Hall Street, approximately 0.24 miles southeast of the Property were listed on the RST. According to ERIIS, this site had one 1,000-gallon steel UST that has been removed. This site does not constitute a PAOC at the Property, because there are no documented release from the former UST, and its proximity with respect to groundwater transport would not be expected to move onto the Property.

No other UST property was identified within a one-quarter-mile radius of the Property.

4.1.3 Unplottable Sites

In addition to the above listed properties, the ERIIS database search also identified 7 "unplottable sites". Due to the limitations of the ERIIS database search, the locations of these properties could not be accurately determined. BBL personnel reviewed the street addresses and determined that none of these "unplottable sites" are located within one mile of the Facility. Therefore, it is unlikely that these properties have conditions that would constitute a PAOC at the Property.

4.2 Sanborn Fire Insurance Maps

The ERIIS collection of historical Sanborn Fire Insurance Maps was researched. Sanborn Fire Insurance Maps for the Property were reviewed for the following years: 1886, 1892, 1898, 1902, 1909, 1914, 1916, 1920, 1928, 1950, and 1970.

The Sanborn map for 1886 indicates that the Property was vacant. The Flint Wagon Works was located adjacent to the Property. The Sanborn map for 1892 indicates that the J.L. Wilcox Fruit Evaporator & Jelly Works was located on the approximate location of the Property. The F.R. Lewis Straw Board Factory, which operated as a paper mill, was located to the south of the Property across the Flint River. The Sanborn map for 1898 was similar to the 1892 map, there were no noticeable changes to the Property or its surroundings. The maps supplied from ERIIS for 1902 to 1914 do not show the Property location. The 1916 Sanborn map shows a building for the Library of Congress Map Division located on the land that would become the Property. The 1920 Sanborn map shows no noticeable changes when compared to the 1916 map. The 1928 Sanborn show the location of the Property with what appears to be plots of land designated as single-family homes and is referred to as the "McFahlans Addition to West Flint."

The 1950 Sanborn map shows the Property for the first time. Building 9 is shown as a single building constructed of steel frame with a concrete floor covered with wooden block. The Property is shown on the map as Factory Building Plant No. 9. A smaller building labeled for office personnel, is also present on the Property and is located just west of the main plant building.

Sanborn Maps from 1970 show no major changes at the Property. In general, the Sanborn Maps indicate that properties to the immediate south and east of the Property have been developed industrially by the General Motors Corporation since the 1920s. In addition, these maps indicate that the Property and surrounding properties have been used for industrial and commercial activities since the 1890s. Sanborn Maps reviewed indicate that residential property development has occurred north of 3rd Avenue and south of the Grand Trunk Railroad. The review of Sanborn Maps did not reveal any previous structures or processes that constitute a PAOC at the Property at the present time.

4.3 Freedom of Information Act Review

4.3.1 MDEQ Files

BBL personnel visited the MDEQ to review files available under the Michigan Freedom of Information Act, P.A. 442 of 1976.

4.3.1.1 Underground Storage Tank Division (USTD)

Files were reviewed from the USTD. This review did not reveal any PAOCs at the Property beyond areas discussed in this report.

4.3.1.2 Environmental Response Division (ERD)

Files were reviewed from the ERD. This review did not reveal any PAOCs at the Property beyond areas discussed in this report.

4.3.1.3 Waste Management Division (WMD)

Files were reviewed from the WMD. This review did not reveal any PAOCs at the Property beyond areas discussed in this report.

4.3.1.4 Surface Water Division (SWD)

Files were reviewed from the SWD. This review did not reveal any PAOCs at the Property beyond areas discussed in this report.

4.3.2 Fire Marshall UST Files

Files were reviewed from the Fire Marshall UST. This review did not reveal any PAOCs at the Property beyond areas discussed in this report.

4.4 Title Search

Because of the quantity of historical files and information available concerning previous operations at the Property and Facility, a title search was not performed for this Phase I ESA.

4.5 Site Environmental Files

GM site environmental files were reviewed to identify any information that would indicate a release at levels that would pose an unacceptable risk to human health or the environment. This section is organized based on files. The file review was conducted during the initial visit to the site on June 19 and 20, 1996.

4.5.1 Spill Reports

Spill reports file was reviewed. Spill reports found during review of facility files included accounts of a chromic acid spill in 1990, a spill of TCE from the degreasing unit, releases of oily material to the storm water system which discharges to the Flint River, and overflow of grinding oil onto Stevenson St. and the ground along the railroad tracks. Synopsis of the reports are as follows:

On June 12, 1990, a gondola containing chromic acid waste (sludge, pipes, rags, etc.) leaked during transport from Plant 9. The door seal failed and approximately 1 gallon of chromic acid spilled onto the pavement and into a storm sewer catch basin. The catch basin, which contained approximately 10 gallons of rainwater, was pumped out by MPC Environmental, and basin and pavement were rinsed with a sodium metabisulfite solution. A water sample collected from the storm sewer immediately down gradient of the catch basin was analyzed using a HACH Chromsaver 3 Cr+6 test kit and found to contain 0.3 parts per million hexavalent chromium, indicating that some quantity of acid-impacted water did overflow the basin. Water samples were collected on June 13, 1990 from the catch basin, down-gradient manhole, and Outfall #22 for on-site analysis with the HACH test kit and for laboratory analysis. Concentrations of hexavalent chromium were below detection limits in all samples (0.05 mg/L for lab samples, BDL samples from HACH kit reported as "0.0 ppm).

On June 7, 1991, a valve left open during a solvent change in the Degreaser in Bay E-5 allowed discharge of TCE to the industrial wastewater system.

On March 12, 1991, pumps diverting storm water runoff from the roof of Building 9 and some process water from an unidentified source within the plant failed, allowing discharge to the storm water sewer system. The pumps had been repaired by the time river patrol arrived. Outfall #22 was inspected and there was no visible evidence of a release.

On August 19, 1991, a pollution overflow system within Plant 9 caused a discharge of oily material to the City of Flint storm sewer because the flow exceeded pump capacity. A sheen approximately 20 feet wide extended about a half mile down the river. The sheen was contained with booms and there was no visible damage to the river bank or local aquatic life. The report states that the "connection between Plant 9 and Flint river was plugged on 8/23/91;" a handwritten note on the report states that the plug was removed 8/26/91. Accordingly, this must be the sump located on the northeastern portion of the Property.

On May 14, 1993, the motor became uncoupled from the pump in the sump pit under the north yard awning. Therefore, grinding oil was no longer being pumped out of the sump pit into the industrial waste lines. The oil level rose until it backed up the trench drain at the Stevenson St. entrance and overflowed into the street. Approximately 50 to 100 gallons of oil ran down Stevenson St. to the railroad tracks, then west along tracks (approx 75-100 feet) following natural drainage paths to the south and west. Sand and oil absorbing material were used to clean up the street and soak up oil on the ground. The top 2 to 3 inches of dirt were also removed. City of Flint's Fire Department was present and approved the cleanup.

Based on review of the above information and inspections conducted, these spills do not constitute PAOCs at the site.

4.5.2 Previous Investigations and Remedial Action

File documenting previous investigations and remedial action was reviewed. Reports of tank closures and related investigations from Plants 7 and 4, which are immediately adjacent to Building 9, were discovered during a review of facility files. There were no reports of previous investigations at Building 9, and information reviewed on investigations conducted at Plants 7 and 4 does not constitute PAOCs at Building 9.

4.5.3 Maintenance Files

Maintenance files were reviewed. No information suggesting that a release to the environment of oil or hazardous substances had occurred was discovered during a review of the maintenance files for Plant 9.

4.5.4 Plant Drawings Files

The plant drawings files were reviewed. Although this file did not contain information concerning releases, it did provide detail information on location of utilities, process lines, and areas of interest.

4.5.5 Waste Management Files

4.5.5.1 Hazardous Waste Manifests

Hazardous waste manifests files were reviewed. This provided information on types and quantities of hazardous waste generated at the facility and transported off site. It also provided information about the point generation which helped identify areas for BBL to investigate. Hazardous waste generated by the facility included TCE degreasing sludge, plating sludge, PCBs drained from capacitors as they were replaced, small volumes of paint-

related waste, and hazardous roofing tar. Information learned from this review is incorporated into what is addressed in Section 3.

4.5.5.2 Non-hazardous Solid Waste

The non-hazardous solid waste file was used to identify information on the quantities and types of non-hazardous solid waste generated at the Property. Non-hazardous wastes generated at Building 9 included Dubro grease, grinding swarf, shop blast dust, waste oil, and wooden floor blocks, as they were replaced. Similar to the hazardous waste manifests file, this information assisted BBL in review of the various areas at the Property in effort to identify PAOCs. Information learned from this review is incorporated into what is addressed in Section 3.

4.5.6 Material Usage

The material usage file contained information concerning product in material usage at the facility. This file review assisted BBL in determination of the types and quantities of materials used at the facility which assisted with review of specific areas. Information learned from this review is incorporated into what is addressed in Section 3. Materials used at Building 9 consisted primarily of 21 2N Chrome Alloy and High Carbon Steel. Other materials used included TCE, Dubro grease, quench oil, water-based grinding solution, plating solution, shop blast dust, small quantities of paints and solvents, and roofing tar, which was used for maintenance purposes.

5. Conclusions and Recommendations

Five areas encountered during this Phase I ESA met the definition of a PAOC and require further investigation. BBL recommends that a Phase II ESI be conducted to confirm or deny the presence of contaminants in these areas at levels that could pose an unacceptable risk to human health or the environment.

PAOC#1 - Electrical Substation

Minor amounts of oil were observed seeping into southern sidewall cracks in the electrical substation during the October 1995 Property walk through conducted by BBL. The oil was not from the PCB transformers, which appeared to be in good condition. During the June 1996 Property walk through, the cracks in the south wall were plugged with silicone caulk. It is thought that the seepage is from grinding/welding area oil rather than oil from the transformers. This area should be further investigated to determine if contaminants are present in soil and groundwater at concentrations that could pose an unacceptable risk to human health and the environment.

PAOC #2 - Stormwater Pump and Sump Located in the North Storage Area

Releases of oils were observed during the October 1995 Property walk through and historically have been documented from the overflow of the north storage yard stormwater and wastewater collection system. The overflow of these substances was documented as flowing 75 to 100 feet east down the adjacent railroad tracks. In addition, personnel interviews conducted during the June 1996 Property visit indicated releases of oil and oily wastewater, the most recent of which occurred on May 26, 1996. This area will require further investigation to determine if contaminants are present in soil and/or groundwater at concentrations that could pose an unacceptable risk to human health and the environment.

PAOC #3 - Northwest Side of Building Gravel Area

During the October 1993 Property walk through, oil staining was observed on the gravel area along the northwest side of the Property. During the June 1996 Property visit, GM personnel indicated that this area was excavated to a depth of 6 to 12 inches, and the excavated material was disposed by USPCI. Further investigation is required to determine if contaminants are present in soils and groundwater at concentrations that pose an unacceptable risk to human health and the environment.

PAOC #4 - Fire Protection Trench Excavation

On November 26, 1996, during trench excavation activities for a fire protection system in Building 9, an oil-like substance was observed seeping into the trench in the vicinity of Column B-9. This event was reported to BBL by personnel conducting the facility deactivation. This visual evidence of an oil-like substance seeping into the excavated trench indicates that this area meets the definition of a PAOC, and should be investigated further.

PAOC #5 - Former Trichloroethylene Degreasing Unit and Sump

In a report documenting an UST removal and petroleum contaminated soils removal operation, low levels of TCE were reported in the groundwater 150 feet downgradient from Building 9. The source of the TCE is unknown, but it may be the former trichloroethylene degreasing unit and sump. Due to the TCE groundwater impacts 150 feet downgradient from known TCE operations and a documented release, BBL considers this area and the groundwater to the north PAOC. Further investigation is required.

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