MEMORANDUM

TO: The Honorable Shawn M. Garvin
Cabinet Secretary, Dept. of Natural Resources and Environmental Control

FROM: Lisa A. Vest
Public Hearing Officer, Office of the Secretary
Department of Natural Resources and Environmental Control

RE: **Proposed Plan of Remedial Action for the General Motors Wilmington Assembly Plant Operable Unit 5**

DATE: June 10, 2019

I. Background:

A public hearing was held on Wednesday, March 13, 2019, at 6:00 p.m. at the Department of Natural Resources and Environmental Control ("DNREC," "Department"), 391 Lukens Drive, New Castle, Delaware to receive comment on the Department's Proposed Plan of Remedial Action for the General Motors Wilmington Assembly Plant - Operable Unit 5 ("Proposed Plan"). This Proposed Plan is issued pursuant to the statutory authority granted to the Department in 7 *Del.C.* Chapter 91, the *Delaware Hazardous Substance Cleanup Act* ("HSCA"). Specifically, 7 *Del.C.* §9107(e)(1), *Remedies*, directs that the Department shall "… before conducting a remedial action, propose a plan of remedial action based on any investigation or study conducted by or for the Secretary, the potentially responsible party, or others."

This Proposed Plan summarizes the clean-up (remedial) actions that the Department is proposing to address contamination found at the General Motors Wilmington Assembly Plant ("Site"), specifically, at Operable Unit 5 ("OU-5"). The Site is located at 801 Boxwood Road in Wilmington, Delaware, and consists of two tax parcels (07-042.10-055 and 07.042-20.010), totaling approximately 142 acres. The nearest intersection to the Site is Boxwood Road and Centerville Road.

The Site Investigation and Remediation Section of the Department's Division of Waste and Hazardous Substances issued its Proposed Plan in this matter on January 6, 2019, pursuant to the statutory requirements referenced above. On January 23, 2019, a member of the public expressed concerns with the Department's Proposed Plan as referenced above, and requested a public hearing. Accordingly, the Department held its public hearing regarding this matter on March 13, 2019.

This Site was originally developed in 1945 by General Motors Corporation for the purpose of automobile assembly. Prior to 1945, the Site was undeveloped land. General Motors Corporation began operations at the Site in 1946, and continued automobile assembly operations until July 2009, at which time the plant was idled. The Site was sold to Fisker Automotive, Inc., in July 2010. On March 31, 2011, the Revitalizing Auto Communities Environmental Response Trust ("RACER Trust") became effective, and began conducting, managing, and funding cleanup at 89 sites, including this former Wilmington Assembly Plant. In April 2014, the Site was purchased by Wanxiang Delaware Real Estate Holdings. Most recently, Boxwood Industrial Park, LLC, purchased the Site in October 2017.

The Site consists of a 3.2 million square foot Main Assembly Building, Waste Water Treatment Plant, Pump Houses, and Powerhouse, and is zoned heavy industrial. The Site contained operations for the manufacturing of automobiles, including, but not limited to, petroleum products for fueling and heating, painting, wastewater treatment plant processes, cleaning parts, and hazardous waste storage. Each of these operations used various chemicals. Releases occurred at the Site likely as a result of these historic operations, which impacted the soil and groundwater beneath the Site. In particular, OU-5 was also used historically as a "burn area" to dispose of extra wooden pallets (a routine operational task which utilized chemical accelerants such as acetone). Subsequently, that same area became known as the "Test Track area" while the property remained under the ownership of General Motors.

In June 2017, the Department prepared its OU-5 Focused Feasibility Study, at which time four remedial alternatives were evaluated for this location:

Alternative 1 (serving as a Baseline Condition): No action
Alternative 2: Excavation and offsite disposal of soil
Alternative 3: Capping with limited excavation and offsite disposal of soil
Alternative 4: In Situ/Ex Situ treatment of soil (mix soil with various treatments)

Alternative 3 was chosen as the best course of action, as it met the Department's remediation goals, was the most cost effective alternative, and would be protective of human health and the environment.

In 2018, the risk for vapor intrusion from OU-5 soil and groundwater into indoor air was re-evaluated by the Department, based on the potential for a new commercial building construction within OU-5. The December 2018 Vapor Intrusion Re-Evaluation revealed contamination at BH-27. Thus, the Department decided to add BH-27 as an area for soil removal in its Proposed Plan for OU-5, to eliminate the risk of vapor intrusion above the Department's acceptable standards. It should be noted that the re-evaluation for vapor intrusion did not indicate a risk to indoor air above DNREC standards.

Currently, no interim clean-up actions have been conducted in OU-5. The present property owner is evaluating commercial re-development options. No re-development plans have been finalized, but a new building may be constructed in the future.

The Department's Proposed Plan for OU-5 contains a six-part plan of remedial action. The Proposed Plan, which was presented in detail at the public hearing held on March 13, 2019, can be summarized as follows:

Due to the Department's concerns regarding contamination at OU-5, it was determined that a Remedial Investigation was necessary, in order to (1) fully understand the nature and extent of any soil and groundwater contamination; (2) evaluate risks to public health, welfare, and the environment associated with such identified contamination; and (3) perform a Feasibility Study that would identify and recommend a remedial action for OU-5.

The Remedial Investigation completed in 2015 found that the soil in OU-5 tested positive for the presence of metals (antimony, arsenic, cadmium and lead) over DNREC risk criteria for commercial use of the property (both outdoor and indoor workers, and utility workers). To fully evaluate all risk pathways, the risk assessment assumes that the soil is not capped, and is fully accessible. Residential reuse of the entire Site is restricted by previous Proposed Plans for areas identified on the Site as OU-1, OU-2, and OU-3. The areas of impacted soil are identified on Site maps as Monitoring Well 29 ("MW-29"), Bore Hole 34 ("BH-34"), BH-27, and the aforementioned Test Track area.

Groundwater sampling in OU-5 obtained during the 2015 Remedial Investigation revealed contamination as follows: (1) Metals, consisting of arsenic, barium, cobalt, iron and manganese; (2) Volatile Organic Compounds ("VOCs"), consisting of benzene and ethylbenzene; and (3) the Semi-VOC ("SVOC") naphthalene, which are above the standards for potable use. It should be noted that use of the groundwater is restricted for the entire Site by previous Proposed Plans for OU-1, OU-2, and OU-3. A previous ecological evaluation indicated that the groundwater contamination would not impact surface water. Two new wells, MW-112 and MW-113, were installed to determine if leaching was occurring and metals were potentially migrating offsite. Results from these new monitoring wells, along with other monitoring wells, indicated that metals were not migrating offsite at concentrations that would present an ecological concern or a human health risk.

1. **A Remedial Action Work Plan for the four (4) impacted soil areas identified must be prepared within 120 days of the issuance of the Final Plan of Remedial Action.** The soil from the three (3) smaller areas will be excavated and backfilled with DNREC-approved clean fill. A temporary cap will be placed over the Test Track Area to prevent contact with the impacted soils until a building or permanent cap is constructed. A permanent cap or building will be constructed within five (5) years.

2. **An Environmental Covenant, consistent with Delaware's Uniform Environmental Covenants Act (7 *Del.C.*, Ch. 79, Subchapter II), must be recorded with the New Castle County Recorder of Deeds within 90 days of the issuance of the Final Plan of Remedial Action.** The Environmental Covenant must include descriptions of the following activity and use restrictions: (a) Use Restrictions; (b) Limitation of Groundwater Withdrawal; (c) Compliance with Contaminated Materials Management Plan; and (d) Compliance with the Long Term Stewardship Plan.

3. **A Long-Term Stewardship Plan, updated with OU-5 requirements, must be submitted to DNREC within 60 days of the issuance of the Remedial Action Work Plan.** This will detail (1) the temporary cap and the cap inspection process for the Test Track Area; (2) the site-inspection schedule to be followed in order to ensure the long-term integrity of the remedy; and (3) the groundwater monitoring program, to ensure that groundwater is not migrating offsite to impact receptors. The temporary cap inspection must be conducted on a quarterly basis until a permanent cap or building is constructed.

4. **A Contaminated Materials Management Plan ("CMMP"), updated with OU-5 requirements, must be submitted to DNREC within 60 days of the issuance of the Remedial Action Work Plan.** The CMMP will provide guidance to enable construction workers to safely handle any potential contaminated soil, prevent soil migration (soil and airborne dust) and groundwater at OU-5.

5. **A Remedial Action Completion Report must be submitted to DNREC within 60 days of the completion of the remedial actions required in the Proposed Plan.** This report will document all remedial actions that have been performed at OU-5.

6. **A Request for Certification of Completion of Remedy must be submitted to DNREC within 60 days of approval of the Remedial Action Completion Report.** This is the certification that the Department will give to the property owners to verify that all remedial actions have been successfully completed.

As noted previously, the Department has the statutory basis and legal authority to act with regard to this Proposed Plan, pursuant to 7 *Del.C.* Ch. 91, specifically, at §9107(e)(1), *Remedies.* Members of the public attended the hearing held on March 13, 2019, with comment being received by the Department at that time. The hearing record formally closed for comment in this matter on March 28, 2019, with no additional comment having been received by the Department during the post-hearing phase of this matter.

Subsequent to the close of the public comment period, the Department performed a thorough review of the record, including all of the comments received on the Proposed Plan, which will be discussed in greater detail below. It should be noted that all noticing requirements concerning this matter were met by the Department. Proper notice of the hearing was provided as required by law.

II. SUMMARY OF THE PUBLIC HEARING RECORD:

The public hearing record consists of the following documents: (1) a verbatim transcript of the public hearing held on March 13, 2019; (2) nine documents introduced by Department staff at the aforementioned public hearing, and marked by this Hearing Officer accordingly as Department Exhibits 1-9; and (3) Technical Response Memorandum ("TRM") provided to this Hearing Officer by Richard Galloway, Hydrologist with the Department's Division of Waste and Hazardous Substances, Site Investigation and Remediation Section, dated May 21, 2019. The Department's person primarily responsible for this Proposed Plan, Mr. Galloway, developed the record with the relevant documents in the Department's files.

As stated previously, members of the public attended the aforementioned March 13, 2019 hearing, at which time comment was received by the Department concerning this Proposed Plan. The comments voiced by members of the public at the time of the March 13, 2019 hearing included concerns of (1) the extent of onsite soil contamination; (2) migrating VOCs in the groundwater onsite; (3) active dust management during construction/excavation; (4) deed restriction issues; and (5) proper onsite asbestos management.

At the request of this Hearing Officer, a Technical Response Memorandum ("TRM") was prepared by the Department's Division of Waste and Hazardous Substances, Site Investigation and Remediation Section staff, to serve as a comprehensive summary of the comment received in this matter. The Department's TRM not only reflects the comments received from the public in this matter, but also provides the Department's responses and recommendations concerning the same. Accordingly, the Department's Proposed Plan for OU-5, along with the aforementioned TRM, are hereby expressly incorporated into the hearing record generated in this matter, and are attached hereto for the Secretary's review as Appendices "A" and "B," respectively.

It should be noted that, while all comment received by the Department in this matter has been fully addressed within its TRM, the issue of asbestos management at OU-5 falls outside of the regulatory jurisdiction of the Department's Division of Waste and Hazardous Substances. It should be further noted that this issue has been referred to the appropriate regulatory authorities by the Department for their review.

III. RECOMMENDED FINDINGS AND CONCLUSIONS:

Based on the record developed, I find and conclude that the Department has provided appropriate reasoning regarding the need for its Proposed Plan of Remedial Action for OU-5, as noted above, and that the record supports the implementation of the same. Accordingly, I recommend the Department's Proposed Plan be adopted as the Final Plan of Remedial Action for OU-5, in the customary manner provided by law, and with appropriate conditions, to ensure continued improvement of environmental quality within OU-5.

Further, I recommend the Secretary adopt the following findings and conclusions:

1. The Department has the statutory basis and legal authority to act with regard to its Proposed Plan of Remedial Action for the General Motors Wilmington Assembly Plant - Operable Unit 5, pursuant to 7 *Del.C.* Ch. 91, specifically, at §9107(e)(1), *Remedies*;

2. The Department has jurisdiction under its statutory authority, pursuant to 7 *Del.C.* Ch. 60, to issue an Order adopting this Proposed Plan as a Final Plan of Remedial Action for OU-5;

3. The Department provided adequate public notice of this Proposed Plan, and of all proceedings in a manner as required by the law and regulations. The Department also provided the public with an adequate opportunity to comment on the same, including at the time of the public hearing held on March 13, 2019, and during the days subsequent to the hearing (through March 28, 2019), before making any final decision;

4. The Department considered all timely and relevant public comments in the Record, as established in the TRM provided by the Division of Waste and Hazardous Substances;

5. The Department has carefully considered the factors required to be weighed with regard to the implementation of the aforementioned Proposed Plan, and finds that the Record supports adoption of the same as its Final Plan of Remedial Action in this matter;

6. Adoption of the aforementioned Proposed Plan as the Department's Final Plan of Remedial Action for the General Motors Wilmington Assembly Plant OU-5 will enable the Department to ensure continued improvement of environmental quality at OU-5, as referenced above;

7. The Department has an adequate Record for its decision, and no further public hearing is appropriate or necessary; and

8. The Department shall serve and publish its Order on its internet site, and shall provide legal notice of the Order in the same manner that the Department provided legal notice of its original Proposed Plan in this matter.

LISA A. VEST
Public Hearing Officer

\ahear\ Proposed Plan Remed. Action GM OU5

Attachments/Appendix:
Appendix A: Proposed Plan
Appendix B: TRM (05/21/19)

APPENDIX "A"

PROPOSED PLAN OF REMEDIAL ACTION

General Motors Corp. Wilmington Assembly Plant OU-5
Wilmington, Delaware
DNREC Project No. DE-1149

January 2019

Delaware Department of Natural Resources and Environmental Control
Division of Waste and Hazardous Substances
Site Investigation & Restoration Section
391 Lukens Drive
New Castle, Delaware 19720

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- Figures: 1 & 2
- Glossary of Terms

PROPOSED PLAN OF REMEDIAL ACTION

General Motors Corp. Wilmington Assembly Plant OU- 5
Wilmington, Delaware
DNREC Project No. DE-1149

Approval:
This Proposed Plan meets the requirements of the Hazardous Substance Cleanup Act.

Approved by:

Timothy Ratsep, Environmental Program Administrator
Site Investigation & Restoration Section

January 2, 2014
Date

General Motors Corp. Wilmington Assembly Plant OU- 5

What is the Proposed Plan of Remedial Action?

The Proposed Plan of Remedial Action (Proposed Plan) summarizes the clean-up (remedial) actions that are being proposed to address contamination found at the Site for public comment. A legal notice is published in the newspaper for a 20-day comment period. DNREC considers and addresses all public comments received and publishes a Final Plan of Remedial Action (Final Plan) for the Site.

What is the GM Site OU-5?

The General Motors Corp. Wilmington Assembly Plant is located at 801 Boxwood Road in Wilmington, Delaware, and consists of two tax parcels (07-042.10-055 and 07.042-20.010), totaling approximately 142 acres (Figure 1). The nearest intersection to the Site is Boxwood Road and Centerville Road. The Site consists of a 3.2 million square foot Main Assembly Building, Waste Water Treatment Plant (WWTP), Pump Houses, and Powerhouse and is zoned heavy industrial (Figure 2).

This proposed plan addresses Operable Unit-5 (OU-5). The location of the OUs is shown on Figure 2. A brief description of the OUs is provided in the table below.

Operable Units	***Description***
OU-1	The pump house and aboveground storage tanks (AST) L through Tank O in the AST containment area. Covers soil and groundwater
OU-2	Large AST Area/Truck Unloading Rack and surrounding areas. Cover Soil and groundwater.
OU-3	Main Assembly Plant Area soil and groundwater Not included in other OUs.
OU-4	Former Petroleum Dispensing and UST Area soil plus groundwater under OU-4
OU-5	Former Test Track Area. Covers soil and groundwater.
OU-6	Wooded Area adjacent to Little Mill Creek. Covers soil and groundwater.

OU-1, OU-2, OU-3, and OU-6 have been addressed in separate Proposed Plans. OU-4 will be addressed in separate Proposed Plan.

What happened at the GM Site OU-5?

The Site was developed in 1945 by GM Corporation for the purpose of automobile assembly. Prior to 1945, the Site was undeveloped land. GM Corporation began operations at the Site in

1946 and continued automobile assembly operations until July 2009 when the plant was idled. The Site was sold to Fisker Automotive, Inc. (Fisker) in July 2010. On March 31, 2011, the Revitalizing Auto Communities Environmental Response Trust (RACER Trust) became effective and has been conducting, managing, and funding cleanup at 89 sites including the former Wilmington Assembly Plant. In April 2014, the Site was purchased by Wanxiang Delaware Real Estate Holdings (Wanxiang). Boxwood Industrial Park, LLC purchased the property in October 2017.

The Site contained operations for the manufacturing of automobiles including but not limited to petroleum products for fueling and heating, painting, wastewater treatment plant, cleaning parts, and hazardous waste storage. Each of these operations used various chemicals. Releases occurred at the Site likely as a result of historic operations, which impacted the soil and groundwater beneath the Site.

What is the environmental problem at the GM Site OU-5?

A Remedial Investigation (RI) Report completed in 2015 found that the soil in OU-5 contained **metals** (antimony, arsenic, cadmium, and lead) over DNREC risk criteria for commercial use of the property (outdoor and indoor workers) and utility workers. To fully evaluate all risk pathways, the risk assessment assumes that the soil is not capped and is fully accessible. Residential reuse of the entire Site is restricted by previous proposed plans for OU-1, OU-2, and OU-3. The areas of impacted soil are located in four (4) areas identified on Figure 3 as MW-29 Area (small orange square area to the southwest), BH-34 11 Area (small orange square area to the south), BH-27/MW 28-11 Area (small orange square area within the large green area), and Test Track Area (large green area).

Groundwater in OU-5 contained **metals** (arsenic, barium, cobalt, iron and manganese) and **volatile organic compounds (VOCs)** (benzene, ethylbenzene) and the **semi-volatile organic compound (SVOC)**, naphthalene, which is above the standards for potable use. Use of the groundwater is restricted by previous proposed plans for OU-1 to OU-3 for the entire Site for potable use. A previous ecological evaluation indicated that the groundwater contamination would not impact surface water. Two new wells, MW-112 and MW-113 were installed to determine if leaching was occurring and metals potentially migrating offsite. Results from these new monitoring wells as well as other monitoring wells indicated that metals are not migrating offsite at concentrations that would represent an ecological concern.

The risk for vapor intrusion from OU-5 soil and groundwater into indoor air was also re-evaluated based on the potential for a new commercial building construction in this OU. The evaluation was conducted excluding soil data from MW-29 Area and BH-34 11 Area since the soil from these areas are planned to be removed due to elevated metals concentrations. BH-27/MW 28-11 was also excluded from the risk since this soil is planned to be removed due to elevated VOCs in soil. The re-evaluation for vapor intrusion did not indicate a risk to indoor air above DNREC standards.

What clean-up actions have been taken at the GM Site OU-5?

No interim actions have been conducted in OU-5.

What does the owner want to do at the GM Site OU-5?

The property owner is evaluating commercial re-development options. No re-development plans have been finalized but a new building may be constructed in the future.

What additional clean-up actions are needed at the GM Site OU-5?

DNREC proposes the following remedial actions for the Site, which need to be completed before a Certificate of Completion of Remedy (COCR) can be issued. The remedial actions are proposed on an OU basis.

1) Prepare a Remedial Action Work Plan for the four (4) impacted soil areas identified on Figure 3 within 120 days of the issuance of the Final Plan of Remedial Action. The soil from the three (3) smaller areas will be excavated and backfilled with DNREC-approved clean fill. A temporary cap will be placed over the Test Track Area to prevent contact with the impacted soils until a building or permanent cap is constructed. A permanent cap or building will be constructed within 5 years.

2) An Environmental Covenant, consistent with Delaware's Uniform Environmental Covenants Act (7 Del.C. Chapter 79, Subchapter II) must be recorded in the Office of the New Castle County Recorder of Deeds within 90 days of the issuance of the Final Plan of Remedial Action. The environmental covenant will cover New Castle County tax parcel 07-042.10-055 which includes OU-1 to OU-5. Therefore, the restrictions will cover OU-1 to OU-5 even if the restrictions are not necessary for every OU. The Environmental Covenant must include the following activity and/or use restrictions:

    [a.] Use Restriction. Use of the Property shall be restricted solely to those non-residential type uses permitted within Commercial, Manufacturing, or Industrial Districts;

    [b.] Limitation of Groundwater Withdrawal. No groundwater wells shall be installed and no groundwater shall be withdrawn from any well on the Property without the prior written approval of DNREC-SIRS and DNREC Division of Water;

    [c.] Compliance with Contaminated Materials Management Plan. All work required by the Contaminated Materials Management Plan must be performed to DNREC's satisfaction in accordance with the Plan;

    [d.] Compliance with the Long Term Stewardship Plan. For OU-2 and OU-3 and OU-5, all work required by the Long Term Stewardship Plan must be performed to DNREC's satisfaction in accordance with the Plan.

3) A Long-Term Stewardship Plan (LTS) updated with OU-5 requirements shall be submitted to DNREC for approval within 60 days of the issuance of the Remedial Action Work Plan. The LTS plan will detail: 1) the temporary cap and the cap inspection process for the Test Track Area, 2) the site-inspection schedule to be followed in order to ensure the long-term integrity of the remedy and 3) the Groundwater monitoring program to ensure that groundwater is not migrating offsite to impact receptors. The temporary cap inspection must be conducted on a quarterly basis until a permanent cap or building is constructed.

4) A Contaminated Materials Management Plan (CMMP) updated with OU-5 requirements shall be submitted to DNREC within 60 days of the issuance of the Remedial Action Work Plan. The CMMP will provide guidance to enable construction workers to safely handle any potential contaminated soil, prevent soil migration (soil and air borne dust) and groundwater at the Site.

5) Remedial Action Completion Report must be submitted to DNREC within 60 days of the completion of the remedial actions required in this Proposed Plan.

3) A request for a Certification of Completion of Remedy (COCR) must be submitted to DNREC within 60 days of approval of the Remedial Action Completion Report.

What are the long term plans for the Site after the cleanup?

The property owner is evaluating commercial re-development options. No re-development plans have been finalized.

How can I find additional information or comment on the Proposed Plan?

The complete file on the Site including the Remedial Investigation Report and the various reports are available at the DNREC office, 391 Lukens Drive in New Castle, 19720. Most documents are also found on:

http://www.nav.dnrec.delaware.gov/DEN3/

The 20-day public comment period begins on January 6, 2019 and ends at close of business (4:30 pm) on January 28, 2019. Please send written comments to the DNREC office at 391 Lukens Drive, New Castle, DE 19720 to Rick Galloway, Project Officer at (302) 395-2614 or via email to rick.galloway@state.de.us.

Figure 1: Site Location Map
Figure 2: Site Map with Operable Units
Figure 3: OU-5 Soil Impacted Areas

RMG:gpb
RMG19002.doc
DE 1149 II B 8

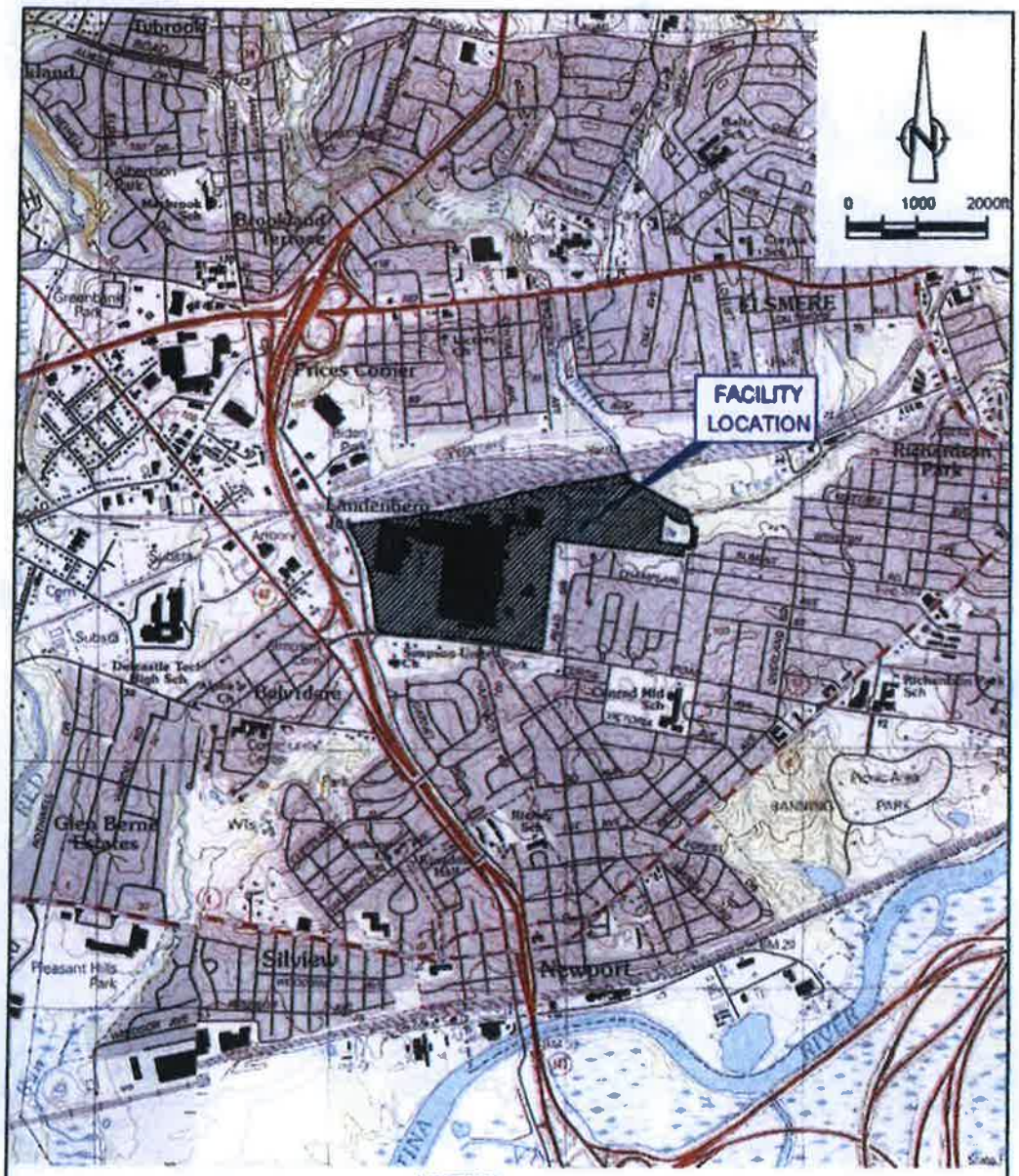

FIGURE 1
FACILITY LOCATION
REMEDIAL INVESTIGATION REPORT
FORMER GM WILMINGTON ASSEMBLY PLANT
Wilmington, Delaware

GHD

REFERENCE:
USGS WILMINGTON SOUTH QUADRANGLE, DEL TOPOGRAPHIC, 7.5 MINUTES SERIES 1997 SCALE: 1:24,000

017338-T04(PRES005)GN-SC002 OCT 30, 2015

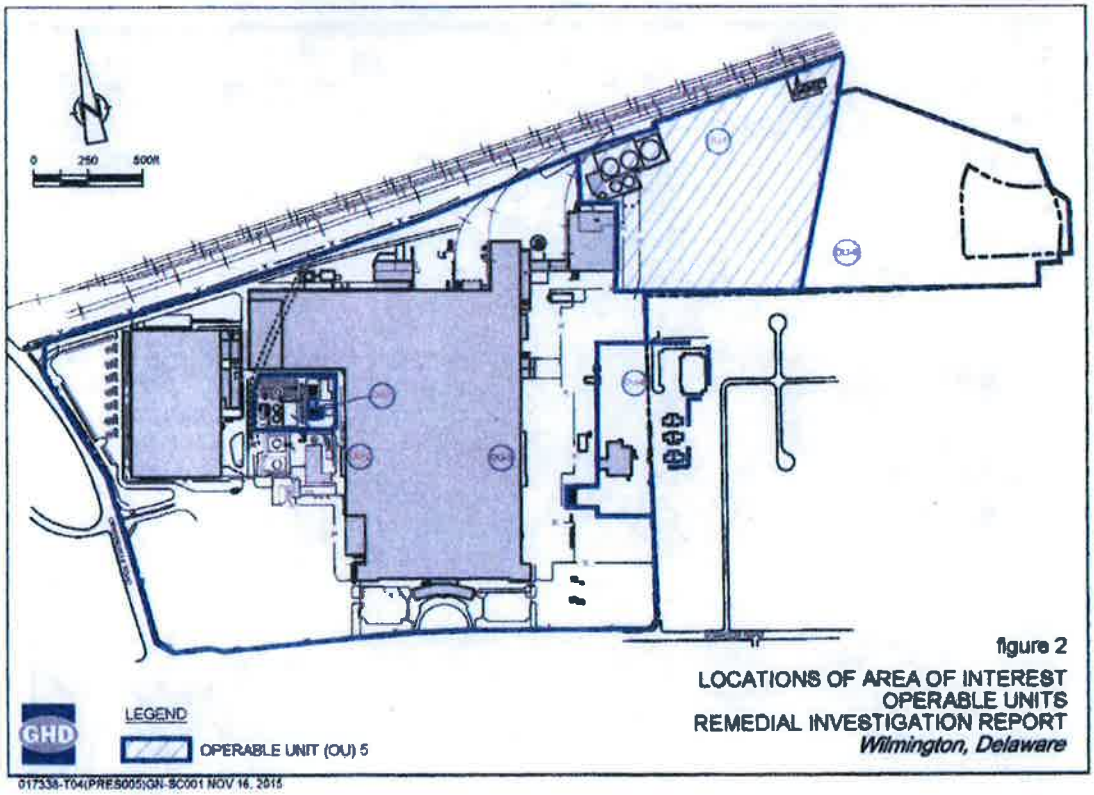

figure 2
LOCATIONS OF AREA OF INTEREST
OPERABLE UNITS
REMEDIAL INVESTIGATION REPORT
Wilmington, Delaware

017338-T04(PRES005)GN-SC001 NOV 16, 2015

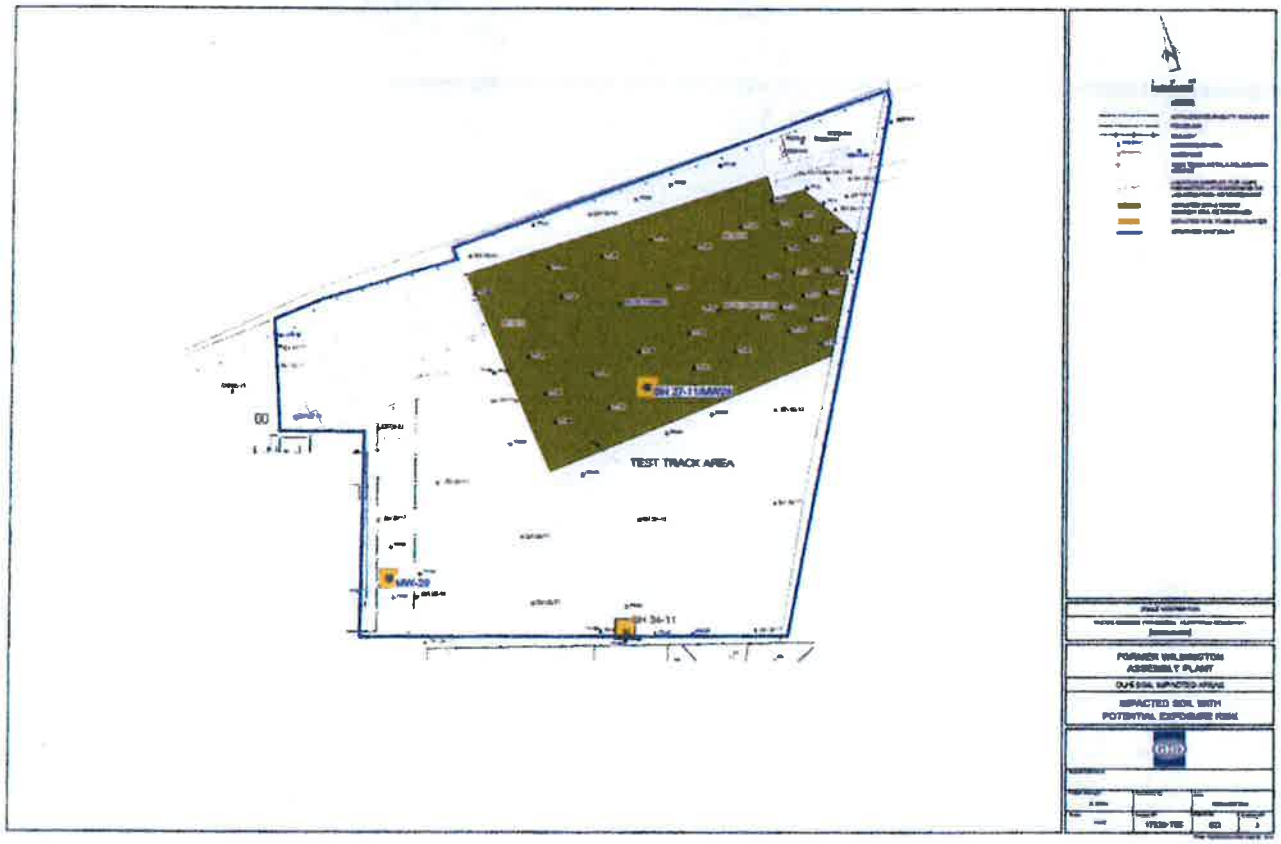
TEST TRACK AREA
MW-28
BH 36-11
FORMER WILMINGTON
ASSEMBLY PLANT
IMPACTED SOIL WITH
POTENTIAL EXPOSURE RISK

Figure 3

Glossary of Terms Used in this Proposed Plan

Certification of Completion of Remedy (COCR)	A formal determination by the Secretary of DNREC that remedial activities required by the Final Plan of Remedial Action have been completed.
Contaminant of Concern (COC)	Potentially harmful substances at concentrations above Acceptable levels.
Contaminated Materials Management Plan	A written plan specifying how potentially contaminated material at a Site will be sampled, evaluated, staged, transported, and disposed of properly.
Final Plan of Remedial Action	DNREC's adopted plan for cleaning up a hazardous site.
Risk	Likelihood or probability of injury, disease, or death.
Restricted Use	Commercial or Industrial setting
SIRS	Site Investigation Restoration Section of DNREC, which oversees cleanup of sites that were contaminated as a result of past use, from dry cleaners to chemical companies

APPENDIX "B"

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DIVISION OF WASTE AND HAZARDOUS SUBSTANCES
SITE INVESTIGATION & RESTORATION SECTION

MEMORANDUM

To: Lisa Vest, Hearing Officer, Office of the Secretary

Through: Tim Ratsep, Director TR 5/21/19
Qazi Salahuddin, Program Manager II QS 5/21/19
Keith Brady, Deputy Attorney General KRB 5/21/19

From: Richard Galloway, Hydrologist RMG 5/21/19

RE: Technical Response Memorandum Regarding the March 13, 2019 Public Hearing on the Proposed Plan of Remedial Action for General Motors Wilmington Assembly Plant Operable Unit 5

Date: May 21, 2019

Site Background:

This Technical Response Memorandum (TRM) was prepared at the request of the presiding hearing officer to assist in the completion of the Hearing Officer's Report to the Secretary of the Department of Natural Resources and Environmental Control (Department) and the final decision on the Proposed Plan of Remedial Action for General Motors Wilmington Assembly Plant Operable Unit 5.

On January 6, 2019, DNREC-Site Investigation & Restoration Section (SIRS) issued a Proposed Plan of Remedial Action (Proposed Plan) for General Motors Wilmington Assembly Plant (aka GM or DE-1149) Operable Unit 5 (OU-5) under Hazardous Substance Cleanup Act (HSCA) (7 Del. C. Section 9107 (e) (1)): 9107 Remedies. Subsection (e) before conducting a remedial action, the Secretary shall:

(1) Propose a plan of remedial action based on any investigation or study conducted by or for the Secretary, the potentially responsible party, or others.

On January 23, 2019, a member of the public expressed concerns with DNREC-SIRS's Proposed Plan for GM OU-5 and requested a public hearing.

On February 17, 2019, DNREC-SIRS placed a Legal Notice for a Public Hearing regarding the Proposed Plan of Remedial Action in Wilmington area newspapers.

On March 13, 2019, a Public Hearing regarding the GM OU-5 Proposed Plan was conducted at DNREC-SIRS Office at 391 Lukens Drive, New Castle, Delaware. DNREC-SIRS completed a PowerPoint presentation. Members of the public were encouraged to provide comments to the Proposed Plan of Remedial Action.

Public Hearing Comment/Response Section:

As noted in the previous section, members of the public were encouraged to provide comments to the Proposed Plan of Remedial Action. A total of four (4) individuals elected to provide comment. The purpose of this Section is to note the individual comments and then provide DNREC-SIRS' response. The individual comments will be in the order that they were presented at the Public Hearing.

Bill Dunn's Comments-

1) **DNREC should consider digging up 2 feet of soil or a minimum of 1 foot of soil from portion of OU-5 (Transcript Page 23, rows 3-8).**

In order to address these concerns, DNREC-SIRS will begin with a description of the areas of contamination, types of contamination and depths of contamination. DNREC-SIRS will next describe the Feasibility Study process in order to demonstrate the thoroughness of the remedy evaluation process. Finally, DNREC-SIRS will explain why the remedy chosen was fully protective of human health and the environment.

The July 17, 2015, Remedial Investigation Report identified three separate areas of soil impact- 1) **MW-29** Area, 2) **BH-34** Area, and 3) **Test Track** Area. The average groundwater depth was 12 feet below ground surface (bgs). Contamination in soil presented a risk to utility workers, outdoor workers, indoor workers due to direct contact and inhalation, if not remediated.

MW-29 Area contaminants were identified as the **metals** - antimony, barium, cadmium, lead, and zinc; **volatile organic compounds** (VOCs)-1,4-dichlorobenzene, ethylbenzene, and xylene; and **semi-volatile organics** (SVOCs)-2-methylnaphthalene, and naphthalene. The contamination extended from under the pavement to a depth of approximately 17 feet below ground surface (bgs). The area of contamination is likely to be in contact with the groundwater. Since the contamination is in contact with the groundwater, leaching of the contamination into the groundwater is possible.

BH-34 Area contaminants were identified as the **metals** - antimony, arsenic, lead, and cobalt. The contamination extended from under the pavement to a depth of approximately 7-9 feet bgs. The area of contamination is not likely to be in contact with the groundwater but is in close proximity to the groundwater table and leaching of the contamination into the groundwater is possible.

Test Track Area contaminants were identified as the **metals**- antimony, arsenic, barium, cadmium, lead, and zinc. The majority of the contamination in this area extended from under the pavement to a depth of approximately 2 feet bgs. One sample location extended to 4 feet and one sample location to 12 feet bgs. The majority of the soil would not be in contact with groundwater.

The June 30, 2017 OU-5 Feasibility Study (FS) evaluated four (4) remedial options including 1) No Action, 2) Excavation and Offsite Disposal, 3) Capping with limited excavation and offsite disposal, 4) In-Situ/Ex-Situ Treatment. Remedial Option 3 is split into two options- A) Capping with an asphalt cap and B) Capping with high-density polyethylene liner system. The FS discussion focuses on the active remedy such as the treatment of the soil and does not discuss institutional controls including environmental covenants, etc.

Remedial Option 1 (No Action) is included as standard practice to demonstrate that a remedy is required but it is not considered a viable remedial option. **Remedial Option 2 (Removal)** included excavation and disposal of soil from the MW-29 Area, BH-34 Area and Test Track Area. **Remedial Option 3 (Removal and Capping)** included excavation of MW-29 Area, BH-34 Area and capping of the Test Track Area. **Remedial Option 4 (Soil Treatment)** included immobilization of the contaminants in soil.

Each of the remedies was evaluated for three (3) Threshold Criteria and six (6) Balancing Criteria. **Remedial Option 1 (No Action)** did not meet the criteria and was eliminated from consideration. **Remedial Option 2, Remedial Option 3, and Remedial Option 4** are all protective for direct contact and inhalation of the soil contaminants and thus all three (3) remedial options meet all of the criteria. **Remedial Option 2 (Removal)** and **Remedial Option 3 (Removal and Capping)** both options remove soil from **MW-29** and **BH-34 areas,** which will prevent leaching from the soil into the groundwater while **Remedial Option 4 (Soil Treatment)** does not remove this soil. Thus **Remedial Option 2 (Removal)** and **Remedial Option 3 (Removal and Capping)** are more protective than **Remedial Option 4 (Soil Treatment). The cost for Remedial Option 2 (Removal)** is approximately $30,000,000 while the cost for **Remedial Option 3 (Removal and Capping)** is approximately $2,300,000. Since **Remedial Option 3 (Removal and Capping)** is more cost effective but equally protective as **Remedial Option 2 (Removal)**, DNREC-SIRS chose the **Remedial Option 3 (Removal and Capping)**. Since **Remedial Option 3, which includes removal of soil from areas of high concentrations,** is protective of human health and the environment, additional removal of one (1) or two (2) feet soil will not be necessary.

2) **VOCs are migrating in groundwater in OU-5. The VOCs should be contained (Transcript Page 23, rows 15-23).**

DNREC agrees that VOCs are migrating in the groundwater. However, as documented in the July 17, 2015 Remedial Investigation Report and November 15, 2018 OU-5 Groundwater Monitoring Results Report, there are no drinking water receptors and the contamination is breaking down prior to exiting OU-5. There were no VOCs detected in the surface water samples from Little Mill Creek over DNREC standards. In addition, according to the January 6, 2019 Proposed Plan, a Long-Term Stewardship Plan (LTS) plan will require periodic groundwater monitoring to ensure that contamination does not migrate off OU-5 at concentrations that would present a

risk to human health or the environment. Since there is no offsite migration of VOCs over standards, no containment barrier is needed and continued monitoring will ensure that the remedy remains protective.

3) **If DNREC doesn't take an active oversight of dust during digging that creates problems (Transcript Page 24, rows 7-10).**

DNREC agrees that active dust management is required during construction or excavation in OU-5. To address dust management during construction, the Proposed Plan as advertised on January 6, 2019 included a requirement for a Contaminant Material Management Plan (CMMP) for OU-5. A CMMP document has been completed for other operable units for the Site. Requirements for OU-5 would need to be added to the existing CMMP. The intention of the CMMP is for an environmental consultant, to actively manage the handling of soil and groundwater during utility installation/building construction to prevent construction workers from coming into contact with contaminated soil/groundwater. Contaminated soil and/or groundwater would be temporary stored prior to proper offsite disposal. The CMMP would also require dust management such as water spraying to prevent offsite dust migration during construction to protect the surrounding residences.

Dust management would also be required during proposed excavation of the contamination areas MW-29, BH-34 and BH-27. The consultant would be required to include this in the Remedial Action Work Plan, which DNREC would have to approve and then the consultant would implement the dust control to prevent offsite dust migration.

Dust monitoring would be required for construction and contaminated soil removal to ensure that the dust control measures are effective.

4) **New Castle County has spoken out against being held responsible for upholding deed restrictions on property. DNREC should not move forward with deed restrictions on the property until they get New Castle County to agree to uphold these deed restrictions (Transcript Page 24, rows 11-24 and Page 25, rows 1-6).**

The GM property consists of two parcels. One tax parcel contains operable units OU-1, 2, 3, 4 and 5. The second tax parcel contains OU-6. DNREC advertised the Proposed Plans for OU-1, 2, and 3 in November 2015. Part of the remedy for OU-1 to OU-3 is an environmental covenant (deed restrictions) with the same language as presented in the Proposed Plan for OU-5. There were no comments to the Proposed Plans and so Final Plans were advertised in December 2015. The environmental covenant was recorded on March 22, 2018. The environmental covenant covers OU-1, 2, 3, 4 and 5. As a result, OU-5 already has an environmental covenant (deed restriction); therefore, any discussion about not moving forward with the covenant on OU-5 is not applicable.

Bill Lower's Comments- Bill Lower's comments were in support of DNREC and DNREC's response is not necessary.

1) **We support the agency's position for Option 3 for the remediation of OU-5. We feel that it best represents sound environmental stewardship while protecting taxpayer resources. The money that will be addressing the contamination is our taxpayer funds going all the way back via RACER Trust to the stimulus program in 2009.**
2) **Secondly, the new building. Ultimately, when we get to the redevelopment of the site in the future, in addition to the cap surrounding the building, the new building will help entomb any residual contamination for future generations.**

Sue Laushey's Comments-

1) **DNREC needs to provide more papers (documents) at the Hearing so that Ms. Laushey can bring the information back to the community that she serves (Transcript Page 26, rows 22-24 and Page 27, rows 1-7).**

   DNREC did not provide a hard copy of documents for the Public Hearing for a number of reasons. First, some of the documents such as the July 17, 2015 Remedial Investigation Report, are voluminous. Second, all of the documents involved in this Public Hearing are available at DNREC's Environmental Navigator (DEN) as well as the webpage set up for the Public Hearing. The hearing officer was able to provide a hard copy of the PowerPoint presentation with the list of Exhibits to Ms. Laushey.

2) **I am concerned about other contaminants not listed tonight and wondering if there is going to be any more extensive research done because there are swimming pool and houses near OU-5 (Transcript Page 27, rows 8-19).**

   The contaminants presented in the Department's PowerPoint presentation do not represent all of the chemicals that were detected at the Site. As per the standard practice, the Department only presented the chemicals (known as contaminants of concern or COCs) that contributed to the human health or the environmental risk above the acceptable cancer risk level of 1 in 100,000 for cancer and non-cancer risk represented as Hazard Index (HI) of 1.

   During the remedial investigation, many chemicals were detected at low concentrations or only detected once above the Department's Screening Level Table (2017, DNREC). The Screening Level Table contains a list of chemicals with concentrations that represent a cancer risk of 1 in 1,000,000 or a non-cancer risk represented as Hazard Index (HI)=0.1, which is 10 times lower than the action level. If chemicals exceed the Screening Level Table concentrations then they are further evaluated in a risk assessment. The risk assessment in the RI includes an evaluation of the frequency of detection, statistical evaluation, identification of potential targets for contamination (receptors), pathway for contamination and comparison to the action level discussed above. The full list of chemicals detected in OU-5 is presented in the 2015 RI.

   Extensive sampling has been conducted in Operable Unit 5. 123 soil samples were collected during the RI in addition to eight (8) monitoring wells which were installed

and sampled. The extent of soil and groundwater was fully delineated and is complete. The OU-5 soil and groundwater contamination identified above DNREC action levels does not extend offsite of OU-5.

As noted in the paragraph above and as part of the RI risk assessment process, the consultant is required to identify onsite and offsite receptors that may be impacted by contamination. The potential receptors identified included construction workers, site workers, utility workers, nearby and adjacent residents, and Little Mill Creek. As part of the evaluation, BrightFields, Inc., consultant, reviewed nearby and adjacent residents to see if they were receiving a water bill. Lack of a water bill would indicate the use of a private drinking water well. None of these residents were identified as using private well for drinking.

There is potential that groundwater contamination may migrate offsite at the eastern side of OU-5. This was addressed in the January 2, 2019 Proposed Plan. RACER would be required to conduct periodic groundwater monitoring to make sure that groundwater contamination does not migrate offsite at concentrations that would pose a risk to human health or the environment. Since contamination has not migrated offsite and will be monitored in the future, there is no potential impact to Little Mill Creek or the surrounding community.

Mario Corea's Comments-

1) **Was asbestos identified before demolition was started (Transcript Page 29, rows 22-24)? Is asbestos being addressed properly (Transcript Page 30, rows 1-12).**

   This hearing pertained to the Proposed Plan of Remedial Action to address the release of hazardous substances at OU-5 of the former General Motors Site. The Asbestos management falls outside of the regulatory jurisdiction of DNREC-SIRS. It must be noted, however, that the asbestos issue at the former General Motors Site is under investigation by the appropriate regulatory authorities.

Conclusion:

After reviewing the comments submitted, DNREC-SIRS endorse the above responses and recommendations for the inclusion in the Hearing Officer's Report. DNREC-SIRS determined that the remedies included in the January 2, 2019 Proposed Plan are protective of human health and the environment and recommends no changes to the Proposed Plan.

References

1. Conestoga-Rovers & Associates, Inc. July 17, 2015, Remedial Investigation Report.
2. GHD. June 30, 2017, OU-5 Focused Feasibility Study Report.
3. DNREC-SIRS. Revised October 2017, DNREC-SIRS Screening Level Table.
4. USEPA. December 1989, Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation.
5. GHD. October 9, 2018, Monitoring Well Abandonment and Installation Work Plan.

6. GHD. November 15, 2018, OU-5 Groundwater Monitoring results Report.
7. GHD. December 20, 2018, VI Evaluation for OU-5 Memo.
8. DNREC-SIRS. January 2, 2019, Legal Notice for Proposed Plan of Remedial Action and Public Workshop for OU-5.
9. DNREC-SIRS. January 2, 2019, Proposed Plan of Remedial Action OU-5.
10. DNREC-SIRS. February 17, 2019, Legal Notice for Public Hearing regarding the Proposed Plan of Remedial Action-OU-5, General Motors Corp-Wilmington Assembly Plant.
11. DNREC-SIRS. March 13, 2019, Public Hearing Presentation regarding the Proposed Plan of Remedial Action-OU-5, General Motors Corp-Wilmington Assembly Plant.

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