National Pollutant Discharge Elimination System (NPDES) Permit Program

F A C T S H E E T

Regarding an NPDES Permit to Discharge to Waters of the State of Ohio
for **Navistar, Inc.**

Public Notice No.: 14-03-005
Public Notice Date: March 4, 2014
Comment Period Ends: April 4, 2014

OEPA Permit No.: **1IN00022*KD**
Application No.: **OH0009954**

Name and Address of Applicant:
Navistar, Inc.
Springfield Assembly Plant
6125 Urbana Road
Springfield, Ohio 45502

Name and Address of Facility Where Discharge Occurs:
Navistar, Inc.
Springfield Assembly Plant
6125 Urbana Road
Springfield, Ohio
Clark County

Receiving Water: **unnamed tributary of Moore Run**

Subsequent Stream Network: **Moore Run to Mad River to Great Miami River to the Ohio River**

Introduction

Development of a Fact Sheet for NPDES permits is mandated by Title 40 of the Code of Federal Regulations, Section 124.8 and 124.56. This document fulfills the requirements established in those regulations by providing the information necessary to inform the public of actions proposed by the Ohio Environmental Protection Agency, as well as the methods by which the public can participate in the process of finalizing those actions.

This Fact Sheet is prepared in order to document the technical basis and risk management decisions that are considered in the determination of water quality based NPDES Permit effluent limitations. The technical basis for the Fact Sheet may consist of evaluations of promulgated effluent guidelines, existing effluent quality, instream biological, chemical and physical conditions, and the relative risk of alternative effluent limitations. This Fact Sheet details the discretionary decision-making process empowered to the Director by the Clean Water Act and Ohio Water Pollution Control Law (ORC 6111). Decisions to award variances to Water Quality Standards or promulgated effluent guidelines for economic or technological reasons will also be justified in the Fact Sheet where necessary.

Effluent limits based on available treatment technologies are required by Section 301(b) of the Clean Water Act. Many of these have already been established by U.S. EPA in the effluent

guideline regulations (a.k.a. categorical regulations) for industry categories in 40 CFR Parts 405-499. Technology-based regulations for publicly-owned treatment works are listed in the Secondary Treatment Regulations (40 CFR Part 133). If regulations have not been established for a category of dischargers, the director may establish technology-based limits based on best professional judgment (BPJ).

Ohio EPA reviews the need for water-quality-based limits on a pollutant-by-pollutant basis. Wasteload allocations are used to develop these limits based on the pollutants that have been detected in the discharge, and the receiving water's assimilative capacity. The assimilative capacity depends on the flow in the water receiving the discharge, and the concentration of the pollutant upstream. The greater the upstream flow, and the lower the upstream concentration, the greater the assimilative capacity is. Assimilative capacity may represent dilution (as in allocations for metals), or it may also incorporate the break-down of pollutants in the receiving water (as in allocations for oxygen-demanding materials).

The need for water-quality-based limits is determined by comparing the wasteload allocation for a pollutant to a measure of the effluent quality. The measure of effluent quality is called PEQ - Projected Effluent Quality. This is a statistical measure of the average and maximum effluent values for a pollutant. As with any statistical method, the more data that exists for a given pollutant, the more likely that PEQ will match the actual observed data. If there is a small data set for a given pollutant, the highest measured value is multiplied by a statistical factor to obtain a PEQ; for example if only one sample exists, the factor is 6.2, for two samples - 3.8, for three samples - 3.0. The factors continue to decline as samples sizes increase. These factors are intended to account for effluent variability, but if the pollutant concentrations are fairly constant, these factors may make PEQ appear larger than it would be shown to be if more sample results existed.

Summary of Permit Conditions

While the current permit lists the receiving water as an unnamed tributary of Moore Run, the limits in the permit are based on allocations to protect Moore Run. The draft permit contains conditions to make the limits appropriate to the receiving water. The permit contains a compliance schedule that would require Navistar to choose which receiving water and limits they would rather meet. The permit would require stricter limits for ammonia, total dissolved solids, silver and chronic toxicity if Navistar chooses to keep the discharge to the unnamed tributary. If Navistar chooses to pump the discharge directly to Moore Run, the existing limits would continue to apply.

The permit also contains a compliance schedule to find another disposal option for Stage 5 boilout wastewaters. Based on Ohio EPA's July 2011 compliance sampling and stream biological data, the current treatment system does not appear to be able to adequately treat wastewaters that are as concentrated as the Stage 5 boilout. This schedule would allow the company 15 months to find another disposal alternative.

Mercury and silver were placed into Group 5 in the wasteload allocation, which demonstrates that they have the reasonable potential to exceed water quality standards. Therefore, Navistar will have limits for both silver and mercury. Navistar did not apply for a mercury variance

renewal, so the monthly average mercury limit will be 12.0 ng/l and the daily maximum mercury limit will be 1700 ng/l for either discharge location.

Based on the whole effluent toxicity analysis, the permit contains limits for acute and chronic toxicity.

E. coli limits and monitoring will replace fecal coliform limits and monitoring due to water quality standards (OAC 3745-1). Navistar has indicated that it does not foresee any problems complying with the *E. coli* limits, so the permit does not include a compliance schedule.

Limits for dissolved oxygen, 5-day carbonaceous biochemical oxygen demand ($CBOD_5$), oil and grease, and pH will remain the same as in the previous permit for Outfall 001/021.

For either discharge option, permit limits for cadmium and the monitoring requirement for heptachlor epoxide are being removed because they no longer have the reasonable potential to exceed water quality standards.

Monitoring requirements for cyanide and lead have been added for outfall 001/021 due to best available control technology currently available (40 CFR Part 433.14). Monitoring requirements for total filter residue, also known as total dissolved solids (TDS) have been added to the permit because of high measured TDS values. Monitoring will help to evaluate whether permit limits will be necessary in the future.

For Outfall 001, monitoring for selenium is being added because selenium was detected at concentrations near the wasteload allocation (WLA). The permit contains a tracking and reduction requirement in Part II that requires action if selenium concentrations begin to exceed the WLA.

Monitoring will be added for Stations 802 and 902. Station 802 is upstream from the unnamed tributary carrying Outfalls 001 and 002 in Moore Run, near where the tributary flows into Moore Run; station 902 is downstream. The following parameters will be monitored: Chlorophyll, A, Pheophytin, A, dissolved oxygen, water temperature, pH, and ammonia-nitrogen. Monitoring at this station is being required to determine the nutrient conditions downstream from Navistar's discharge.

This permit renewal is proposed for a term of a little over **3 years**, expiring on **April 30, 2017**. This schedule will allow the Navistar permit to be on a similar schedule with the other facilities within the same watershed basin.

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Procedures for Participation in the Formulation of Final Determinations

The draft action shall be issued as a final action unless the Director revises the draft after consideration of the record of a public meeting or written comments, or upon disapproval by the Administrator of the U.S. Environmental Protection Agency.

Within thirty days of the date of the Public Notice, any person may request or petition for a public meeting for presentation of evidence, statements or opinions. The purpose of the public meeting is to obtain additional evidence. Statements concerning the issues raised by the party requesting the meeting are invited. Evidence may be presented by the applicant, the state, and other parties, and following presentation of such evidence other interested persons may present testimony of facts or statements of opinion.

Requests for public meetings shall be in writing and shall state the action of the Director objected to, the questions to be considered, and the reasons the action is contested. Such requests should be addressed to:

Legal Records Section
Ohio Environmental Protection Agency
P.O. Box 1049
Columbus, Ohio 43216-1049

Interested persons are invited to submit written comments upon the discharge permit. Comments should be submitted in person or by mail no later than 30 days after the date of this Public Notice. Deliver or mail all comments to:

Ohio Environmental Protection Agency
Attention: Division of Surface Water
Permits and Compliance Section
P.O. Box 1049
Columbus, Ohio 43216-1049

The OEPA permit number and Public Notice numbers should appear on each page of any submitted comments. All comments received no later than 30 days after the date of the Public Notice will be considered.

Citizens may conduct file reviews regarding specific companies or sites. Appointments are necessary to conduct file reviews, because requests to review files have increased dramatically in recent years. The first 250 pages copied are free. For requests to copy more than 250 pages, there is a five-cent charge for each page copied. Payment is required by check or money order, made payable to Treasurer State of Ohio.

For additional information about this fact sheet or draft permit, contact Eric Nygaard by phone at (614) 644-2024 or by email at eric.nygaard@epa.ohio.gov or Matt Walbridge by phone at (937) 285-6095 or by email at matt.walbridge@epa.ohio.gov.

Location of Discharge/Receiving Water Use Classification

Navistar, Inc. discharges to an unnamed tributary of Moore Run between River Miles (RMs) 0.19 and 0.30. The tributary enters Moore Run at River Mile (RM) 3.26. The approximate location of the facility is shown in Figure 1.

The unnamed tributary of Moore Run is not designated in the Ohio Water Quality Standards. Undesignated waters are required to meet water quality standards associated with Warmwater Habitat and Secondary Contact Recreation uses.

This segment of Moore Run is described by Ohio EPA River Code: 14-117, U.S. EPA River Reach #: 05080001-006, County: Clark, Ecoregion: Eastern Corn Belt Plains. Moore Run is designated for the following uses under Ohio's Water Quality Standards (OAC 3745-1-21): Warmwater Habitat (WWH), Agricultural Water Supply (AWS), Industrial Water Supply (IWS), and Primary Contact Recreation (PCR).

Use designations define the goals and expectations of a waterbody. These goals are set for aquatic life protection, recreation use and water supply use, and are defined in the Ohio WQS (OAC 3745-1-07). The use designations for individual waterbodies are listed in rules -08 through -32 of the Ohio WQS. Once the goals are set, numeric water quality standards are developed to protect these uses. Different uses have different water quality criteria.

Use designations for aquatic life protection include habitats for coldwater fish and macroinvertebrates, warmwater aquatic life and waters with exceptional communities of warmwater organisms. These uses all meet the goals of the federal Clean Water Act. Ohio WQS also include aquatic life use designations for waterbodies which can not meet the Clean

Water Act goals because of human-caused conditions that can not be remedied without causing fundamental changes to land use and widespread economic impact. The dredging and clearing of some small streams to support agricultural or urban drainage is the most common of these conditions. These streams are given Modified Warmwater or Limited Resource Water designations.

Recreation uses are defined by the depth of the waterbody and the potential for wading or swimming. Uses are defined for bathing waters, swimming/canoeing (Primary Contact) and wading only (Secondary Contact - generally waters too shallow for swimming or canoeing).

Water supply uses are defined by the actual or potential use of the waterbody. Public Water Supply designations apply near existing water intakes so that waters are safe to drink with standard treatment. Most other waters are designated for agricultural and industrial water supply.

Facility Description

Navistar, Inc. manufactures medium duty trucks chassis. In the past five years, the facility has produced an average of 22,040 trucks per year. Some of the process operations include stamping, welding, cutting, assembling, coating (zinc phosphating), electro depositing (e-coat), and painting.

The process operations performed at this facility are classified by the Standard Industrial Classification (SIC) code 3711, "Motor Vehicles and Passenger Car Bodies." Discharges resulting from process operations are subject to Federal Effluent Guideline Limitations, contained in Chapter 40 of the Code of Federal Regulations, Part 433, "Metal Finishing Point Source Category."

Process wastewater flows to equalization tanks. All of the process wastewater flows are combined in reaction tanks where the pH is adjusted, coagulants and flocculants are added, settling occurs, and industrial sludge is dewatered by a filter press.

Treated process wastewater then combines with sanitary wastewater and is pumped to the biological treatment system consisting of screening, oxidation ditches, and clarifiers. The combined wastewater is pumped through a sand filter and is disinfected through a UV system (chlorination option still exists) before being discharged. The sludge that is generated in the oxidation ditch is sent to aerated sludge holding tanks where the sludge undergoes thickening prior to being hauled to a landfill where it undergoes solidification and disposal.

Description of Existing Discharge

Navistar discharges to an unnamed tributary of Moore Run via two outfalls (001 and 002). Outfall 001 consists of treated sanitary and process wastewater. Outfall 002 discharges a combination mainly comprised of noncontact cooling water and stormwater. The discharge of non-contact cooling water, stormwater and fire pump test water is de-chlorinated prior to discharging using sulfur dioxide gas as this water includes potable water obtained from the city and contains chlorine.

While Outfall 001 has been listed as discharging to the unnamed tributary to Moore Run, past Ohio EPA wasteload allocations and limits have been written assuming a direct discharge to Moore Run. This draft permit corrects that incongruity: The compliance schedule allows two options – a continued discharge to the unnamed tributary (through current Outfall 001), or moving the discharge point directly to Moore Run (to be called Outfall 021). Discharge limits are slightly different for each option, and both options are presented in the fact sheet.

Consistent with 40 CFR 122.45(h), an internal station 601 is established to apply Federal Guidelines for metal finishing point sources (40 CFR 433) and require monitoring. Effluent guideline limits are applied at this outfall to ensure that these treatment standards are met prior to combining with other waste streams. If monitoring was not done at this location, it would not be possible to verify compliance with these standards due to dilution. Federal rules at 40 CFR 125.3(f) prohibit attaining these standards by dilution.

Downstream station 902 monitoring requirements are being added to the permit to gather nutrient data downstream from Outfalls 001 and 002 in Moore Run. The exact location will be decided upon during the public notice period. The following parameters will be monitored only during the summer: Chlorophyll, A, Pheophytin, A, dissolved oxygen, water temperature, pH, and ammonia-nitrogen.

Tables 1 and 2 present chemical specific data compiled from the NPDES renewal application and data collected by the Ohio EPA.

Table 3 presents a summary of unaltered Discharge Monitoring Report (DMR) data for outfalls 001, 002, 586, 601, 801, and 901. Data are presented for the period August 2006 to August 2011, and current permit limits are provided for comparison.

Tables 4 and 5 summarize the results of acute and chronic whole effluent toxicity tests of the final effluent.

Table 6 summarizes the chemical specific data for outfalls 001 by presenting the average and maximum Projected Effluent Quality (PEQ) values.

Table 7 summarizes the pretreat and prime line cleanout events.

Table 8 summarizes the individual process flows going to Outfall 601.

Table 9 summarizes flow rates for Outfalls 001, 002, and 601.

Assessment of Impact on Receiving Waters

An assessment of the impact of a permitted point source on the immediate receiving waters includes an evaluation of the available chemical/physical, biological, and habitat data which have been collected by Ohio EPA pursuant to the Five-Year Basin Approach for Monitoring and NPDES Reissuance. Other data may be used provided it was collected in accordance with Ohio EPA methods and protocols as specified by the Ohio Water Quality Standards and Ohio

EPA guidance documents. Other information which may be evaluated includes, but is not limited to: NPDES permittee self-monitoring data; effluent and mixing zone bioassays conducted by Ohio EPA, the permittee, or U.S. EPA.

In evaluating this data, Ohio EPA attempts to link environmental stresses and measured pollutant exposure to the health and diversity of biological communities. Stresses can include pollutant discharges (permitted and unpermitted), land use effects, and habitat modifications. Indicators of exposure to these stresses include whole effluent toxicity tests, fish tissue chemical data, and fish health biomarkers (for example, fish blood tests).

Use attainment is a term which describes the degree to which environmental indicators are either above or below criteria specified by the Ohio Water Quality Standards (WQS; Ohio Administrative Code 3745-1). Assessing use attainment status for aquatic life uses primarily relies on the Ohio EPA biological criteria (OAC 3745-1-07; Table 7-15). These criteria apply to rivers and streams outside of mixing zones. Numerical biological criteria are based on measuring several characteristics of the fish and macroinvertebrate communities; these characteristics are combined into multimetric biological indices including the Index of Biotic Integrity (IBI) and modified Index of Well-Being (MIwb), which indicate the response of the fish community, and the Invertebrate Community Index (ICI), which indicates the response of the macroinvertebrate community. Numerical criteria are broken down by ecoregion, use designation, and stream or river size. Ohio has five ecoregions defined by common topography, land use, potential vegetation and soil type.

Three attainment status results are possible at each sampling location -full, partial, or non-attainment. Full attainment means that all of the applicable indices meet the biocriteria. Partial attainment means that one or more of the applicable indices meet the biocriteria or one of the organism groups reflects poor or very poor performance. An aquatic life use attainment table (see Table 6) is constructed based on the sampling results and is arranged from upstream to downstream and includes the sampling locations indicated by river mile, the applicable biological indices, the use attainment status (i.e., full, partial, or non), the Qualitative Habitat Evaluation Index (QHEI), and comments and observations for each sampling location.

The assessment of impact on receiving waters comes from the 2009 Mad River TMDL Report. According to the TMDL, the Mad River watershed is impaired by fecal coliform bacteria, as well as from nutrient and organic enrichment resulting from agricultural activities, urban runoff, and wastewater treatment plants (including Navistar). Channelization in the area has also caused habitat alteration, leading to the degradation of several streams in the watershed.

Navistar Outfall 001 discharges to an unnamed tributary of Moore Run; the tributary enters Moore Run at River Mile 3.26. This is upstream from a site where data was collected and analyzed for the TMDL report. At this site, there was a "silty muck substrate and thick growths of aquatic macrophytes. EPA personnel noted a petroleum odor and an oily sheen on the water surface. The fish community marginally met ecoregional expectations but the macroinvertebrate community was in only fair condition. Low dissolved oxygen readings and significant sediment contamination were documented" (TMDL, Page 41). Navistar was noted in the report as a potential source of these pollutants.

The TMDL states that the impairment at this site was likely due to habitat impairment, high phosphorus levels and other pollutants in Navistar's effluent. No phosphorus limits were given in the TMDL because the facility was beginning a 12-month study to identify sources of phosphorus and how to reduce phosphorus levels in the final discharge. The study did not result in any changes in manufacturing operations contributing phosphorus nor any significant reduction in phosphorus discharges from the plant. However, because the stream impacts cannot be linked to phosphorus alone, Ohio EPA cannot say that the discharge has the reasonable potential to contribute to exceedances of narrative WQS related to nutrients.

The permit addresses other pollutants numerically, addresses the highest-concentration sources of phosphorus through management strategies (including no discharge of certain wastestreams), and includes data collection designed specifically to assess the effect of nutrients on the receiving waters so that when other sources of impact are removed, reasonable potential can be accurately assessed.

The complete TMDL for the Mad River can be found at the following webpage:
http://www.epa.ohio.gov/portals/35/tmdl/MadRiverTMDL_final_dec09.pdf

Development of Water-Quality-Based Effluent Limits

Determining appropriate effluent concentrations is a multiple-step process in which parameters are identified as likely to be discharged by a facility, evaluated with respect to Ohio water quality criteria, and examined to determine the likelihood that the existing effluent could violate the calculated limits.

Parameter Selection Effluent data for Navistar, Inc. was used to determine what parameters should undergo wasteload allocation. The parameters discharged are identified by the data available to the Ohio EPA - Discharge Monitoring Report (DMR) data submitted by the permittee, compliance sampling data collected by Ohio EPA, and any other data submitted by the permittee, such as priority pollutant scans required by the NPDES application or by pretreatment, or other special conditions in the NPDES permit. The sources of effluent data used in this evaluation are as follows:

Self-monitoring data (DMR)	January 2008 to November 2013
NPDES Application data	2011
OEPA compliance sampling data	April 2009, June 2009, July 2011, September 2012, September 2013

Effluent data were examined and no values were removed from PEQ calculations as outliers.

This data is evaluated statistically, and Projected Effluent Quality (PEQ) values are calculated for each pollutant. Average PEQ (PEQ_{avg}) values represent the 95^{th} percentile of monthly average data, and maximum PEQ (PEQ_{max}) values represent the 95^{th} percentile of all data points. The PEQ_{avg} and PEQ_{max} values are presented in Table 10.

The PEQ values are used according to Ohio rules to compare to applicable water quality standards (WQS) and allowable wasteload allocation (WLA) values for each pollutant evaluated. Initially, PEQ values are compared to the applicable average and maximum WQS. If both PEQ values are less than 25 percent of the applicable WQS, the pollutant does not have the reasonable potential to cause or contribute to exceedances of WQS, and no wasteload allocation is done for that parameter. If either PEQ_{avg} or PEQ_{max} is greater than 25 percent of the applicable WQS, a wasteload allocation is conducted to determine whether the parameter exhibits reasonable potential and needs to have a limit or if monitoring is required. See Table 39 for a summary of the screening results.

Wasteload Allocation

For those parameters that require a WLA, the results are based on the uses assigned to the receiving waterbody in OAC 3745-1. Dischargers are allocated pollutant loadings/concentrations based on the Ohio Water Quality Standards (OAC 3745-1). Most pollutants are allocated by a mass-balance method because they do not degrade in the receiving water. Wasteload allocations using this method are done using the following general equation: Discharger WLA = (downstream flow x WQS) - (upstream flow x background concentration). Discharger WLAs are divided by the discharge flow so that the allocations are expressed as concentrations.

The applicable waterbody uses for this facility's discharge and the associated stream design flows are as follows:

Aquatic life (WWH)		
Toxics (metals, organics, etc.)	Average	Annual 7Q10
	Maximum	Annual 1Q10
Ammonia	Average	Summer 30Q10
		Winter 30Q10
Agricultural Water Supply		Harmonic mean flow
Human Health (nondrinking)		Harmonic mean flow

Allocations are developed using a percentage of stream design flow as specified in Table 12, and allocations cannot exceed the Inside Mixing Zone Maximum criteria. Wasteload allocations were conducted assuming: 1) that the discharge continues to be released to the unnamed tributary, and 2) that the discharge is re-routed to Moore Run. Previous WLAs for Navistar were done only for Moore Run.

In November 2010, the use of mixing zones to determine the waste load allocation for bioaccumulative chemicals of concern (BCCs) will no longer be allowed. This means that limits for BCCs after November 2010 must meet water quality standards with no allowances for dilution. Since mercury is considered a BCC, discharges must comply with water quality standards at that time. In order to obtain mercury effluent data which can be compared to the water quality standards, the permittee must use a low level method for mercury sampling and analysis.

The data used in the WLA are listed in Tables 1, 2, and 3. The wasteload allocation results to maintain all applicable criteria are presented in Tables 11 and 12. The current ammonia limits

have been evaluated using the wasteload allocation procedures and are protective of water quality standards.

Whole Effluent Toxicity WLA
Whole effluent toxicity (WET) is the total toxic effect of an effluent on aquatic life measured directly with a toxicity test. Acute WET measures short term effects of the effluent while chronic WET measures longer term and potentially more subtle effects of the effluent.

Water quality standards for WET are expressed in Ohio's narrative "free from" WQS rule [OAC 3745-1-04(D)]. These "free froms" are translated into toxicity units (TUs) by the associated WQS Implementation Rule (OAC 3745-2-09). Wasteload allocations can then be calculated using TUs as if they were water quality criteria.

The wasteload allocation calculations for WET are similar to those for aquatic life criteria - using the chronic toxicity unit (TU_c) and 7Q10 flow for the average and the acute toxicity unit (TU_a) and 1Q10 flow for the maximum. These values are the levels of effluent toxicity that should not cause instream toxicity during critical low-flow conditions. For a discharge to the unnamed tributary of Moore Run, the wasteload allocation values are 0.3 TUa and 1.2 TUc; for a discharge to Moore Run, the wasteload allocation values are 1.0 TU_a and 11.7 TU_c.

The chronic toxicity unit (TU_c) is defined as 100 divided by the IC_{25}:

$$TU_c = 100/IC_{25}$$

This equation applies outside the mixing zone for warmwater, modified warmwater, exceptional warmwater, coldwater, and seasonal salmonid use designations except when the following equation is more restrictive (Ceriodaphnia dubia only):

$$TU_c = 100/\text{geometric mean of NOEC and LOEC}$$

The acute toxicity unit (TU_a) is defined as 100 divided by the LC_{50} for the most sensitive test species:

$$TU_a = 100/LC_{50}$$

This equation applies outside the mixing zone for warmwater, modified warmwater, exceptional warmwater, coldwater, and seasonal salmonid use designations.

When the acute WLA is less than 1.0 TU_a, it may be defined as:

Dilution Ratio (downstream flow to discharger flow)	Allowable Effluent Toxicity (percent effects in 100% effluent)
up to 2 to 1	30
greater than 2 to 1 but less than 2.7 to 1	40
2.7 to 1 to 3.3 to 1	50

The acute WLA is 30 percent mortality in 100 percent effluent based on the dilution ratio of less than 1 to 1 in the unnamed tributary.

Reasonable Potential/ Effluent Limits/Hazard Management Decisions

After appropriate effluent limits are calculated, the reasonable potential of the discharger to violate the water quality standards must be determined. Each parameter is examined and placed in a defined "group". Parameters that do not have a water quality standard or do not require a wasteload allocation based on the initial screening are assigned to either group 1 or 2. For the allocated parameters, the preliminary effluent limits (PEL) based on the most restrictive average and maximum wasteload allocations are selected from Table 13. The average PEL (PEL_{avg}) is compared to the average PEQ (PEQ_{avg}) from Table 34, and the PEL_{max} is compared to the PEQ_{max}. Based on the calculated percentage of the allocated value [($PEQ_{avg} \div PEL_{avg}$) X 100, or ($PEQ_{max} \div PEL_{max}$) X 100)], the parameters are assigned to group 3, 4, or 5. The groupings are listed in Tables 14A and 14B. The two tables are to present the limits for Outfall 001 and 021; the final effective limits depend on which compliance schedule option the company selects.

The final effluent limits are determined by evaluating the groupings in conjunction with other applicable rules and regulations. Tables 15A and 15B present the final effluent limits and monitoring requirements proposed for Navistar Outfall 001 and Outfall 021 and the basis for their recommendation. Loadings were determined by using the 95th percentile average monthly flow at Station 001. Detailed explanation of final effluent limits is given below.

Limits and Monitoring Common to Outfalls 001 and 021:

Water Temperature and Flow Rate
Water temperature and flow rate monitoring requirements are specified to assist in the evaluation of effluent quality and treatment plant performance.

Dissolved Oxygen, Total Suspended Solids, and 5-Day Carbonaceous Biochemical Oxygen Demand
The limits proposed for dissolved oxygen, total suspended solids and 5-day carbonaceous biochemical oxygen demand ($CBOD_5$) are all based on plant design criteria. These limits are protective of water quality standards.

Phosphorus
Phosphorus monitoring would be continued at the same frequency as in the previous permit. See the compliance schedule section for control measures on phosphorus.

E. coli
Due to new water quality standards, *E. coli* limits and monitoring requirements will replace the limits and monitoring requirements for fecal coliform. Fecal coliform will no longer be monitored, and there will no longer be limits for this parameter. *E. coli* will be monitored at the same frequency that fecal coliform was monitored. No compliance schedule is proposed for meeting *E. coli* limits.

Oil and Grease and pH
Limits proposed for oil and grease and pH are based on Water Quality Standards (OAC 3745-1-07). Monitoring frequency will remain the same as in the previous permit.

Mercury
The Ohio EPA risk assessment (Table 14) places mercury in group 5. This placement as well as the data in Tables 1, 2, and 3 indicate that the reasonable potential to exceed WQS exists and limits are necessary to protect water quality. For these parameters PEQ is greater than 100 percent of the wasteload allocation. Pollutants that meet this requirement must have permit limits under OAC Rule 3745-33-07(A)(1). Navistar did not apply for a mercury variance. They believe they have eliminated the significant sources of mercury throughout the plant through the implementation of a pollutant minimization program (PMP). Therefore, the thirty day average limit and the daily maximum limit for mercury are based on the wasteload allocation values. Monitoring will be at the same frequency as in the last permit.

Copper
The Ohio EPA risk assessment (Table 14) places copper in group 4. This placement as well as the data in Tables 1, 2, and 3 support that this parameter does not have the reasonable potential to contribute to WQS exceedances, and limits are not necessary to protect water quality. Monitoring for Group 4 pollutants (where PEQ exceeds 50 percent of the WLA) is required by OAC Rule 3745-33-07(A)(2).

Arsenic, Barium, Cadmium, Total Recoverable Chromium, Hexavalent Chromium, Diethyl Phthalate, Nickel, Nitrate-N + Nitrite-N, Selenium, Zinc, Iron, and Total Filterable Residue
Ohio EPA risk assessment (Table 14) places arsenic, barium, cadmium, total recoverable chromium, hexavalent chromium, diethyl phthalate, nickel, nitrate-N + nitrite-N, selenium, zinc, iron, and total filterable residue in group 3. This placement as well as the data in Tables 1, 2, and 3 support that these parameters do not have the reasonable potential to contribute to WQS exceedances, and limits are not necessary to protect water quality. Monitoring at a low frequency for cadmium, total recoverable chromium, hexavalent chromium, nickel, and zinc is proposed to document that these pollutants continue to remain at low levels. Monitoring for total filterable residue has been added to the permit because of high total filterable residue values in Ohio EPA data. Monitoring will help to evaluate whether permit limits will be necessary in the future. No monitoring is proposed for arsenic, barium, diethyl phthalate, nitrate-N + nitrite-N and iron.

Heptachlor Epoxide
There will no longer be monitoring for heptachlor epoxide. Heptachlor epoxide was placed in Group 2, which demonstrates that there is no reasonable potential to exceed water quality standards.

Lead and Cyanide
The Ohio EPA risk assessment (Table 14) places lead and cyanide in Group 2 because they do not have the reasonable potential to exceed water quality standards. They will be monitored based on requirements in the best available control technology currently available in 40 CFR Part 433.14. Effluent monitoring is required for lead and cyanide in a metal finishing point source, so although there were no monitoring requirements in the previous permit, monitoring will be required in this permit.

Outfall 001 Limits and Monitoring:

Ammonia-nitrogen, Total Filterable Residue and Silver
The Ohio EPA risk assessment (Table 14B) places these pollutants in group 5. This placement as well as the data in Tables 1, 2, and 3 indicate that the reasonable potential to exceed WQS exists and limits are necessary to protect water quality. For these parameters PEQ is greater than 100 percent of the wasteload allocation. Pollutants that meet this requirement must have permit limits under OAC Rule 3745-33-07(A)(1).

Selenium
The Ohio EPA risk assessment (Table 14B) places selenium in group 5, which recommends limits to protect water quality. Using the discretion allowed the Director under OAC 3745-33-07(A)(5), we are proposing monitoring, rather than limits, for these pollutants. The PEQ values calculated for this outfall (Tables 1 and 10) may not be representative of its actual levels in the plant effluent they were based on three data points. The purpose of the proposed monitoring is to collect additional data on the frequency of occurrence and variability of these pollutants in the plant's effluent.

In addition, the permit contains a tracking requirement for selenium that specifies reductions in pollutant concentrations if effluent concentrations exceed the WLA. The tracking/reduction requirements are included in Part II Item P. of the draft permit.

Nickel
Ohio EPA risk assessment (Table 14B) places nickel in group 4. This placement as well as the data in Tables 1, 3 and 10 supports that this parameter does not have the reasonable potential to contribute to WQS exceedances, and limits are not necessary to protect water quality. Monitoring for Group 4 pollutants (where PEQ exceeds 50 percent of the WLA) is required by OAC Rule 3745-33-07(A)(2).

Outfall 021 Limits and Monitoring:

Ammonia-nitrogen
Current permit limits for ammonia-N would continue for this alternative. The current limits meet WQS in Moore Run.

Total Filterable Residue
Total filterable residue testing will be added to the permit to assist in the evaluation of effluent quality. Monitoring will be once per month.

Silver

The Ohio EPA risk assessment (Table 14A) places silver in group 5. This placement as well as the data in Tables 1, 2, and 3 indicate that the reasonable potential to exceed WQS exists and limits are necessary to protect water quality. For these parameters PEQ is greater than 100 percent of the wasteload allocation. Pollutants that meet this requirement must have permit limits under OAC Rule 3745-33-07(A)(1). The daily maximum limit for silver is based on the wasteload allocation value. Although the current wasteload allocation would allow a slightly higher monthly average limit for silver, anti-backsliding provisions in the Ohio Administrative Code prevent the imposition of less stringent limits than those in the existing permit unless specific conditions have been satisfied. In the case of Navistar, Inc., none of those conditions have been satisfied, so the existing limits are proposed to continue.

Whole Effluent Toxicity Reasonable Potential

Based on evaluating the whole effluent toxicity data presented in Tables 4 and 5, and other pertinent data under the provisions of OAC 3745-33-07(B), Outfalls 001/021 at Navistar are placed in Category 1 with respect to whole effluent toxicity. Fathead minnows did not show any acute effects from toxicity. There were no results on the chronic toxicity of fathead minnows. There was one acute toxicity value for Ceriodaphnia dubia. The toxicity was extremely high, caused by the boilout event during shut-down in July in which the wastewater did not receive adequate treatment.

There were nine chronic toxicity tests, one of which was above the wasteload allocation value.

Because the toxicity exceedances and the high level of toxicity found during the boilout event, there is reasonable potential for toxicity. Therefore, limits and monitoring for acute and chronic toxicity are proposed. The permit contains a compliance schedule for meeting chronic and acute toxicity limits.

Compliance Schedules

The permit contains two compliance schedules – One to meet final effluent limits for Outfalls 001/021, and a second to cease discharge of Stage 5 cleanout wastewaters.

The limits schedule has two options: (1) move the discharge point directly to Moore Run (and meet Outfall 021 limits), or (2) meet the more restrictive limits and continue discharging to the unnamed tributary of Moore Run. The schedule essentially requires Navistar to select one of these alternatives within three months of permit issuance.

The Moore Run discharge alternative allows 12 months for the company to construct a pipeline to Moore Run and meet limits for toxicity. If the company decides to continue discharging to the unnamed tributary, they would have 36 months to meet the new limits for ammonia-N, total dissolved solids, silver and chronic toxicity. Ohio EPA has allowed a longer schedule for this alternative because the Agency believes that

additional treatment or other controls will be needed to meet the limits for this alternative.

The second schedule requires Navistar to cease discharging its Stage 5 boilout wastewaters, and develop new disposal options for this wastewater. This schedule is likely needed to meet toxicity limits. It would also reduce a significant phosphorus loading from the facility during these discharge events.

Ohio EPA's sampling of the effluent during one of these events (July 2011) showed that the effluent failed an acute toxicity test by a wide margin. The Agency believes that this failure was due to boilout wastewater being inadequately treated by the wastewater treatment plant. This occurred despite extensive flow equalization of the boilout wastewater and adequate operation of treatment facilities.

Also, the 2009 TMDL for the Mad River listed Navistar, Inc. as a source of high phosphorus levels in Moore Run. High levels of phosphorus in Moore Run have led to nutrient enrichment and impairment of the designated use.

Ohio EPA upstream and downstream water quality data for phosphorus in Moore Run shows a large increase in phosphorus levels following the discharge to Moore Run. Upstream from the discharge to Moore Run, the median phosphorus concentration was 0.1027 mg/l. Downstream from the discharge to Moore Run, the median phosphorus concentration was 0.4205 mg/l, over 4 times the phosphorus concentration upstream. Navistar is the only major discharger in between the upstream and downstream sites, so the high phosphorus levels are likely to be due to Navistar's effluent. Currently, the target phosphorus level in this segment of Moore Run is 0.08 mg/l. Although this is not a water quality standard, it is a good indicator that the downstream concentration is well above a desirable level.

Based on this information, Ohio EPA believes that significant negative impacts to Moore Run and the unnamed tributary occur at least annually during these events. The treatment system does not appear to be able to handle wastewaters that are this concentrated despite Navistar's efforts to bleed and blend them in over extended periods and using special treatment chemicals. As a result, the Agency believes that this compliance schedule is justified.

Internal Monitoring Station 601

Consistent with 40 CFR 122.45(h), monitoring and limits are proposed at internal station 601. Effluent guideline limits are applied at this outfall to ensure that these treatment standards are met prior to combining with other waste streams. If monitoring was not done at this location, it would not be possible to verify compliance with these standards due to dilution. Federal rules at 40 CFR 125.3(f) prohibit attaining these standards by dilution. The limits are altered from the standards to account for clean flows at Station 601. Limits for Station 601 are given in Table 16.

Sludge
Limits and monitoring requirements proposed for the disposal of sewage sludge by the following management practices are based on OAC 3745-40: land application or removal to sanitary landfill.

Additional monitoring requirements proposed at the final effluent, influent and upstream/downstream stations are included for all facilities in Ohio and vary according to the type and size of the discharge. In addition to permit compliance, this data is used to assist in the evaluation of effluent quality and treatment plant performance and for designing plant improvements and conducting future stream studies.

Other Requirements

Operator Certification
In accordance with rule 3745-7-04 of the Ohio Administrative Code (OAC), the Ohio EPA is re-classifying the treatment works from a Class I to a Class II facility. The reclassification is based on Navistar having a total suspended solids average monthly limit of 12 mg/l and a plant design flow of 0.2 MGD. According to OAC 3745-7-04, treatment works with this limit and with a design flow between 0.15 MGD and 1.0 MGD shall be Class II facilities.

Operator of Record
In December 2006, Ohio Administrative Code rule revisions became effective which affect the requirements for certified operators for sewage collection systems and treatment works regulated under NPDES permits. Part II, Item A of this NPDES permit represents language necessary to implement rule 3745-7-02 of the Ohio Administrative Code (OAC), and requires the permittee to designate one or more operator of record to oversee the technical operation of the treatment works.

Outfall Signage
Because Outfalls 001 and 002 are located on private property, no outfall sign will be required at these locations. Signage at outfalls is required pursuant to Ohio Administrative Code 3745-33-08(A), but is not required "at outfalls that are not accessible to the public by land or by recreational use of the water body."

However, if Navistar elects to start discharging to Moore Run through new outfall 021, then outfall signage will be required.

Stormwater General Permit
Navistar, Inc. currently has coverage under the Industrial Storm Water General Permit; however, the company has agreed to include their storm water discharges in this individual permit. As a result, we have added Parts IV, V and VI to this permit to address storm water controls.

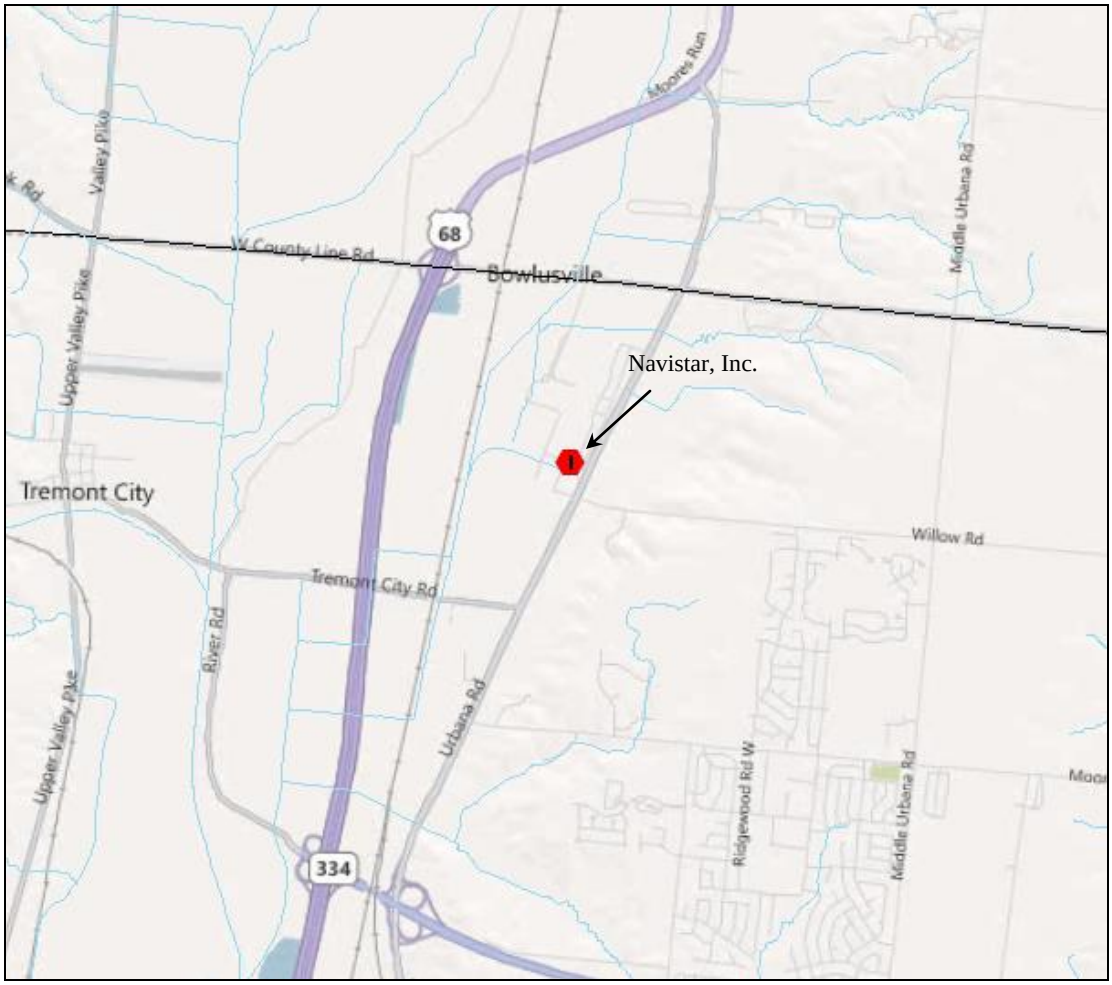

Figure 1. Approximate Location of Navistar, Inc.

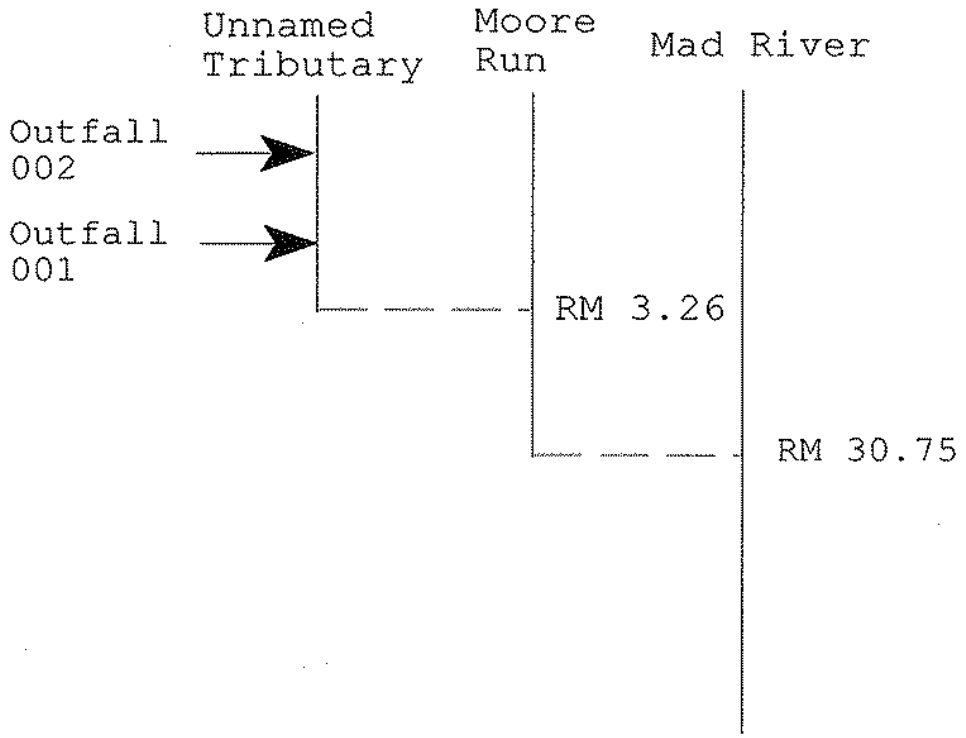

Figure 2. Navistar, Inc. Study Area

Table 1. Effluent Characterization for Outfall 001 Based on OEPA Data and Application Form 2C

Summary of analytical results for Navistar WWTP outfall 1IN00022001. All values are in : ug/l unless otherwise indicated. 2C = Data from application form 2C; OEPA = data from analyses by Ohio EPA; ND = below detection (detection limit); NA = not analyzed. Decision Criteria: PEQ_{avg} = monthly averages; PEQ_{max} = daily maximum analytical results.; S=Summer; W=Winter

PARAMETER	OEPA 4/6/2009	OEPA 6/8/2009	OEPA 7/18/2011	OEPA 09/17/12	OEPA 09/10/13	2C
2011	PEQ_{avg}		PEQ_{max}			
Ammonia (mg/l)	0.094	0.144	<0.050	<0.050	<0.050	
DMRs	0.38264 (S)		0.66545 (S)			
Phosphorus (mg/l)	9.5	3.65	489	29.4	8.65	
DMRs	29.919		41.908			
Nickel	160	70.3	299	177	101	
DMRs	123.34		186.73			
Zinc	139	63	57	47	53	
DMRs	123.77		202.61			
Chromium	70.8	<2.0	<2.0	9.1	7.6	
DMRs	23.343		33.007			
Copper	9.2	5.2	15.6	8.3	5.2	
DMRs	7.2407		10.87			
Sulfate (mg/l)	NA	NA	NA	NA	NA	
215	973.09		1333			
Iron	701	349	177	548	246	96
Molybdenum	NA	NA	NA	NA	NA	77
Phenol (mg/l)	<2.1	<2.1	<2.1	<2.1	<2.1	70
Arsenic	2.3	<2.0	10.2	2.3	3.0	ND
Selenium	5.5	4.9	9.8	10.5	9.2	ND
Manganese	22	13	43	15	38	ND
Strontium	139	151	70	60	174	NA
Chloride (mg/l)	84	89.6	341	324	367	NA
Nitrate-N + Nitrite-N (mg/l)	12.6	7.12	10.8	6.12	12.8	NA
TKN (mg/l)	2.23	1.86	7.65	2.64	1.79	
14.6	16.7535		22.95			
Barium	28	33	<15	<15	<15	ND
Phenolics	<10	22.7	NA	11.5	<10	NA
Diethyl phthalate	<5.2	15	<5.2	<5.3	<5.3	ND
Dissolved solids (mg/l)	734	528	3330	1070	1060	NA

Table 2. Effluent Characterization for Outfall 002 Based on Application Form 2C

Summary of analytical results for the Navistar WWTP outfall 1IN00022002. All values are in: ug/l unless otherwise indicated. 2C = Data from application form 2C; ND = below detection (detection limit); NA = not analyzed. Decision Criteria: PEQ_{avg} = monthly averages; PEQ_{max} = daily maximum analytical results.

PARAMETER	2C 2011	PEQ_{avg}	PEQ_{max}
Zinc	33	123.77	202.61
Copper	9	7.2407	10.87

Table 3. Effluent Characterization Based on Self-Monitoring Data

Summary of current permit limits and unaltered monthly operating report (MOR) data for the Navistar WWTP outfalls 001, 002 and 601. All values are based on annual records unless otherwise indicated. N = Number of Analyses. * = For pH, 5th percentile shown in place of 50th percentile; ** = For dissolved oxygen, 5th percentile shown in place of 95th percentile; A = 7 day average. Decision Criteria: PEQ_{avg} = monthly average; PEQ_{max} = daily maximum analytical results.

			Current Permit Limits			Percentiles		
Parameter	Season	Units	30 day	Daily	#	50th	95th	Data

					Obs.			
Outfall 001								
Water Temperature	Annual	C		Monitor	894	16	25	6-
Dissolved Oxygen	Summer	mg/l	--	5.0 min.	143	8.4	9.59	6.63
Dissolved Oxygen	Winter	mg/l	--	5.0 min.	141	10.2	11.8	7.8-
pH	Annual	S.U.	6.5-9.0		290	7.9	8.26	6.5
Total Suspended Solids	Annual	mg/l	12	18[A]	313	6	14	0-
Oil and Grease, Hexane Extr Method	Annual	mg/l	--	10	284	0	3	0
Nitrogen, Ammonia (NH3)	Summer	mg/l	2.5	3.75[A]	289	0.1	0.48	0-5
Nitrogen, Ammonia (NH3)	Winter	mg/l	--	7.8[A]	142	0.1	1.5	0-6
Phosphorus, Total (P)	Annual	mg/l		Monitor	289	4.5	46.6	0.11
Chromium, Dissolved (Cr)	Annual	ug/l		Monitor	1	0	0	0
Nickel, Total Recoverable	Annual	ug/l		Monitor	570	84	170	0-7
Silver, Total Recoverable	Annual	ug/l	12	35	570	0	0	0-
Zinc, Total Recoverable	Annual	ug/l		Monitor	570	71	178	0-5
Cadmium, Total Recoverable	Annual	ug/l	--	43	115	0	0	0
Chromium, Total Recoverable	Annual	ug/l		Monitor	115	0	25	0-
Copper, Total Recoverable	Annual	ug/l		Monitor	115	0	9.3	0-
Chromium, Dissolved Hexavalent	Annual	ug/l	--	--	20	0	2	0
Fecal Coliform	Annual	#/100 ml	1000	2000[A]	143	30	1380	0-4
Heptachlor Epoxide	Annual	ug/l		Monitor	20	0	0	0
Flow Rate	Annual	MGD		Monitor	2124	0.113	0.209	0-0
Mercury, Total (Low Level)	Annual	ng/l	32	--	71	4.5	35.6	0-9
Chronic Toxicity, Ceriodaphnia dubia	Annual	TUc		Monitor	8	1.55	11.9	0-
CBOD 5 day	Summer	mg/l	12	18[A]	145	2.1	12.8	0-
CBOD 5 day	Winter	mg/l	12	18[A]	144	3	21.9	0-5
Outfall 002								
Water Temperature	Annual	C	28	29	987	18	23.8	11
pH	Annual	S.U.	6.5-9.0		285	7.3	7.56	6.6
Oil and Grease, Total	Annual	mg/l	--	10	284	0	2.77	0
Flow, Peak Rate	Annual	MGD		Monitor	95	0.078	0.335	0.052
Flow Rate	Annual	MGD		Monitor	2012	0.073	0.36	0.0
Chlorine, Total Residual	Annual	mg/l	--	0.019	222	0	0	0
Outfall 601								
pH	Annual	S.U.		Monitor	145	9.3	10.5	6.7-

Total Suspended Solids	Annual	mg/l	31	60	143	10	27.9	0-
Oil and Grease, Total	Annual	mg/l	26	52	141	0	15	0-
Cyanide, Total	Annual	mg/l	0.60	1.11	71	0	0.04	0-
Cadmium, Total (Cd)	Annual	ug/l	239	635	142	0	0	0-1
Chromium, Total (Cr)	Annual	ug/l	1575	2551	142	0	23.9	0-
Copper, Total (Cu)	Annual	ug/l	1906	3112	142	0	22	0-
Lead, Total (Pb)	Annual	ug/l	396	635	91	0	16	0-
Nickel, Total (Ni)	Annual	ug/l	2192	3665	142	159	401	23-
Silver, Total (Ag)	Annual	ug/l	221	396	142	0	0	0-
Zinc, Total (Zn)	Annual	ug/l	1363	2403	142	95	448	30-
Flow Rate	Annual	MGD	Monitor		2128	0.0376	0.0977	0-0
Total Toxic Organics	Annual	ug/l	--	1961	71	0	127	0-

Table 4. Summary of Acute Toxicity Test Results

Test Date(a)	*Ceriodaphnia dubia 48 hours*						*Fathead Minnows 96 hour*					
	UP[b]	C[c]	LC_{50}[d]	%M[g]	TUa[h]	NF[i]	UP[b]	C[c]	LC_{50}[d]	%M[g]	TUa[h]	NF[i]
4/6/2009 (O)	0	0	<100	90	>1.0	15	0	0	ND	0	ND	0
7/9/2009 (O)	45	0	<100	80	>1.0	50	0	0	ND	5	ND	0
7/20/2011 (O)	0	0	3.9	100	25.6	100	0	0	ND	80	ND	5
02/13/12 (O)	100	0	ND	30	<1.0	75	0	0	>100	0	<1.0	0
09/17/12 (O)	0	5	>100	15	<1.0	0	0	0	>100	0	<1.0	0
09/10/13 (O)	5	5	>100	10	<1.0	0	5	0	>100	0-5	<1.0	0

[a] O = EPA test; E = entity test
[b] UP = upstream control water
[c] C = laboratory water control
[d] LC_{50} = median lethal concentration
[e] EC_{50} = median effects concentration
NT = not tested
[f] %A = percent adversely affected in 100% effluent
[g] %M = percent mortality in 100% effluent
[h] TUa = acute toxicity units
[i] NF = near field sample in Moore Run
ND = not determined
BD = below detection

Table 5. Summary of Chronic Toxicity Test Results

Test Date (a)	*Ceriodaphnia dubia 7-Day*		*Fathead Minnows 7-Day*	
	UP[b]	TU_c[e]	UP[b]	TU_c[e]
12/10/2007 (E)	NT	BD	NT	NT
3/10/2008 (E)	NT	BD	NT	NT
6/4/2008 (E)	NT	BD	NT	NT
8/20/2008 (E)	NT	16	NT	NT
7/13/2009 (E)	NT	1.1	NT	NT
10/13/2009 (E)	NT	3.5	NT	NT
1/14/2010 (E)	NT	2	NT	NT
4/6/2010 (E)	NT	4.2	NT	NT
7/1/2010 (E)	NT	BD	NT	NT

[a]O = EPA test; E = entity test
[b]UP = upstream control water
[c]C = laboratory water control
[d]IC_{25} = inhibition concentration twenty-five
[e]TU_c = chronic toxicity units based on IC_{25}
[f]LOEC = lowest observed effects concentration
[g]NOEC = no observed effects concentration
[h]TU_c = chronic toxicity units based on LOEC and NOEC
[i]FF = far-field effect
[j]STU_c = TUc based on LOEC and NOEC for survival
[k]GTU_c = TUc based on LOEC and NOEC for growth
BD = below detection
NT = not tested

Table 6. Summary of Aquatic Life Use Attainment Status

From the 2009 Mad River TMDL Report: Table A.1 "Aquatic life use attainment status of the Mad River basin, June-October 2003"

Navistar, Inc. discharges at RM 3.26.

Stream River Mile, Invertebrate/ Fish	Attainment Status[a]	IBI	MIwb	ICI / Narrative[b]	QHEI	Drainage Area	Causes[c]	Sources[d]
Moore Run								
4.1 / 4.1	NON	28*	NA	F*	28.5	6.6	Habitat alteration	Agricultural related channelization
2.5 / 2.5	Partial	38[ns]	NA	F*	49.5	9.3	Habitat alteration, ammonia, enrichment / DO, metals, organics	Channelization, industrial point sources, contaminated sediments
0.8 / 0.8	Full	46	NA	MG[ns]	65	18.2		

a Use attainment status based on one organism group is parenthetically expressed.
b Narrative evaluation used in lieu of ICI (E=exceptional, G=good, MG[ns]=marginally good, F=fair, P=poor).
c Causes listed are considered to be a primary influence on water quality, but may not be the only issue leading to impairment. See full TMDL report text for discussion of additional causes that cumulatively led to impairment.
d Sources listed are considered to be a primary influence on water quality, but may not be the only issue leading to impairment. See full TMDL report text for discussion of additional causes that cumulatively led to impairment.
* Significant departure from ecoregion biocriterion.
ns Nonsignificant departure from biocriterion (<4 IBI or ICI units; <0.5 MIwb units).
NA Not applicable. The MIwb is not applicable to headwater sites.

Table 7. Pretreat and Prime Line Cleanout Events

The following is based on information provided by Navistar, Inc.

Stage	Tank Size (gallons)	Type of Stage	Stage Activity	Key Ingredients	Tank Dumps	Boilout
Pretreat Process- Stages 1 through 10						
1	7,300	Spray and overflows	Hot alkaline cleaner- Parker Cleaner and Surfactant 1520 are used to clean ferrous, galvanized, and aluminum surfaces so that the zinc phosphate coating is uniform and dense.	surfactant, potassium hydroxide, tetrasodium phosphate, sodium silicate to clean galvanized steel with some stamping fluid residues.	7,500 gallons every 6 weeks (usually just one side, in combination with stage 2 dump)	Using 1 tote caustic (after tank is dumped) once a year.
2	14,250	Dip and overflows	Hot alkaline cleaner- Parker Cleaner and Surfactant 1520 are used to clean ferrous, galvanized, and aluminum surfaces so that the zinc phosphate coating is uniform and dense.	surfactant, potassium hydroxide, tetrasodium phosphate, sodium silicate	15,000 gallons every 6 weeks (usually just one side)	Using 2 totes caustic (after tank is dumped) once a year.
3	13,300	Dip and overflows	Rinse in city water.	--	15,000 gallons once a week	--
4	2,500	Spray	Fixodine Zinc Treatment- Is used to provide nucleation sites, which promotes the growth of dense crystalline zinc phosphate coatings.	sodium hydroxide, disodium, tetrasodium	--	--
5	14,250	Dip and overflows (stored then sent batch)	Bonderite 958- This treatment converts the metal surface to a non-metallic, fine-crystal, zinc phosphate coating which inhibits corrosion and promotes paint adhesion.	phosphoric acid, zinc, nickel, manganese, sodium nitrite	Overflow stored and sent to dump as needed (very rare- typically once every two years)	Using 7 totes acid (after tank is dumped) once a year
6	13,300	Dip and overflows	Rinse in city water.	--	15,000 gallons once a week	--
7	13,300	-	Tank not in use	--	--	--
8	13,300	--	Tank not in use	--	--	--
9	13,300	Dip	Parcolene 90A Treatment- Used over top of the phosphate coating to increase the corrosion resistance of the coatings.	phosphoric acid	15,000 gallons every 6 weeks (both sides at once for a total of	Using 1-2% by volume hydrogen peroxide solution (after tank is dumped) once a

					30,000 gallons)	year
10	13,300	Dip, Spray, and Overflows	DI Water Treatment	--	30,000 gallons once per week (both lines)	Using 1-2% by volume hydrogen peroxide solution (after tank is dumped) once a year
10-A	14,000	Holding Tank	This is a covered holding tank in which any materials from Stages 1 through 10 can be pumped.	--	--	Using 1-2% by volume hydrogen peroxide solution (after tank is dumped) once a year
E-Coat Process- Stages 11 through 15						
11-A	14,000	Holding Tank	This is a covered holding tank in which any materials from Stages 11 through 15 can be pumped.	--	--	Using 1-2% by volume hydrogen peroxide solution (after tank is dumped) once a year
11	15,000	Dip	E-Coat paint- consists of lead free, reduced HAPS B.A.S.F. resin and DI water. (22% paste and resin, 78% DI water)	glycol ether	--	Using 1-2% by volume hydrogen peroxide solution followed by a mixture of glycol ether solvent and acid (after tank is dumped) once a year
12	4,000	Spray	Rinse following E-Coat- Using a "permeate" solution made from E-Coat paint where the solids have been removed	glycol ether	--	Using 1-2% by volume hydrogen peroxide solution followed by a mixture of glycol ether solvent and acid (after tank is dumped) once a year
13	13,300	Dip	Rinse Step- Virgin permeate is used to remove the thin layer of paint that adheres to the deposited E-Coat film	glycol ether	--	Using 1-2% by volume hydrogen peroxide solution followed by a mixture of glycol ether solvent and acid (after tank is dumped) once a year
14	4,000	Spray and overflows	Rinse process- Rinsed using recirculated DI water, then we virgin DI water	--	As needed- typically 1 to 2 times per month	Using 1-2% by volume hydrogen peroxide solution followed by a mixture of

						glycol ether solvent and acid (after tank is dumped) once a year
15	4,000	Spray	Tank not in use	--	--	--

Table 8. Individual Process Flows to the 601 Station

This table is compiled from information provided by Navistar, Inc. The information provided is typical of process operations. Volumes and frequencies of discharges may vary.

	Frequency	Volume (gallons)	WWTP Receiving Point
Pretreat Overflows			
Pretreat Stages 3, 6, 10, and overspray from Pretreat Stage 4	Daily	60,000	EQB
Pretreat Stage 1	1/5-6 weeks	minimal	EQB
Periodic			
Pretreat Stage 1 (North and South)	1/5-6 weeks	15,000	Isolate
Pretreat Stage 2 (North and South)	1/5-6 weeks	30,000	Isolate
Pretreat Stage 3	Weekly	15,000	EQB
Pretreat Stage 4	Weekly	5,000	EQB
Pretreat Stage 5- results from maintenance issues and depends on issue severity	As needed	0-30,000 per year	Isolate
Pretreat Stage 6	Weekly	15,000	EQB
Pretreat Stage 9	1/5-6 weeks	30,000	Isolate
Pretreat Stage 10	Weekly	15,000	EQB
Pretreat Stage 14	Weekly	10,000	E-Coat or EQB
Pretreat DI Water System	4 days/week	3,000	EQB
Assembly Plant Erie City Boiler	1/3 years (May)	2,800	EQB
AP Kewanee Boiler- Large	Annual (May)	2,350	EQB
AP Kewanee Boiler- Small	Annual (May)	1,500	EQB
2 PF Cleaver Brooks Boilers (20,100 gallons each)	1/3 years (July shutdown)	40,200	EQB
Tank Farm Dikes	As needed	0-50,000 per month	EQB
Drum Yard Dikes	As needed	0-5,000 per month	EQB
Shutdown (typically in July)			
Sludge Pit Building	1/year	70,000	Isolate
Chassis Paint Pits	1/year	25,000	EQB
Department 92 Paint Pits	1/year	10,000	EQB
Abcor System E-Coat	1/year	20,000	E-Coat
Pretreat Stages 1 and 2	1/year	45,000	Isolate
Pretreat Stages 3 and 4	1/year	40,000	EQB
Pretreat Stage 6	1/year	30,000	EQB
Pretreat Stage 9	1/year	30,000	Isolate
Pretreat Stage 10	1/year	30,000	EQB
Pretreat Stage 12	1/year	10,000	E-Coat
Pretreat Stage 14	1/year	10,000	E-Coat or EQB
Pretreat Stages 1 and 2 Caustic Boilout and Rinse	1/year	50,000	Isolate
Pretreat Stage 5 Acid Boilout and Rinse	1/year	35,000	Isolate
Pretreat Stage 9 Peroxide Boilout	1/year	30,000	Isolate
Pretreat Stage 10 Peroxide Boilout	1/year	30,000	Isolate
Pretreat Stages 11,12, and 13 Peroxide Boilout	1/year	70,000	Isolate, Route to E-Coat
Pretreat Stages 11, 12, and 13 Solvent/Acid Boilout	1/year	70,000	Isolate, Route to E-Coat
Pretreat Stage 14 Peroxide Boilout	1/year	10,000	Isolate

Table 9. Summary of Flow Rates at Outfalls 001, 002, and 601

Flow rates are in million gallons per day (MGD). The flow rates were calculated by finding the average monthly flow, and then by calculating the 50th percentile, 95th percentile, and maximum flow rates for each time frame.

Note: Data is from 2008 to 2013, the same period used for PEQs. Flow rates for 2013 are not representative of the entire year.

	50th Percentile Flow	95th Percentile Flow	Maximum Flow
Outfall 001			
2008	0.092	0.164	0.34
2009	0.098	0.195	0.469
2010	0.125	0.218	0.324
2011	0.105	0.183	0.327
2012	0.125	0.220	0.330
2013	0.137	0.222	0.465
Outfall 002			
2008	0.060	0.268	0.860
2009	0.065	0.277	0.566
2010	0.073	0.296	0.904
2011	0.109	0.487	1.0
2012	0.077	0.337	1.0
2013	0.071	0.365	0.872
Outfall 601			
2008	0.039	0.088	0.147
2009	0.041	0.103	0.142
2010	0.041	0.095	0.134
2011	0.034	0.116	0.199
2012	0.036	0.089	0.120
2013	0.036	0.086	0.160

Table 10. Effluent Data for Navistar, Inc.

Parameter	Units	Number of Samples	Number > MDL	PEQ Average	PEQ Maximum
Ammonia-S	mg/l	193	115	0.382649	0.66545
Ammonia-W	mg/l	66	39	2.918	3.1577
Arsenic - TR	ug/l	2	2	28.2948	38.76
Barium	ug/l	2	2	91.542	125.4
Cadmium - TR	ug/l	34	1	2.628	3.6
Chlorides	mg/l	3	3	746.8	1023
Chlorine (wwh,ewh,mwh)	mg/l	162	0	--	--
Chromium - TR	ug/l	115	25	23.343	33.007
Copper - TR	ug/l	115	15	7.2407	10.87
Chromium VI - Diss	ug/l	12	3	2.336	3.2
Cyanide - free (wwh,ewh,mwh)	mg/l	24	0	--	--
Diethyl phthalate	ug/l	1	1	67.89	93
Endosulfan sulfate	ug/l	12	0	--	--
Heptachlor	ug/l	12	0	--	--
Heptachlor epoxide	ug/l	14	0	--	--
Iron - TR	ug/l	4	4	1330	1823
Lead - TR	ug/l	24	0	--	--
Magnesium	mg/l	4	4	66.43	91
Manganese - TR	ug/l	3	3	94.17	129
Mercury - TR (BCC)	ng/l	71	66	30.525	46.036
Molybdenum	ug/l	1	1	348.502	477.4
Nickel - TR	ug/l	570	567	123.34	186.73
Nitrate-N + Nitrite-N	mg/l	3	3	27.594	37.8
Phenol (wwh,ewh,mwh)	ug/l	1	1	0.31682	0.434
Phenolics	ug/l	1	1	102.7402	140.74
Phosphorus	mg/l	289	289	29.919	41.908
Selenium - TR	ug/l	3	3	21.462	29.4
Silver (wwh,ewh,mwh)	ug/l	570	5	18.4	25.2
Strontium	ug/l	3	3	330.69	453
Sulfates	mg/l	1	1	973.09	1333
TKN	mg/l	3	3	16.7535	22.95
Zinc - TR	ug/l	570	566	123.77	202.61
Dissolved solids (ave)	mg/l	7	7	4861.8	6660

Table 11. Water Quality Criteria in the Study Area

Parameter	Units	Outside Mixing Zone Criteria: Average: Human Health	Outside Mixing Zone Criteria: Average: Agri-culture	Outside Mixing Zone Criteria: Average: Aquatic Life	Outside Mixing Zone Criteria: Maximum Aquatic Life	Inside Mixing Zone Maximum
Ammonia-S	mg/l	--	--	0.7	--	--
Ammonia-W	mg/l	--	--	2.1	--	--
Arsenic - TR	ug/l	--	100	150	340	680
Barium	ug/l	--	--	220	2000	4000
Cadmium - TR	ug/l	--	50	7.3	22	43
Chlorides	mg/l	--	--	--	--	--
Chlorine (wwh,ewh, mwh,cwh) - TRes	mg/l	--	--	0.011	0.019	0.038
Chromium - TR	ug/l	--	100	270	5600	11000
Chromium VI - Diss	ug/l	--	--	11	16	31
Copper - TR	ug/l	1300	500	30	52	100
Cyanide - free (wwh,ewh,mwh)	mg/l	220	--	0.012	0.046	0.092
Diethyl phthalate	ug/l	120000	--	220	980	2000
Endosulfan sulfate	ug/l	--	--	--	--	--
Heptachlor	ug/l	0.0021c	--	--	--	--
Heptachlor epoxide	ug/l	0.0011c	--	--	--	--
Iron - TR	ug/l	--	5000	--	--	--
Lead - TR	ug/l	--	100	37	710	1400
Magnesium	mg/l	--	--	--	--	--
Manganese - TR	ug/l	--	--	--	--	--
Mercury - TR (BCC)	ng/l	12	10000	910	1700	3400
Molybdenum	ug/l	--	--	20000	190000	370000
Nickel - TR	ug/l	4600	200	170	1500	3000
Nitrate-N + Nitrite-N	mg/l	--	100	--	--	--
Phenol (wwh,ewh,mwh)	ug/l	4600000	--	400	4700	9400
Phenolics	ug/l	--	--	--	--	--
Phosphorus	mg/l	--	--	--	--	--
Selenium - TR	ug/l	11000	50	5	--	--
Silver (wwh,ewh,mwh)	ug/l	--	--	1.3	17	35
Strontium	ug/l	--	--	21000	40000	81000
Sulfates	mg/l	--	--	--	--	--
TKN	mg/l	--	--	--	--	--
Zinc - TR	ug/l	69000	25000	390	390	780
Dissolved solids (ave)	mg/l	--	--	1500	--	--

Table 12. Instream Conditions and Discharger Flow

Parameter	Units	Season	Value	Basis
Stream Flows				
1Q10	cfs	annual	2.3	Moore Run - USGS 03268000
			0.044	Unnamed tributary – USGS stream stats
7Q10	cfs	annual	2.5	Moore Run - USGS 03268000
			0.048	Unnamed tributary – USGS stream stats
		summer	2.5	Moore Run - USGS 03268000
		winter	3.2	Moore Run - USGS 03268000
30Q10	cfs	summer	2.8	Moore Run - USGS 03268000
			0.057	Unnamed tributary – USGS stream stats
		winter	3.5	Moore Rune - USGS 03268000
			0.1	Unnamed tributary – USGS stream stats
Harmonic Mean	cfs	annual	8.49	USGS 03268000
			0.17	Unnamed tributary – USGS stream stats
Mixing Assumption	%		99.80414725	Moore Run
	%		100	Unnamed tributary
Hardness	mg/l	annual	400	12 values from STORET (2003 database)
pH	S.U.	summer	8.25	5 values from STORET (2003 database)
		winter	8.25	5 values from STORET (2003 database)
Temperature	C	summer	21	From unimpacted stream data
		winter	6	From unimpacted stream data
Navistar flow	cfs	annual	0.235144	Station 001 DMR
Background Water Quality				
Ammonia-S	mg/l		0.1	Navistar 801 Station; 2006-2011; n=6; 0<MDL;
Ammonia-W	mg/l		0.1	Navistar 801 Station; 2006-2011; n=3; 1<MDL;
Arsenic - TR	ug/l		0	Station H03P24; 2003; n=6; 6<MDL;

Barium	ug/l	190.66667	Station H03P24; 2003; n=6; 0<MDL;
Cadmium - TR	ug/l	0	Station H03P24; 2003; n=6; 6<MDL;
Chlorides	mg/l	23.4166667	Station H03P24; 2003; n=6; 0<MDL;
Chlorine - TRes	mg/l	0	No representative data available.
Chromium - TR	ug/l	0	Station H03P24; 2003; n=6; 6<MDL;
Chromium VI - Diss	ug/l	0	No representative data available.
Copper - TR	ug/l	0	Station H03P24; 2003; n=6; 6<MDL;
Cyanide - free	mg/l	0	No representative data available.
Diethyl phthalate	ug/l	0	No representative data available.
Endosulfan sulfate	ug/l	0	No representative data available.
Heptachlor	ug/l	0	No representative data available.
Heptachlor epoxide	ug/l	0	No representative data available.
Iron - TR	ug/l	353	Station H03P24; 2003; n=6; 0<MDL;
Lead - TR	ug/l	1.25	Station H03P24; 2003; n=6; 5<MDL;
Magnesium	mg/l	39	Station H03P24; 2003; n=6; 0<MDL;
Manganese - TR	ug/l	18.666667	Station H03P24; 2003; n=6; 0<MDL;
Mercury - TR (BCC)	ng/l	0	No representative data available.
Molybdenum	ug/l	0	No representative data available.
Nickel - TR	ug/l	0	Station H03P24; 2003; n=6; 6<MDL;
Nitrate-N + Nitrite-N	mg/l	2.76	Station H03P24; 2003; n=6; 0<MDL;
Phenol (wwh,ewh,mwh)	ug/l	0	No representative data available.
Phenolics	ug/l	0	No representative data available.
Phosphorus	mg/l	0.102666667	Station H03P24; 2003; n=6; 0<MDL;
Selenium - TR	ug/l	0	Station H03P24; 2003; n=6; 6<MDL;
Silver (wwh,ewh,mwh)	ug/l	0	No representative data available.
Strontium	ug/l	160.5	Station H03P24; 2003; n=6; 0<MDL;
Sulfates	mg/l	67.55	Station H03P24; 2003; n=6; 0<MDL;
TKN	mg/l	0.185	Station H03P24; 2003; n=6; 2<MDL;
Zinc - TR	ug/l	0	Station H03P24; 2003; n=6; 6<MDL;
Dissolved solids	mg/l	463.67	Station H03P24; 2003; n=6; 0<MDL;

Table 13A. Summary of Effluent Limits to Maintain Applicable WQ Criteria – Moore Run

		Outside Mixing Zone Criteria				Inside Mixing Zone Maximum
		Average			Maximum	
Parameter	Units	Human Health	Agri-culture	Aquatic Life	Aquatic Life	
Ammonia-S	mg/l	--	--	7.83	--	--
Ammonia-W	mg/l	--	--	31.81	--	--
Arsenic - TR	ug/l	--	3703	1742	3659	680
Barium	ug/l	--	--	531	19663	4000
Cadmium - TR	ug/l	--	1852	85	237	43
Chlorides	mg/l	--	--	--	--	--
Chlorine (wwh,ewh, mwh,cwh) - TRes	mg/l	--	--	0.1	0.16	0.038
Chromium - TR	ug/l	--	3703	3135	60268	11000
Chromium VI - Diss	ug/l	--	--	128	172	31
Copper - TR	ug/l	21920	8431	170	275	100
Cyanide - free (wwh,ewh,mwh)	mg/l	8148	--	0.14	0.5	0.092
Diethyl phthalate	ug/l	4444179	--	2554	10547	2000
Endosulfan sulfate	ug/l	--	--	--	--	--
Heptachlor	ug/l	0.078	--	--	--	--
Heptachlor epoxide	ug/l	0.041	--	--	--	--
Iron - TR	ug/l	--	172454	--	--	--
Lead - TR	ug/l	--	3658	416	7629	1400
Magnesium	mg/l	--	--	--	--	--
Manganese - TR	ug/l	--	--	--	--	--
Mercury - TR (BCC)	ng/l	12	10000	910	1700	3400
Molybdenum	ug/l	--	--	232219	2044796	370000
Nickel - TR	ug/l	170360	7407	1974	16143	3000
Nitrate-N + Nitrite-N	mg/l	--	3604	--	--	--
Phenol (wwh,ewh,mwh)	ug/l	170360180	--	4644	50582	9400
Phenolics	ug/l	--	--	--	--	--
Phosphorus	mg/l	--	--	--	--	--
Selenium - TR	ug/l	407383	1852	58	--	--
Silver (wwh,ewh,mwh)	ug/l	--	--	15	183	35
Strontium	ug/l	--	--	242127	428917	81000
Sulfates	mg/l	--	--	--	--	--
TKN	mg/l	--	--	--	--	--
Zinc - TR	ug/l	1163436	421535	2212	2066	780
Dissolved solids (ave)	mg/l	--	--	12496	--	--

Table 13B. Summary of Effluent Limits to Maintain Applicable WQ Criteria – Unnamed Tributary

		Outside Mixing Zone Criteria				Inside Mixing Zone Maximum
		Average			Maximum	
Parameter	Units	Human Health	Agri-culture	Aquatic Life	Aquatic Life	
Ammonia-S	mg/l	--	--	0.85	--	--
Ammonia-W	mg/l	--	--	3	--	--
Arsenic - TR	ug/l	--	172	181	404	680
Barium	ug/l	--	--	226	2339	4000
Cadmium - TR	ug/l	--	86	8.8	26	43
Chlorides	mg/l	--	--	--	--	--
Chlorine (wwh,ewh, mwh,cwh) - TRes	mg/l	--	--	0.013	0.023	0.038
Chromium - TR	ug/l	--	172	325	6648	11000
Chromium VI - Diss	ug/l	--	--	13	19	31
Copper - TR	ug/l	2240	861	36	62	100
Cyanide - free (wwh,ewh,mwh)	mg/l	379	--	0.014	0.055	0.092
Diethyl phthalate	ug/l	206755	--	265	1163	2000
Dissolved solids (ave)	mg/l	--	--	1712	--	--
Endosulfan sulfate	ug/l	--	--	--	--	--
Heptachlor	ug/l	0.0036	--	--	--	--
Heptachlor epoxide	ug/l	0.0019	--	--	--	--
Iron - TR	ug/l	--	8360	--	--	--
Lead - TR	ug/l	--	171	44	843	1400
Magnesium	mg/l	--	--	--	--	--
Manganese - TR	ug/l	--	--	--	--	--
Mercury - TR (BCC)	ng/l	12	10000	910	1700	3400
Molybdenum	ug/l	--	--	24083	225553	370000
Nickel - TR	ug/l	7926	345	205	1781	3000
Nitrate-N + Nitrite-N	mg/l	--	170	--	--	--
Phenol (wwh,ewh,mwh)	ug/l	7925622	--	482	5579	9400
Phenolics	ug/l	--	--	--	--	--
Phosphorus	mg/l	--	--	--	--	--
Selenium - TR	ug/l	18953	86	6	--	--
Silver (wwh,ewh,mwh)	ug/l	--	--	1.6	20	35
Strontium	ug/l	--	--	25254	47455	81000
Sulfates	mg/l	--	--	--	--	--
TKN	mg/l	--	--	--	--	--
Zinc - TR	ug/l	118884	43074	470	463	780

Table 14A. Parameter Assessment for Outfall 021 – Moore Run discharge

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Group 1: Due to a lack of criteria, the following parameters could not be evaluated at this time.

Chlorides	Endosulfan sulfate	Magnesium
Manganese - TR	Phenolics	Phosphorus
Sulfates	TKN	

Group 2: PEQ < 25 percent of WQS or all data below minimum detection limit.
WLA not required. No limit recommended; monitoring optional.

Cyanide - free (wwh,ewh,mwh)	Heptachlor	Heptachlor epoxide
Lead - TR	Molybdenum	Phenol (wwh,ewh,mwh)
Strontium	Chlorine - TRes	

Group 3: PEQ_{max} < 50 percent of maximum PEL and PEQ_{avg} < 50 percent of average PEL.
No limit recommended; monitoring optional.

Arsenic - TR	Barium	Cadmium - TR
Chromium - TR	Chromium VI - Diss	Diethyl phthalate
Nickel - TR	Nitrate-N + Nitrite-N	Selenium - TR
Zinc - TR	Dissolved solids (ave)	Iron- TR

Group 4: PEQ_{max} >= 50 percent, but < 100 percent of the maximum PEL or
PEQ_{avg} >= 50 percent, but < 100 percent of the average PEL. Monitoring is appropriate.

Copper - TR

Group 5: Maximum PEQ >= 100 percent of the maximum PEL or average PEQ >= 100 percent of the average PEL, or either the average or maximum PEQ is between 75 and 100 percent of the PEL and certain conditions that increase the risk to the environment are present. Limit recommended.

Limits to Protect Numeric Water Quality Criteria

			Recommended Effluent Limits	
Parameter	Units	Period	Average	Maximum
Mercury - TR (BCC)	ng/l	Annual	12	1700
Silver	ug/l	Annual	15	35

Table 14B. Parameter Assessment for Outfall 001 – Unnamed tributary

Group 1: Due to a lack of criteria, the following parameters could not be evaluated at this time.

Chlorides	Endosulfan sulfate	Magnesium
Manganese - TR	Phenolics	Phosphorus
Sulfates	TKN	

Group 2: PEQ < 25 percent of WQS or all data below minimum detection limit. WLA not required. No limit recommended; monitoring optional.

Chlorine - TRes	Chromium - TR	Chromium VI - Diss
Copper - TR	Cyanide - free	Heptachlor
Heptachlor epoxide	Lead - TR	Molybdenum
Phenol	Strontium	

Group 3: PEQ_{max} < 50 percent of maximum PEL and PEQ_{avg} < 50 percent of average PEL. No limit recommended; monitoring optional.

Arsenic - TR	Barium	Cadmium - TR
Diethyl phthalate	Iron - TR	
Zinc - TR	Nitrate-N + Nitrite-N	

Group 4: PEQ_{max} >= 50 percent, but < 100 percent of the maximum PEL or PEQ_{avg} >= 50 percent, but < 100 percent of the average PEL. Monitoring is appropriate.

Nickel - TR

Group 5: Maximum PEQ >= 100 percent of the maximum PEL or average PEQ >= 100 percent of the average PEL, or either the average or maximum PEQ is between 75 and 100 percent of the PEL and certain conditions that increase the risk to the environment are present. Limit recommended.

Limits to Protect Numeric Water Quality Criteria

			Recommended Effluent Limits	
Parameter	Units	Period	Average	Maximum
Ammonia-S	mg/l		0.85	--
Ammonia-W	mg/l		3	--
Dissolved solids	mg/l		1712	--
Mercury - TR	ng/l		12	1700
Selenium - TR	ug/l		6	--
Silver	ug/l		1.6	20

Table 15A. Final Effluent Limits and Monitoring Requirements for Navistar, Inc – Outfall 001.

		Effluent Limits				
		Concentration		Loading (kg/day)[a]		
Parameter	Units	30 Day Average	Daily Maximum	30 Day Average	Daily Maximum	Basis[b]
Flow	MGD	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M[c]
Temperature	°C	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M[c]
Dissolved Oxygen	mg/l	--	5.0 (min)	--	--	EP/PD
$CBOD_5$	mg/l	12.0	18.0[d]	6.91	10.4[d]	EP/PD
Suspended Solids	mg/l	12.0	18.0[d]	6.91	10.4[d]	EP/PD
Dissolved Solids	mg/l	1712	--	985	--	WLA/RP
Ammonia-N	mg/l					
Summer		0.85	1.275[d]	0.49	0.734[d]	WLA/RP
Winter		3.0	4.5[d]	1.7	2.6[d]	WLA/RP
Phosphorus	mg/l	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M[c]
Oil and Grease	mg/l	--	10	--	--	WQS
pH	S.U.	- - - - - - - - - - - - -	6.5 to 9.0	- - - - - - - - - - - - -		WQS
E. coli	#/100ml					
Summer		161	362[d]	--	--	WQS
Cyanide, Free	mg/l	--	--	--	--	BAT/M[c]
Cadmium, T. R.	µg/l	--	--	--	--	BAT/M[c]
Chromium, T. R.	µg/l	--	--	--	--	BAT/M[c]
Hex. Chromium (Dissolved)	µg/l	--	--	--	--	BAT/M[c]
Copper, T. R.	µg/l	--	--	--	--	BAT/RP
Lead, T. R.	µg/l	--	--	--	--	BAT/M[c]
Mercury, T.	ng/l	12.0	1700	0.000007	0.000979	WLA/RP
Nickel, T. R.	µg/l	--	--	--	--	BAT/M[c]
Selenium, T. R.	µg/l	--	--	--	--	M/RP[c]
Silver, T. R.	µg/l	1.6	20	0.00092	0.012	WLA
Zinc, T. R.	µg/l	--	--	--	--	BAT/M[c]
Whole Effluent Toxicity						
Acute	TUa	--	1.0	--	--	WET
Chronic	TUc	1.2	--	--	--	WET

Table 15A. Con't.

[a] Effluent loadings based on the 95th percentile average monthly flow of 0.152 MGD.

[b] Definitions:
ABS = Antibacksliding Rule (OAC 3745-33-05(E) and 40 CFR Part 122.44(l))
BAT = Best Available Control Technology Currently Available, 40 CFR Part 433.14
BPJ = Best Professional Judgment
EP = Existing Permit
M = Monitoring Guidance
PD = Plant Design Criteria
RP = Reasonable Potential for requiring water quality-based effluent limits and monitoring requirements in NPDES permits (3745-33-07(A))
WET = Whole Effluent Toxicity (OAC 3745-33-07(B))
WLA = Wasteload Allocation procedures (OAC 3745-2)
WQS = Ohio Water Quality Standards (OAC 3745-1).

[c] Monitoring of flow and other indicator parameters is specified to assist in the evaluation of effluent quality and treatment plant performance.

[d] 7 day average limit.

Table 15B. Final Effluent Limits and Monitoring Requirements for Navistar, Inc – Outfall 021.

		Effluent Limits				
		Concentration		Loading (kg/day)[a]		
Parameter	Units	30 Day Average	Daily Maximum	30 Day Average	Daily Maximum	Basis[b]
Flow	MGD	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M[c]
Temperature	°C	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M[c]
Dissolved Oxygen	mg/l	--	5.0 (min)	--	--	EP/PD
$CBOD_5$	mg/l	12.0	18.0[d]	6.91	10.4[d]	EP/PD
Suspended Solids	mg/l	12.0	18.0[d]	6.91	10.4[d]	EP/PD
Dissolved Solids	mg/l	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M[c]
Ammonia-N	mg/l					
Summer		2.50	3.75[d]	1.44	2.16[d]	EP/PD
Winter		--	7.80[d]	--	4.49[d]	EP/PD
Phosphorus	mg/l	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M[c]
Oil and Grease	mg/l	--	10	--	--	WQS
pH	S.U.	- - - - - - - - - - - -	6.5 to 9.0	- - - - - - - - - - - -		WQS
E. coli	#/100ml					
Summer		161	362[d]	--	--	WQS
Cyanide, Free	mg/l	--	--	--	--	BAT/M[c]
Cadmium, T. R.	µg/l	--	--	--	--	BAT/M[c]
Chromium, T. R.	µg/l	--	--	--	--	BAT/M[c]
Hex. Chromium (Dissolved)	µg/l	--	--	--	--	BAT/M[c]
Copper, T. R.	µg/l	--	--	--	--	BAT/RP
Lead, T. R.	µg/l	--	--	--	--	BAT/M[c]
Mercury, T.	ng/l	12.0	1700	0.000007	0.000979	WLA/RP
Nickel, T. R.	µg/l	--	--	--	--	BAT/M[c]
Silver, T. R.	µg/l	12.0	35.0	0.00691	0.0202	ABS/RP
Zinc, T. R.	µg/l	--	--	--	--	BAT/M[c]
Whole Effluent Toxicity						
Acute	TUa	--	1.0	--	--	WET
Chronic	TUc	11.7	--	--	--	WET

Table 15B. Con't.

[a] Effluent loadings based on the 95th percentile average monthly flow of 0.152 MGD.

[b] Definitions:
ABS = Antibacksliding Rule (OAC 3745-33-05(E) and 40 CFR Part 122.44(l))
BAT = Best Available Control Technology Currently Available, 40 CFR Part 433.14
BPJ = Best Professional Judgment
EP = Existing Permit
M = Monitoring Guidance
PD = Plant Design Criteria
RP = Reasonable Potential for requiring water quality-based effluent limits and monitoring requirements in NPDES permits (3745-33-07(A))
WET = Whole Effluent Toxicity (OAC 3745-33-07(B))
WLA = Wasteload Allocation procedures (OAC 3745-2)
WQS = Ohio Water Quality Standards (OAC 3745-1).

[c] Monitoring of flow and other indicator parameters is specified to assist in the evaluation of effluent quality and treatment plant performance.

[d] 7 day average limit.

Table 16. Limit and Monitoring Requirements for Navistar, Inc. at Station 601.

		Effluent Limits				
		Concentration		Loading (kg/day)[a]		
Parameter	Units	30 Day Average	Daily Maximum	30 Day Average	Daily Maximum	Basis[b]
Flow	MGD	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M[c]
Suspended Solids	mg/l	31	60	7.85	15.2	BAT/CWF
Oil and Grease	mg/l	26	52	6.59	13.2	BAT/CWF
pH	S.U.	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M[c]
Cyanide, Free	mg/l	0.624	1.15	6.59	13.2	BAT/CWF
Cadmium, T. R.	µg/l	250	663	0.0634	0.168	BAT/CWF
Chromium, T.	µg/l	1650	2660	0.418	0.674	BAT/CWF
Copper, T. R.	µg/l	1990	3250	0.504	0.823	BAT/CWF
Lead, T. R.	µg/l	413	663	0.105	0.168	BAT/CWF
Nickel, T. R.	µg/l	2290	3830	0.58	0.97	BAT/CWF
Silver, T. R.	µg/l	231	413	0.0585	0.105	BAT/CWF
Zinc, T. R.	µg/l	1430	2510	0.363	0.636	BAT/CWF
Total Toxic Organics	ug/l	--	2050	--	0.52	BAT/CWF

[a] Effluent loadings based on the 95th percentile average monthly flow of 0.0669 MGD.

[b] Definitions: **BAT** = Best Available Control Technology Currently Available, 40 CFR Part 433.14
CWF = Combined Wastestream Formula; reflects the presence of approximately 96% process water and 4% dilute water in the total Station 1IN00022601 flow.
M = Monitoring Guidance

[c] Monitoring of flow and other indicator parameters is specified to assist in the evaluation of effluent quality and treatment plant performance.