B.2 Corrective Action

MICHIGAN DISPOSAL WASTE TREATMENT PLANT (MDWTP)
MID 000 724 831
JANUARY 18, 2019 ATTACHMENT REVISIONS

Replaces Previous Attachment B.2 Corrective Action

FORM EQP 5111 ATTACHMENT TEMPLATE B2
CORRECTIVE ACTION INFORMATION

This document is an attachment to the Michigan Department of Environmental Quality's (DEQ) *Instructions for Completing Form EQP 5111, Operating License Application Form for Hazardous Waste Treatment, Storage, and Disposal Facilities.* See Form EQP 5111 for details on how to use this attachment.

The administrative rules promulgated pursuant to Part 111, Hazardous Waste Management, of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451) R 299.9504(1)(c), R 299.9508(1)(b), R 299.9525, R 299.9629, R 299.9635, and R 299.9636; §§324.11115a and 324.11115b of Act 451; and Title 40 of the Code of Federal Regulations (CFR) §270.14(d) and Part 264, Subpart F, establish requirements for submitting corrective action information and implementing a corrective action program for hazardous waste management facilities. All references to 40 CFR citations specified herein are adopted by reference in R 299.11003.

This license application template addresses requirements for corrective action information for the waste management units (WMU) at the *Michigan Disposal Waste Treatment Plant (MDWTP)* facility in *Belleville*, Michigan. This template includes facility background information, current conditions, and release assessment requirements for operating license applications. This template supplies information to support the corrective action program specified in R 299.9629. In this template, applicants must include appropriate justification for the proposed elimination of any WMU from the corrective action program under Part 111 of Act 451.

Ensure that all samples collected for waste characterization and environmental monitoring during corrective action are collected, transported, analyzed, stored, and disposed by trained and qualified individuals in accordance with a QA/QC Plan. The QA/QC Plan should at a minimum include the written procedures outlined in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, Third Edition, Chapter 1 (November 1986), and its Updates.

Applicant for Operating License for Existing Facility:

☒ R 299.9629 Corrective Action

☐ Elimination from corrective action requirements proposed for one or more units

☞ *More than one box may be checked, if one or more WMUs are proposed for elimination from corrective action requirements*

Applicant for Operating License for New, Altered, Enlarged, or Expanded Operating License:

☐ R 299.9629 Corrective Action

☐ Elimination from corrective action requirements proposed for one or more units

Information in this attachment has been provided and approved with other license applications, and attachments of this license application. No new waste management units or areas of concern have been added to the facility.

Table of Contents

B2.A FACILITY BACKGROUND

B2.A.1 HISTORY AND DESCRIPTION OF OWNERSHIP AND OPERATION

The MDWTP facility was subjected to a RCRA Facility Assessment ("RFA") in 1992. The RFA included monitoring information and closure certification of Solid Waste Management Units ("SWMUs") present on the site from 1978 through 1990, when the current treatment plant and waste storage areas were constructed.

Beginning in 1978, waste processing was completed in three clay-lined lagoons, designated as Lagoons A, B and C. In 1979, a waste processing plant known as the "pugmill" was constructed to the north of the lagoons. Lagoon B was closed in 1980 in accordance with 40CFR265 Subpart K. Lagoons A and C were closed in two phases between 1980 and 1985. In the first phase, waste and underlying clay soils were removed and a stormwater retention basin constructed within Lagoon A. Lagoons A and C and the stormwater retention basin were formerly closed in 1985 and included additional soil removal and verification sampling to confirm that waste constituent concentrations were below regulatory limits approved by USEPA. The "pugmill" was closed 1n 1990 in accordance with a work plan approved by the MDNR (now MDEQ). The building and associated infrastructure was removed and placed with the WDI landfill as were any soils contaminated by waste constituents. Therefore, when the RFA was submitted all five previous SWMUs had been closed per applicable regulations. Subsequent to this time, the locations of the previous SMWUs have been replaced by the construction of the WDI hazardous waste landfill, specifically Master Cells VI-AS and VI-D. On September 2, 1999, MDEQ formerly, by letter, accepted the closure certification for these former SWMUs. Therefore, the only SWMUs presently on the MDWTP property are the waste treatment plant and associated waste storage areas. These active SWMUs have been monitored for environmental impact per a hazardous waste operating license. All of the closure certifications and the environmental monitoring data is on file with MDEQ.

Current MDWTP operations include receiving, storage, and treatment of hazardous permitted by the MDEQ under the facility operating license (MID 000 724 831). Additionally, MDWTP is permitted to manage TSCA regulated PCB waste. Appendix B2.A.1 Hazardous Waste Codes Processed in Solid Waste Management Units provides a list of hazardous waste codes that may have been received for storage or treatment at the facility. The routine operations and work areas include:

Non-hazardous wastes are managed in accordance with the Solid Waste Processing and Transfer Facility Operating License issued under Part 115 of Act 451 of 1994, the Natural Resources and Environmental Protection Act (NREPA).

The MDWTP is a liquid and solid hazardous and nonhazardous waste storage and treatment facility. Containerized wastes may be staged/stored on-site before and after treatment in one of the following solid waste management units:

- East Container Staging Area (ECSA)
- North Container Storage Area (NCSA)
- East and West Loading/Unloading Bays
- Southeast Container Storage Area (SECSA)

Hazardous and non-hazardous wastes are stored and treated in solid waste management units defined as treatment tanks A, B, C, D, E, F, G and H. Vertical storage tanks (16-19, 1B) are solid waste management units that may store liquid wastes. Dry flowable bulk solid wastes may be stored in six, silos (1-6). Wastes are placed into the treatment tanks and mixed with reagents as needed for the specific wastes being treated. Once applicable land disposal restrictions are met, treated waste is disposed of in an appropriate landfill.

Dimensions and descriptions of the solid waste management units have been provided in Attachment C1 Containers and C2 Tanks and are further supported with drawings found in Attachment B6 Engineering Drawings.

B2.A.2 Environmental Setting

See Attachment B4 Environment Assessment of MDWTP's Part 111 permit application.

B2.A.2(a) Climate

See Attachment B4 Environment Assessment of MDWTP's Part 111 permit application.

B2.A.2(b) Topography

See Appendix B2.A.2 Solid Waste Management Unit Topographic Map and Ground Floor Drawing of this attachment, as well as Attachment B4 Environment Assessment of MDWTP's Part 111 permit application.

B2.A.2(c) Hydrogeology

See Attachment B3 Hydrogeological Report of MDWTP's Part 111 permit application.

B2.A.2(d) Soil

See Attachment B3 Environmental Monitoring of MDWTP's Part 111 permit application.

B2.A.2(e) Surface Water

See Attachment B3 Environmental Monitoring of MDWTP's Part 111 permit application.

B2.A.2(f) Surrounding Land Uses

See Attachment B4 Environment Assessment of MDWTP's Part 111 permit application.

B2.A.2(g) Critical Habitats and Endangered Species

See Attachment B4

B2.A.3 Characterization of Potential or Actual Sources of Contamination

[R 299.9504(c) and 40 CFR §270.14(d)]

B2.A.3(A) TANKS /CONTAINER STORAGE AREAS/LOADING AND UNLOADING AREAS
B2.A.3(a)(1) Unit Characteristics

Attachments C1 Containers and C2 Tanks of MDWTP's Part 111 permit application, provide description of the solid waste management units. Additionally, Attachment B6 Engineering Drawings further supports the attachments.

B2.A.3(a)(2) Waste Characteristics and Management

Current MDWTP operations include receiving, storage, and treatment of hazardous permitted by the MDEQ under the facility operating license (MID 000 724 831). Additionally, MDWTP is permitted to manage TSCA regulated PCB waste. Appendix B2.A.1 Hazardous Waste Codes Processed in Solid Waste Management Units provides a list of hazardous waste codes that may have been received for storage or treatment at the facility. Non-hazardous liquid and solid wastes are managed in accordance with the Solid Waste Processing and Transfer Facility Operating License issued under Part 115 of Act 451 of 1994, the Natural Resources and Environmental Protection Act (NREPA). See Attachment A2 Chemical and Physical Analyses and A3 Waste Analysis Plan.

B2.A.3(a)(3) History of Releases or Potential to Release

Releases that could pose a threat to human health and the environment have been reported to MDEQ and incident reports have been filed as described in the Attachment A7 Contingency Plan.

B2.B FACILITY'S ASSESSMENT OF KNOWN NATURE AND EXTENT OF CONTAMINATION

The existing environmental monitoring programs required by the license monitor for contamination potential and the license conditions incorporate corrective action requirements. As described above, MDWTP submitted an RFA to USEPA in 1992. Any incidents that resulted or potentially resulted in a release of hazardous waste or waste constituents that required implementation of the contingency plan was summarized in this assessment. The summary included any assessments, clean-ups or corrective measures required to address the incidents. Since 1992, incidents have been reported to the DEQ according to license requirements and corrective measures have been finalized.

B2.B.1 GROUNDWATER
See Attachment B3 Hydrogeological Report and Attachment B5 Groundwater Monitoring.

B2.B.1(A) RECOMMENDATIONS OR ESTABLISHED REQUIREMENTS FOR ADDITIONAL INVESTIGATIONS
No additional investigations are anticipated.

B2.B.2 SOIL

Soil sampling is not performed at MDWTP. See Attachment A5 Environmental Monitoring for waiver information.

B2.B.3 Surface Water and Sediment

Surface water monitoring is not necessary for the MDWTP for several reasons. First, all runoff within the treatment plant footprint is directed inward to blind sumps where the water is collected and delivered to the wastewater treatment plant. Second, the MWTP is surrounded by land owned by Wayne Disposal, Inc. (WDI). An extensive surface water monitoring program that includes monitoring of surface water runoff from all unpaved areas is conducted per conditions of WDI's Part 111 Operating License. Sampling locations include interior drainage ditches and sedimentation basins. Further, all paved areas that jointly serve truck traffic for MDWTP and WDI operations are curbed and guttered and this water is directed to the wastewater treatment plant for treatment and discharge to the Wayne County sewer system.

B2.B.4 Air

Ambient air monitoring is completed as described in Attachment B5 Environmental Monitoring. Stack testing is performed in accordance with requirements set forth in the Renewable Operating Permit.

B2.B.4(a) Recommendations or Established Requirements for Additional Investigations

MDWTP does not anticipate and additional investigations.

B2.C FACILITY'S EXPOSURE ASSESSMENT

There are no environmental impacts on the facility pursuant to Part 201. Therefore no information is available and this section is not applicable.

B2.D INTERIM MEASURES

No information is available.

B2.E ENVIRONMENTAL INDICATORS

See Environmental Indicator forms.

B2.F FACILITY'S ASSESSMENT OF KNOWN OR PROPOSED CONSTITUENTS OF CONCERN

[R 299.9629(3)(a)(i) and (3)(b)(i)]

Not applicable, since no on site contamination currently exists at the facility.

B2.G ESTABLISHED OR PROPOSED CLEANUP CRITERIA

[R 299.9629(3)(a)(ii) and (iii) and R 299.9629(3)(b)(ii) and (iii)]

Not applicable, since no on site contamination currently exists at the facility.

B2.H ESTABLISHED OR PROPOSED COMPLIANCE POINTS AND PERIODS
[R 299.9629(3)(a)(iv) and (v) and R 299.9629(3)(b)(iv) and (v)]

Not applicable, since no on site contamination currently exists at the facility.

B2.I OFF-SITE ACCESS

Not applicable, since no on site contamination currently exists at the facility.

B2.J PUBLIC INVOLVEMENT PLAN

Not applicable, since no on site contamination currently exists at the facility.

B2.K HEALTH AND SAFETY PLAN

Not applicable, since no on site contamination currently exists at the facility.

B2.L NOTICE REQUIREMENTS
[R 299.9525]

Notice would have been filed to the office of register of deeds in Wayne County during the construction of the facility or within 60 days of the rule implementation.

B2.M JUSTIFICATION FOR PROPOSED ELIMINATION OF ANY WASTE MANAGEMENT UNIT FROM THE CORRECTIVE ACTION PROGRAM OR INTENT TO PROCEED WITH CORRECTIVE ACTIONS

No waste management units ate being eliminated from the corrective action program.

APPENDIX B2.A.1

Hazardous Waste Codes Processed in Solid Waste Management Units

MICHIGAN DISPOSAL WASTE TREATMENT PLANTMID 000724831

EPA Hazardous Waste Codes

D001	D002	D003	D004	D005	D006	D007	D008	D009	D010	D011	D012
D013	D014	D015	D016	D017	D018	D019	D020	D021	D022	D023	D024
D025	D026	D027	D028	D029	D030	D043	D032	D033	D034	D035	D036
D037	D038	D039	D040	D041	D042						
F001	F002	F003	F004	F005	F006	F007	F008	F009	F010	F011	F012
F019	F022	F023	F024	F025	F026	F027	F028	F032	F034	F035	F037
F038	F039										
K001	K002	K003	K004	K005	K006	K007	K008	K009	K010	K011	K013
K014	K015	K016	K017	K018	K019	K020	K021	K022	K023	K024	K025
K026	K027	K028	K029	K030	K031	K032	K033	K034	K035	K036	K037
K038	K039	K040	K041	K042	K044	K045	K046	K047	K048	K049	K050
K051	K052	K060	K061	K062	K064	K065	K066	K069	K071	K073	K083
K084	K085	K086	K087	K088	K090	K091	K093	K094	K095	K096	K097
K098	K099	K100	K101	K102	K103	K104	K105	K106	K107	K108	K109
K110	K111	K112	K113	K114	K115	K116	K117	K118	K123	K124	K125
K126	K131	K132	K136	K141	K142	K143	K144	K145	K147	K148	K149
K150	K151	K156	K157	K158	K159	K160	K161	K169	K170	K171	K172
K174	K175	K176	K177	K178	K181						
P001	P002	P003	P004	P005	P006	P007	P008	P009	P010	P011	P012
P013	P014	P015	P016	P017	P018	P020	P021	P022	P023	P024	P025
P026	P027	P028	P029	P030	P031	P033	P034	P035	P036	P037	P038
P039	P040	P041	P042	P043	P044	P045	P046	P047	P048	P049	P050
P051	P054	P056	P057	P058	P059	P060	P062	P063	P064	P065	P066
P067	P068	P069	P070	P071	P072	P073	P074	P075	P076	P077	P078
P081	P082	P084	P085	P086	P087	P088	P089	P092	P093	P094	P095
P096	P097	P098	P099	P101	P102	P103	P104	P105	P106	P108	P109
P110	P111	P112	P113	P114	P115	P116	P118	P119	P120	P121	P122
P123	P127	P128	P185	P188	P189	P190	P191	P192	P194	P196	P197
P198	P199	P201	P202	P203	P204	P205					
U001	U002	U003	U004	U005	U006	U007	U008	U009	U010	U011	U012
U014	U015	U016	U017	U018	U019	U020	U021	U022	U023	U024	U025
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U038	U039	U040	U041	U042	U043	U044	U045	U046	U047	U048	U049
U050	U051	U052	U053	U055	U056	U057	U058	U059	U060	U061	U062
U063	U064	U065	U066	U067	U068	U069	U070	U071	U072	U073	U074
U075	U076	U077	U078	U079	U080	U081	U082	U083	U084	U085	U086
U087	U088	U089	U090	U091	U092	U093	U094	U095	U096	U097	U098
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U113	U114	U115	U116	U117	U118	U119	U120	U121	U122	U123	U124
U125	U126	U127	U128	U129	U130	U131	U132	U133	U134	U135	U136
U137	U138	U139	U140	U141	U142	U143	U144	U145	U146	U147	U148
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U161	U162	U163	U164	U165	U166	U167	U168	U169	U170	U171	U172
U173	U174	U176	U177	U178	U179	U180	U181	U182	U183	U184	U185
U186	U187	U188	U189	U190	U191	U192	U193	U194	U196	U197	U200
U201	U202	U203	U204	U205	U206	U207	U208	U209	U210	U211	U213
U214	U215	U216	U217	U218	U219	U220	U221	U222	U223	U225	U226
U227	U228	U234	U235	U236	U237	U238	U239	U240	U243	U244	U246
U247	U248	U249	U271	U277	U278	U279	U280	U328	U353	U359	U364
U365	U366	U367	U372	U373	U375	U376	U377	U378	U379	U381	U382
U383	U384	U385	U386	U387	U389	U390	U391	U392	U393	U394	U395
U396	U400	U401	U402	U403	U404	U407	U409	U410	U411		
001S	002S	003S	004S	005S	006S	007S					
001K	002K										
001U	002U	003U	004U	005U	006U	007U	008U	009U	011U	012U	013U
014U	015U	016U	017U	020U	021U	022U	023U	024U	025U	027U	028U
029U	030U	031U	032U	033U	034U	036U	037U	038U	040U	041U	042U
043U	044U	046U	047U	048U	049U	050U	051U	052U	054U	055U	056U
057U	058U	059U	061U	063U	064U	065U	068U	070U	071U	072U	073U
074U	075U	076U	077U	078U	079U	080U	082U	083U	086U	088U	089U
090U	092U	093U	094U	095U	096U	097U	098U	099U	100U	101U	102U
103U	104U	106U	108U	110U	111U	112U	113U	114U	115U	116U	117U
118U	119U	120U	121U	122U	124U	127U	128U	129U	131U	132U	134U
135U	136U	137U	138U	139U	140U	141U	142U	143U	144U	146U	147U
148U	150U	151U	152U	153U	154U	155U	157U	158U	159U	160U	161U
162U	163U	164U	165U	166U	167U	168U	169U	170U	171U	172U	173U
174U	175U										

MICHIGAN DISPOSAL WASTE TREATMENT PLANTMID 000724831

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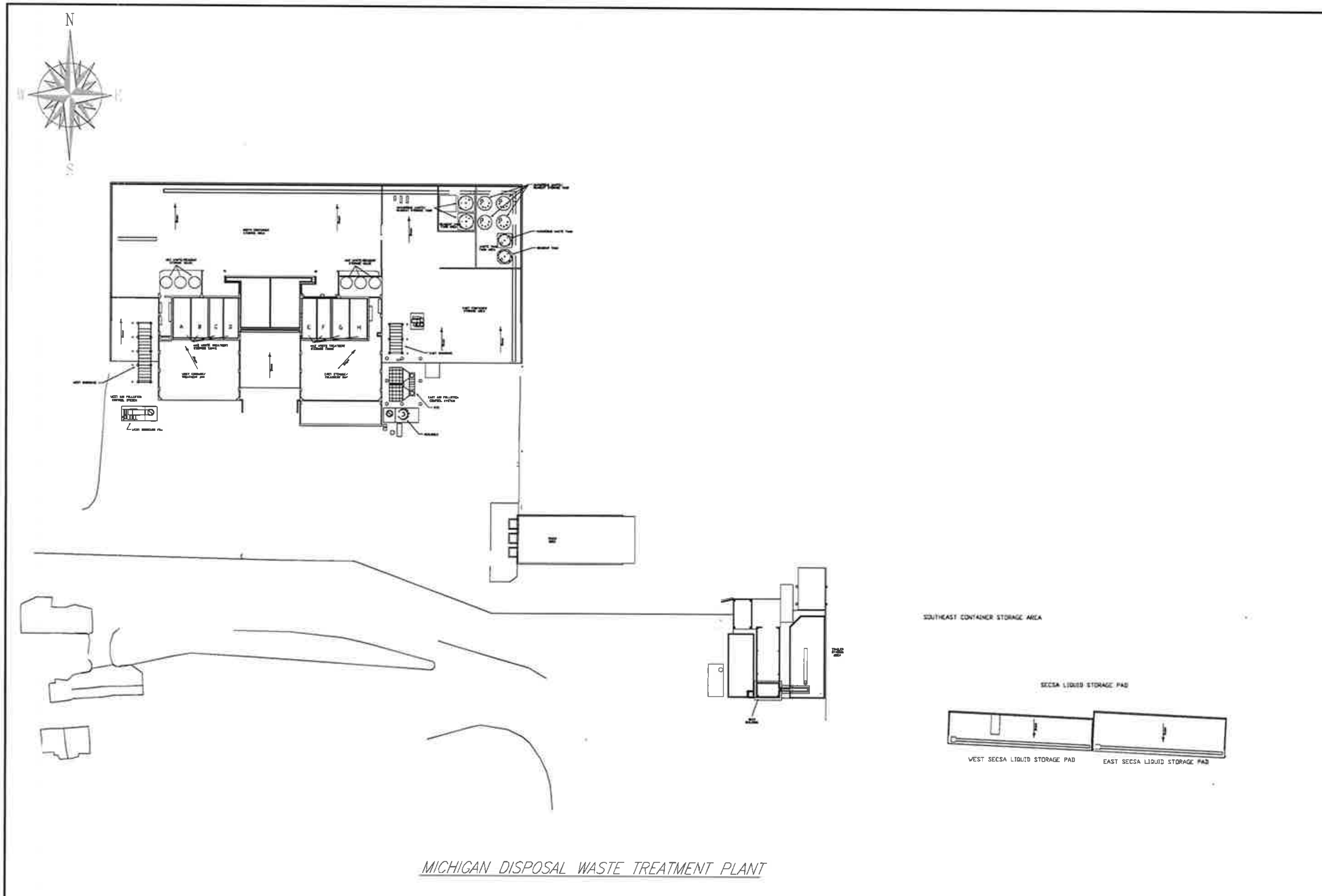
U383	U384	U385	U386	U387	U389	U390	U391	U392	U393	U394	U395
U396	U400	U401	U402	U403	U404	U407	U409	U410	U411		
001S	002S	003S	004S	005S	006S	007S					
001K	002K										
001U	002U	003U	004U	005U	006U	007U	008U	009U	011U	012U	013U
014U	015U	016U	017U	020U	021U	022U	023U	024U	025U	027U	028U
029U	030U	031U	032U	033U	034U	036U	037U	038U	040U	041U	042U
043U	044U	046U	047U	048U	049U	050U	051U	052U	054U	055U	056U
057U	058U	059U	061U	063U	064U	065U	068U	070U	071U	072U	073U
074U	075U	076U	077U	078U	079U	080U	082U	083U	086U	088U	089U
090U	092U	093U	094U	095U	096U	097U	098U	099U	100U	101U	102U
103U	104U	106U	108U	110U	111U	112U	113U	114U	115U	116U	117U
118U	119U	120U	121U	122U	124U	127U	128U	129U	131U	132U	134U
135U	136U	137U	138U	139U	140U	141U	142U	143U	144U	146U	147U
148U	150U	151U	152U	153U	154U	155U	157U	158U	159U	160U	161U
162U	163U	164U	165U	166U	167U	168U	169U	170U	171U	172U	173U
174U	175U										

APPENDIX B2.A.2

Solid Waste Management Unit
Topographic Map and Ground Floor Drawing

US ECOLOGY
PART A TOPOGRAPHIC MAP 2
PROJ. FILE
FILENAME
DATE: 10/28/13
SCALE: 1"=150'
SHEET ___ OF ___
DRN. BY: DAG
REVISIONS
us ecology
LEGEND
MAJOR CONTOUR
MINOR CONTOUR
STORM CONTACT WATER
WATER MAIN
HYDRANT
GATE VALVE IN BOX
GATE VALVE IN WELL
CURB STOP & BOX
BLOW-OFF
STORM SEWER
CATCH BASIN OR INLET
DOUBLE CATCH BASIN OR INLET
MONITOR WELL
CLEANOUT
SANITARY SEWER
WATER METER
FENCE
ABANDONED
SCALE: 1" = 150'
MDWTP
I-94
QUIRK DRAIN
N.



US ecology
49350 N I-94 SERVICE DRIVE, BELLEVILLE MI 48111
TEL. (800) 390-3265

REVISIONS		
A	1/3/18	MDO Revisions
B		
C		
D		
E		

PROJ. FILE: MDI	FILENAME: MDWTP
DATE: 9/8/16	SCALE: 1"=35'
SHEET ___ OF ___	DRN BY: CAG

MICHIGAN DISPOSAL WASTE TREATMENT PLANT
WASTE TREATMENT PLANT
GROUND FLOOR DRAWING

1

APPENDIX B2.E.1

ENVIRONMENTAL INDICATOR FORMS

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

DEQ adapted to Word 8/07

RCRA Corrective Action Environmental Indicator (EI) RCRA Info Code (CA725)
Current Human Exposures Under Control

Facility Name: **Michigan Disposal Waste Treatment Plant**
Facility Address: **49350 North I-94 Service Dr., Belleville, MI 48111**
Facility EPA ID #: **MID 000 724 831**

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to Resource Conservation Recovery Act of 1976 (RCRA) Corrective Action (e.g., waste management unit [WMU], regulated unit [RU], and area of concern [AOC]), been **considered** in this EI determination?

   ☒ If yes – check here and continue with #2 below.

   ☐ If no – reevaluate existing data, or

   ☐ If data are not available, skip to #6 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)
EIs are measures being used by the RCRA Corrective Action Program to go beyond programmatic activity measures (reports received and approved, etc.) to track changes in the quality of the environment. The two EIs developed to date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for nonhuman (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI
A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA Corrective Action at or from the identified facility [i.e., site-wide]).

Relationship of EI to Final Remedies
While final remedies remain the long-term objective of the RCRA Corrective Action Program the EIs are near-term objectives that are currently being used as program measures for the Government Performance and Results Act of 1993 (GPRA). The "Current Human Exposures Under Control" EIs are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action Program's overall mission to protect human health and the environment requires that final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration/Applicability of EI Determinations
EI determinations status codes should remain in the RCRAInfo national database ONLY as long as they remain true (i.e., RCRAInfo status codes must be changed when the regulatory authorities become aware of contrary information).

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"1** above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from WMUs, RUs or AOCs)?

	Yes	No	?	Rationale/Key Contaminants
Groundwater	☐	☒	☐	
Air (indoors)2	☐	☒	☐	
Surface Soil (e.g., <2ft)	☐	☒	☐	
Surface Water	☐	☒	☐	
Sediment	☐	☒	☐	
Subsurf. Soil (e.g., >2ft)	☐	☒	☐	
Air (outdoors)	☐	☒	☐	

☒ If no (for all media) – skip to #6, and enter "YE", status code after providing or citing appropriate "levels" and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

☐ If yes (for any media) – continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

☐ If unknown (for any media) – skip to #6 and enter "IN" status code.

Rationale and Reference(s):

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

1"Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

2Recent evidence (from the Colorado Department of Public Health and Environment, and others) suggests that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above [and adjacent to] groundwater with volatile contaminants) does not present unacceptable risks.

Summary Exposure Pathway Evaluation Table

Potential **Human Receptors** (Under Current Conditions)

Contaminated Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food3
Groundwater							
Air (indoors)							
Soil (surface, e.g., <2 ft)							
Surface Water							
Sediment							
Soil (subsurface e.g., >2 ft)							
Air (outdoors)							

Instructions for Summary Exposure Pathway Evaluation Table:

A. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated" as identified in #2 above.

B. Enter "yes" or "no" for potential "completeness" under each "Contaminated" Media – Human Receptor Combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media – Human Receptor combinations (Pathways) do not have check spaces ("__"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

☐ If no (Pathways are not complete for any contaminated media-receptor combination) – skip to #6, and enter "YE" status code, after explaining and/or referencing conditions(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

☐ If yes (Pathways are complete for any "Contaminated" Media – Human Receptor combination) – continue after providing supporting explanation.

☐ If unknown (for any "Contaminated" Media – Human Receptor combination) – skip to #6 and enter "IN" status code.

Rationale and Reference(s)

3Indirect Pathway/Receptor (vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.).

4. Can the **exposures** from any of the complete Pathways identified in #3 be reasonably expected to be **"significant"4** (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: (1) greater in magnitude [intensity, frequency and/or duration] than assumed in the derivation of the acceptable "levels" [used to identify the "contamination"]; or (2) the combination of exposure magnitude [perhaps even though low] and contaminant concentrations [that may be substantially above the acceptable "levels"] could result in greater than acceptable risks)?

   ☐ If no (exposures can not be reasonably expected to be significant [i.e., potentially "unacceptable"] for any complete exposure pathway) – skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant".

   ☐ If yes (exposures could be reasonably expected to be "significant" [i.e., potentially "unacceptable"] for any complete exposure pathway) – continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

   ☐ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

5. Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

   ☐ If yes (all "significant" exposures have been shown to be within acceptable limits) – continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

   ☐ If no (there are current exposures that can be reasonably expected to be "unacceptable") – continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

   ☐ If unknown (for any potentially "unacceptable" exposure) – continue and enter "IN" status code.

Rationale and Reference(s):

6. Check the appropriate RCRAInfo status codes for the Current Human Exposures Under Control EI Code (CA725), obtain supervisory signature and date on the EI determination below, and attach appropriate supporting documentation as well as a map of the facility.

   ☒ YE – Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected

4If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

to be "Under Control" at the Michigan Disposal Waste Treatment Plant, EPA ID #MID 000 724 831, located at 49350 North I-94 Service Drive, Belleville MI 48111 under current and reasonably expected conditions. This determination will be reevaluated when the agency/state becomes aware of significant changes at the facility.

☐ NO – "Current Human Exposures" are NOT "Under Control."

☐ IN – More information is needed to make a determination.

Completed by: _____ Date: (type date)

(type name)
(type title)
Office of Waste Management and Radiological Protection
Michigan Department of Environmental Quality
517- -

Supervisor: _____ Date: (type date)

(type name)
(type title)
Office of Waste Management and Radiological Protection
Michigan Department of Environmental Quality
517- -

Locations where references may be found:

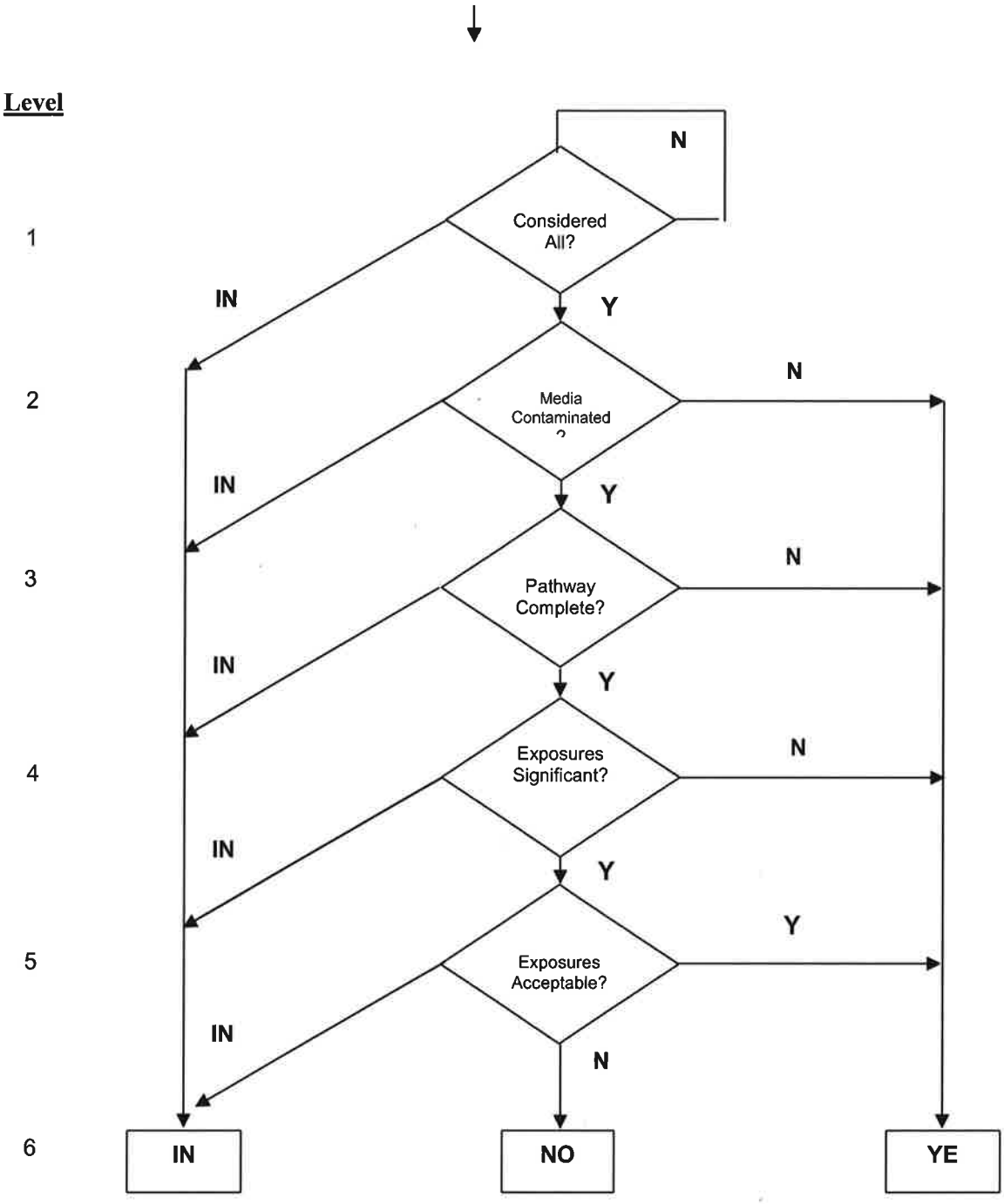
Hazardous Waste Section facility files at:
Office of Waste Management and Radiological Protection
Michigan Department of Environmental Quality
525 West Allegan Street
Lansing, Michigan 48933

Contact e-mail addresses:

(type name) - (type e-mail)
(type name) - (type e-mail)

Final Note: The human exposures EI is a qualitative screening of exposures and the determinations within this document should not be used as the sole basis for restricting the scope of more detailed (e.g., site-specific) assessments of risk.

Facility Name: Michigan Disposal Waste Treatment Plant (MDWTP)
EPA ID#: MID 000 724 831
City/State: Belleville, MI



DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

DEQ adapted to Word 8/07

RCRA Corrective Action Environmental Indicator (EI) RCRAInfo Code (CA750)
Migration of Contaminated Groundwater Under Control

Facility Name: **Michigan Disposal Waste Treatment Plant (MDWTP)**
Facility Address: **49350 North I-94 Service Drive., Belleville, MI 48111**
Facility EPA ID #: **MID 000 724 831**

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from waste management units (WMU), regulated units (RU), and areas of concern (AOC)), been **considered** in this EI determination?

☒ If yes - check here and continue with #2 below.

☐ If no - reevaluate existing data, or

☐ If data are not available, skip to #8 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)
EIs are measures being used by the RCRA Corrective Action Program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EIs developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for nonhuman (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI
A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA Corrective Action at or from the identified facility [i.e., site-wide]).

Relationship of EI to Final Remedies
While final remedies remain the long-term objective of the RCRA Corrective Action Program the EIs are near-term objectives that are currently being used as program measures for the Government Performance and Results Act of 1993, (GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated groundwater and contaminants within groundwater (e.g., nonaqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration/Applicability of EI Determinations
EI determinations status codes should remain in the RCRAInfo national database ONLY as long as they remain true (i.e., RCRAInfo status codes must be changed when the regulatory authorities become aware of contrary information).

2. Is **groundwater** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

   ☐ If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

   ☒ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

   ☐ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[2] as defined by the monitoring locations designated at the time of this determination)?

   ☐ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[2].

   ☐ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[2]) – skip to #8 and enter "NO" status code, after providing an explanation.

   ☐ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

   ☐ If yes - continue after identifying potentially affected surface water bodies.

   ☐ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

   ☐ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[3] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions [e.g., the nature, and number, of discharging contaminants, or environmental setting], that significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

   ☐ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: (1) the maximum known or reasonably suspected concentration[3] of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and (2) provide a statement of professional judgment/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

   ☐ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: (1) the maximum known or reasonably suspected concentration[3] of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and (2) for any contaminants discharging into surface water in concentrations[3] greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

   ☐ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented[4])?

   ☐ If yes - continue after either: (1) identifying the final remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR (2) providing or referencing an interim-assessment,[5] appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors that should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via

bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

☐ If no - (the discharge of "contaminated" groundwater can not be shown to be "**currently acceptable**") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

☐ If unknown - skip to 8 and enter "IN" status code.

Rationale and Reference(s):

7. Will groundwater **monitoring**/measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

   ☐ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

   ☐ If no - enter "NO" status code in #8.

   ☐ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

8. Check the appropriate RCRAInfo status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), obtain supervisor signature and date on the EI determination below, and (attach appropriate supporting documentation as well as a map of the facility.

   ☒ YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the Michigan Disposal Waste Treatment Plant, EPA ID # MID 000 724 831, located at 49350 North I-94 Service Drive, Belleville, MI 48111. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater." This determination will be reevaluated when the agency/state becomes aware of significant changes at the facility.

   ☐ NO - Unacceptable migration of contaminated groundwater is observed or expected.

   ☐ IN - More information is needed to make a determination.

Completed by: _____ Date (type date)

(type name)
(type title)
Office of Waste Management and Radiological Protection
Michigan Department of Environmental Quality
517- -

Supervisor: _____ Date (type date)

(type name)
(type title)
Office of Waste Management and Radiological Protection
Michigan Department of Environmental Quality

Locations where references may be found:

Hazardous Waste Section facility files at:
Office of Waste Management and Radiological Protection
Michigan Department of Environmental Quality
525 West Allegan Street
Lansing, Michigan 48933

Contact e-mail addresses:

(type name) - (type e-mail)
(type name) - (type e-mail)

Facility Name: Michigan Disposal Waste Treatment Plant (MDWTP)
EPA ID#: MID 000 724 831
City/State: Belleville, MI

MIGRATION OF CONTAMINATED GROUNDWATER UNDER CONTROL (CA 750)