BOTEX

STAGE TECHNOLOGY

DC-1216

DMX controller

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1 General information

This user manual contains important information on the safe operation of the device. Read and follow all safety notes and all instructions. Save this manual for future reference. Make sure that it is available to all persons using this device. If you sell the device to another user, be sure that they also receive this manual.

Our products and user manuals are subject to a process of continuous development. We therefore reserve the right to make changes without notice. Please refer to the latest version of the user manual which is ready for download under *www.thomann.de*.

1.1 Further information

On our website (*www.thomann.de)* you will find lots of further information and details on the following points:

Download	This manual is also available as PDF file for you to download.
Keyword search	Use the search function in the electronic version to find the topics of interest for you quickly.
Online guides	Our online guides provide detailed information on technical basics and terms.
Personal consultation	For personal consultation please contact our technical hotline.
Service	If you have any problems with the device the customer service will gladly assist you.

1.2   Notational conventions

This manual uses the following notational conventions:

Letterings

The letterings for connectors and controls are marked by square brackets and italics.

Examples: *[VOLUME]* control, *[Mono]* button.

Displays

Texts and values displayed on the device are marked by quotation marks and italics.

Examples: *'24ch'*, *'OFF'*.

Instructions

The individual steps of an instruction are numbered consecutively. The result of a step is indented and highlighted by an arrow.

Example:

1. ▶ Switch on the device.

2. ▶ Press *[Auto]*.

   ⇨ Automatic operation is started.

3. ▶ Switch off the device.

1.3 Symbols and signal words

In this section you will find an overview of the meaning of symbols and signal words that are used in this manual.

Signal word	Meaning
DANGER!	This combination of symbol and signal word indicates an immediate dangerous situation that will result in death or serious injury if it is not avoided.
NOTICE!	This combination of symbol and signal word indicates a possible dangerous situation that can result in material and environmental damage if it is not avoided.

Warning signs	Type of danger
	Warning – danger zone.

2   Safety instructions

Intended use

This device is used to control spotlights, dimmers, lighting effects equipment, Moving Heads or other DMX-controlled devices. The device is designed for professional use and is not suitable for use in households. Use the device only as described in this user manual. Any other use or use under other operating conditions is considered to be improper and may result in personal injury or property damage. No liability will be assumed for damages resulting from improper use.

This device may be used only by persons with sufficient physical, sensorial, and intellectual abilities and having corresponding knowledge and experience. Other persons may use this device only if they are supervised or instructed by a person who is responsible for their safety.

Safety

> ⚠️ **DANGER!**
> **Danger for children**
>
> Ensure that plastic bags, packaging, etc. are disposed of properly and are not within reach of babies and young children. Choking hazard!
>
> Ensure that children do not detach any small parts (e.g. knobs or the like) from the unit. They could swallow the pieces and choke!
>
> Never let children unattended use electrical devices.

!

NOTICE!

External power supply

The device is powered by an external power supply. Before connecting the external power supply, ensure that the input voltage (AC outlet) matches the voltage rating of the device and that the AC outlet is protected by a residual current circuit breaker. Failure to do so could result in damage to the device and possibly the user.

Unplug the external power supply before electrical storms occur and when the device is unused for long periods of time to reduce the risk of electric shock or fire.

!

NOTICE!

Risk of fire

Do not block areas of ventilation. Do not install the device near any direct heat source. Keep the device away from naked flames.

! **NOTICE!**
Operating conditions
This device has been designed for indoor use only. To prevent damage, never expose the device to any liquid or moisture. Avoid direct sunlight, heavy dirt, and strong vibrations.

! **NOTICE!**
Possible staining
The plasticiser contained in the rubber feet of this product may possibly react with the coating of your parquet, linoleum, laminate or PVC floor and after some time cause permanent dark stains.

In case of doubt, do not put the rubber feet directly on the floor, but use felt-pad floor protectors or a carpet.

3   Features

Special features of the device:

- 12 units with up to 16 DMX channels operable
- 30 banks with each 8 programmable scenes
- 6 Chase programmes with Loop function
- 8 faders for the DMX output levels
- Built-in microphone for sound-control
- Automatic programme run with tap-sync or speed control
- MIDI control
- Blackout function
- Chase programming
- Fade time control

4 Installation and starting up

Create all connections while the device is off. Use the shortest possible high-quality cables for all connections. Take care when running the cables to prevent tripping hazards.

> **!**
>
> **NOTICE!**
>
> **Possible data transmission errors**
>
> For error-free operation make use of dedicated DMX cables and do not use ordinary microphone cables.
>
> Never connect the DMX input or output to audio devices such as mixers or amplifiers.

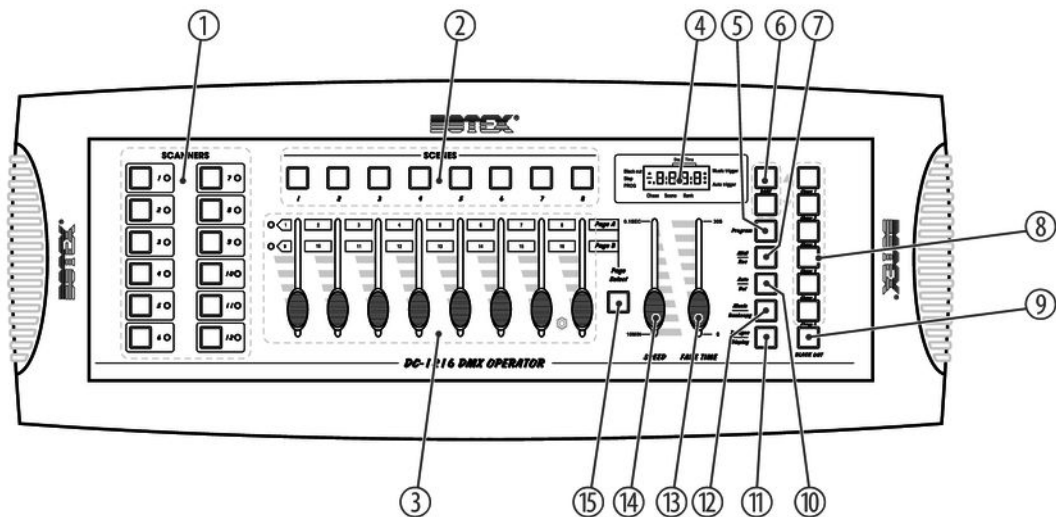**Rack mounting**

This device has been designed for 19" rack mounting. The rack ears become accessible by unscrewing the handles on the side of the unit.

Connecting the power adapter   Connect the included power supply to the power supply socket on the unit and then put the power plug into the wall outlet. The device is immediately operational.

5   Connections and controls

Front panel

1	*[SCANNERS]*
	12 scanners with 16 DMX channels and fader control
	Press one of the scanner buttons to turn on the manual fader control. Press the scanner button again to turn it off. The LED next to the button lights up or goes out to indicate your selection. For channel assignment, see table below.
2	*[SCENES]*
	Scene buttons
	Press one of the Scene buttons to load or save scenes. A maximum of 240 scenes can be saved.
3	Fader
	Use these knobs to control the intensity of channels 1-8 or 9-16, depending on whether Page A or B is selected.
4	Display
5	*[Program]*
	Enables the Programme mode
6	*[BANK]*
	Press the Up / Down buttons to choose from 30 banks.

7	*[Midi/Rec]*
	To control MIDI operations or to record programmes
8	*[CHASE 1] … [CHASE 6]*
	To call up your programmed chases
9	*[BLACK OUT]*
	Press this button to temporarily set all DMX values to 0.
10	*[Auto/Del]*
	Activates Auto mode or deletes scenes or chases
11	*[Tapsync/Display]*
	Press this button to set the beat for the program sequence or to switch the display from % to numeric (0-255) indication.
12	*[Music/Bankcopy]*
	Activates Music mode or to copy a bank or chaser with scenes

13	*[FADE TIME]* Time control For setting the Fade time. The Fade time is the time it takes for a scanner to move from one position to another, or for a dimmer from Fade In to Fade Out.
14	*[SPEED]* Speed control For setting the Chase speed. The chase speed determines how fast or slow the desired scenes are playing.
15	*[Page Select]* Page select button To select the desired page A (1-8) or page B (9-16)

Device	DMX channels
1	1 … 16
2	17 … 32

Device	DMX channels
3	33 … 48
4	49 … 64
5	65 … 80
6	81 … 96
7	97 … 112
8	113 … 128
9	129 … 144
10	145 … 160
11	161 … 176
12	177 … 192

Rear panel
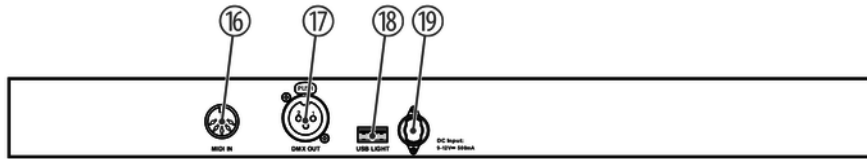
16	*[MIDI]*
	MIDI input socket
17	*[DMX OUT]*
	DMX output socket to connect a dimmer or other DMX-controlled devices
18	*[USB LIGHT]*
	USB port for attachment of e.g. a goose neck lamp
19	*[DC INPUT]*
	Connection socket for the 9 V power supply unit

6   Basics

This chapter provides basic information about the data transmission using the DMX protocol.

Signal transmission

DMX signals are generated by a DMX controller. The signals are transferred over a DMX cable to the connected devices. Each connection can transmit up to 512 channels. For each channel, a value between 0 and 255 is being transmitted. The 512 channels form a so-called 'DMX universe'.

Cabling

DMX devices are connected serially, that means the sending device transmits signals to all connected receivers (daisy chain). The order of the receivers in the daisy chain does not matter since all devices filter and process the relevant data independently from each other.

To create the daisy chain, the DMX input of the first receiver is connected to the DMX output of the controller or another DMX master. The output of the first receiver is connected to the input of the second one, and so on. The output of the last receiver in the DMX chain must be terminated using a resistor (110 Ω, ¼ W).
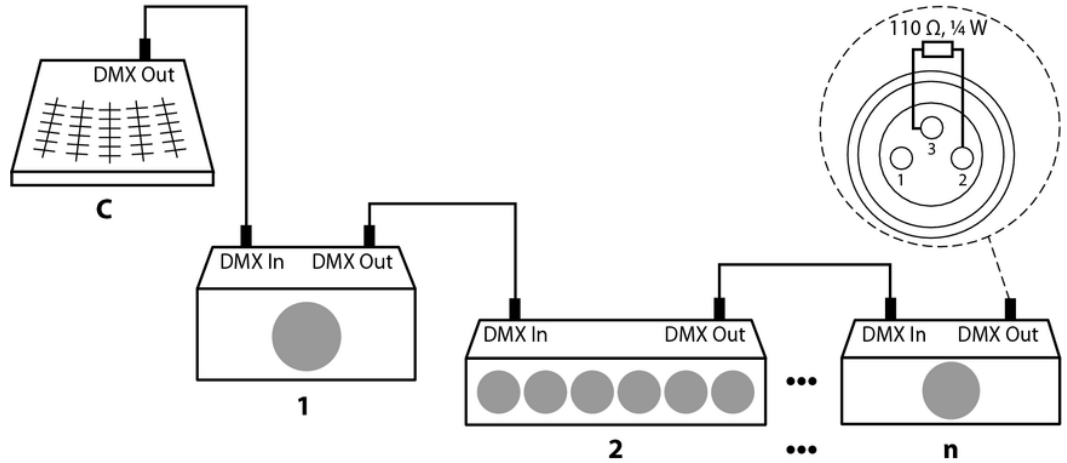
If the cable length exceeds 300 m (328 yds.) or the number of devices is greater than 32, the signal must be amplified using a DMX booster.

Signal processing

Each DMX devices operates on a specific number of channels to transfer the incoming control signals into movements, changing of light intensity or colour, and so on. Since all receivers that are part of a DMX daisy chain receive all signals, a start address must be assigned to each DMX device. Starting from this address (a value between 0 and 512) the incoming signals are being evaluated and transferred into the functions of the receiver (internal channel assignment).

It is no problem to use a start address more than once in a DMX chain. In that case, the relevant receivers operate synchronously (identical movement, light intensity, colour, and so on).

Addressing

When setting the DMX address, the counting method of the device determines the first channel. Depending on the device, the channel numbers may start from 0 or from 1. The address range may therefore reach from 0 to 511 or from 1 to 512.

7 Operating

7.1 Introduction

With the DC-1216, you can control up to twelve devices with up to 16 DMX channels per device. 30 banks with each eight programmable scenes are available as program memory. You can programme six chases, each with up to 240 programmed scenes.

7.2 Enabling programming mode

As soon as you connect the unit to the power supply, the manual mode will be automatically activated. To switch to the programming mode, press *[Program]* for three seconds. The LED *[PROG]* in the display will start flashing, thus indicating that you are now in programming mode. In programming mode, you can program scenes and chasers.

7.3 Programming scenes

1. ▶ Enabling programming mode.

2. ▶ Press one of the *[SCANNERS]* buttons to turn on the Fader control for the corresponding scanner. The LED next to the selected *[SCANNERS]* button lights up. You can select several scanners at a time.

3. ▶ Use the faders to set the desired DMX values.

4. ▶ With *[Page Select]* you can switch from the first level *[PAGE A]* to the second level *[PAGE B]* to programme channels 9 – 16.

5. ▶ Press *[Midi/Rec]* to save the programmed scene.

6. ▶ Use *[BANK UP/DOWN]* to select the bank in which you want to save the scene. 30 banks with each eight memory locations are available.

7. ▶ To save the scene to the desired location, press the corresponding *[SCENES]* button (1 – 8). All LEDs and the display will briefly flash, indicating that the scene has been saved. Then the display shows Bank and Scene.

8. ▶ Repeat steps 3 – 7 until all desired scenes have been saved. Finally, press the *[SCANNERS]* button to turn off fader control.

9. ▸ Once the programming is completed, press *[Program]* for three seconds. The LED *[PROG]* goes out in the display and indicates that you have quit the programming mode. After exiting, the *[BLACK OUT]* function is automatically activated.

Altering scenes

1. ▸ Enabling programming mode.

2. ▸ Use *[BANK UP/DOWN]* to select the bank with the scene you want to alter.

3. ▸ Use *[SCENES]* to select the desired scene.

4. ▸ Use the faders to make the desired changes.

5. ▸ Press *[Midi/Rec]* to save the settings.

6. ▸ Press the respective *[SCENES]* button to overwrite the former scene.

> *Make sure that you select the same scene in steps 3 and 6 to avoid accidentally overwriting the wrong scene!*

Copying scene

1. ▶ Enabling programming mode.
2. ▶ Use *[BANK UP/DOWN]* to select the bank with the scene you want to copy.
3. ▶ Use *[SCENES]* to select the scene to be copied.
4. ▶ Press *[Midi/Rec]*.
5. ▶ Use *[BANK UP/DOWN]* to select the bank to which the scene is to be copied.
6. ▶ Press *[SCENES]* to save the copied scene to the desired memory location.

Deleting a scene

1. ▶ Enabling programming mode.
2. ▶ Use *[BANK UP/DOWN]* to select the bank with the scene you want to delete.
3. ▶ Use *[SCENES]* to select the scene you want to delete.
4. ▶ Keep *[Auto/Del]* pressed. Simultaneously press the *[SCENES]* button of the scene you want to delete.

   ⇨ The selected scene is being deleted. All DMX values of the selected scene are set to zero.

Deleting all scenes

1. ▸ Disconnect the unit from the power supply.

2. ▸ Simultaneously press *[Program]* and *[BANK DOWN]* and keep the buttons pressed.

3. ▸ Reconnect the device to the power supply while keeping *[Program]* and *[BANK DOWN]* pressed simultaneously.

   ⇨ All stored scenes are being deleted. All DMX values of all scenes are set to zero.

Copying bank

1. ▸ Enabling programming mode.

2. ▸ Use *[BANK UP/DOWN]* to select the bank to be copied.

3. ▸ Press *[Midi/Rec]*.

4. ▸ Use *[BANK UP/DOWN]* to select the bank to be copied to.

5. ▸ Press *[Music/Bankcopy]*. All LEDs will flash and thus confirm the copying of the Bank.

6. ▸ Press *[Program]* to exit the programming mode.

7.4 Programming chase

In order to programme chases, scenes must have been previously programmed. Each Chase can contain up to 240 scenes.

1. ▶ Enabling programming mode.

2. ▶ Use *[CHASE 1 – 6]* to select the chase to be programmed. Only one chase can be selected at a time.

3. ▶ Select the desired scene from a bank.

4. ▶ Press *[Midi/Rec]*.

5. ▶ Repeat steps 3 and 4 until all desired scenes are stored in the chase.

Storing an entire bank to a chase

1. ▶ Enabling programming mode.

2. ▶ Select a chase with *[CHASE 1 – 6]* .

3. ▶ Use *[BANK UP/DOWN]* to select the bank with the scenes to be copied.

4. ▶ Press *[Music/Bankcopy]*.

5. ▶ Press *[Midi/Rec]*.

   ⇨ The scenes are copied to the chase in the order they are placed. All LEDs flash to confirm.

> *If the bank selected in step 3 contains non-programmed scenes, they will be saved to the chase as empty scenes.*

Adding step

1. ▶ Enabling programming mode.

With *[Tapsync/Display]* you can switch between different display masks. Press *[Tapsync/Display]* to display the chase and the current step. Press *[Tapsync/Display]* again to display the scene and the bank.

2. ▶ Select the Chase, you want to add a step to.

3. ▶ Press *[Tapsync/Display]*to display the chase and the current step.

4. ▶ Use *[BANK UP/DOWN]* to select the step to which you want to add a step.

5. ▶ Press *[Midi/Rec]* to add a new step.

Use *[BANK UP/DOWN]* and *[SCENES]* to select the desired new scene from a bank.

6. ▶ Press *[Midi/Rec]*.

⇨ The selected scene is inserted as a new step at the desired location. All subsequent scenes are moved one step backward.

Deleting step

1. ▶ Enabling programming mode.

2. ▶ Select the step to be deleted in a chase.

3. ▶ Press *[Auto/Del]*.

⇨ The selected scene is being deleted. All subsequent scenes are moved one step forward.

Deleting chase

1. ▶ Enabling programming mode.

2. ▶ Select the chase you want to delete.

3. ▶ Keep *[Auto/Del]* pressed and then simultaneously press again the desired *[CHASE]* button.

⇨ The selected chase is being deleted.

Deleting all chases

1. ▸ Disconnect the unit from the power supply.

2. ▸ Simultaneously press *[Auto/Del]* and *[BANK DOWN]* and keep the buttons pressed.

3. ▸ Reconnect the device with the buttons pressed to the power supply.

   ⇨ All chases are being deleted.

7.5 Calling up scenes

Manual mode

1. ▸ As soon as you connect the device to the power supply, it is automatically in manual mode.

2. ▸ Make sure that the LEDs *[Auto trigger]* and *[Music trigger]* do not light in the display.

3. ▸ Use *[BANK UP/DOWN]* to select the bank containing the desired scenes.

4. ▸ Press the respective *[SCENES]* button to select the desired scene.

Auto mode

With this function, you can run a bank of scenes in an endless loop.

1. ▶ Make sure that the device is in manual mode. Press *[Auto/Del]*to enable the Auto mode. The LED *[Auto trigger]* in the display indicates that the mode is active.

2. ▶ With *[BANK UP/DOWN]* to select a bank with scenes for the run.

3. ▶ Use *[Tapsync/Display]* or the fader *[SPEED]* to adjust the running speed.

Use the fader *[FADE TIME]* to set the fade time.

4. ▶ Press *[Auto/Del]* again to exit the mode.

Sound control

1. ▶ Press *[Music/Bankcopy]* to enable the sound control. The LED *[Music trigger]* in the display indicates that the mode is active.

2. ▶ Use *[BANK UP/DOWN]* to select the desired bank. The scenes are now running in an endless loop according to the rhythm of the music which the device perceives via the built-in microphone.

3. ▶ Use the fader *[FADE TIME]* to set the fade time.

4. ▶ Press *[Music/Bankcopy]*to exit the mode.

7.6   Calling chases

Manual mode

1. ▶ When you connect the device to the power supply, it is automatically in manual mode.

2. ▶ Press one of the six *[CHASE]* buttons to select the desired chase. If you press the button again, you disable this function.

3. ▶ With *[BANK UP/DOWN]* you can call the steps of the chase one by one.

Auto mode

1. ▶ Press *[Auto/Del]* to enable the Auto mode. The LED *[Auto trigger]* in the display indicates that the mode is activated.

2. ▶ Press one of the six *[CHASE]* buttons to select the desired chase. If you press the button again, you disable this function.

3. ▶ Use *[Tapsync/Display]* or the *[SPEED]* fader to adjust the chase as desired.

You can select several chases at a time. The chases run in the sequence in which you select them.

Sound control

1. ▶ Press *[Music/Bankcopy]* to enable the sound control. The LED *[Music trigger]* in the display indicates that the mode is active.

2. ▶ Press one of the six *[CHASE]* buttons to select the desired chase. The chase is then controlled by the rhythm of the music. You can select several chases at a time.

7.7 The MIDI functions

MIDI control

To enable MIDI control, connect a MIDI device, e. g. a MIDI keyboard, to the DMX controller.

Via MIDI you can you switch between the banks at any time in Auto mode and Music control mode.

MIDI channel setting

1. ▶ Press and hold *[Midi/Rec]* for three seconds. The third and fourth digits in the display flash.

2. ▶ With *[BANK UP/DOWN]* you can select a DMX channel 01 - 16 that you assign as MIDI channel.

3. ▶ Press and hold *[Midi/Rec]* again to save the setting. If you do not want to save the setting, press any key (except *[BANK UP/DOWN]*) to exit the MIDI mode.

Control

This device receives 'Note on' signals. These signals allow calling up of 15 banks (01 - 15) with scenes and six chases with scenes. In addition, also the Blackout function can be controlled via MIDI.

Bank	Note number	Function
Bank 1	00 … 07	Scenes 1 - 8 of bank 1 on / off
Bank 2	08 … 15	Scenes 1 - 8 of bank 2 on / off
Bank 3	16 … 23	Scenes 1 - 8 of bank 3 on / off
⋮	⋮	⋮
Bank 14	104 … 111	Scenes 1 - 8 of bank 14 on / off
Bank 15	112 … 119	Scenes 1 - 8 of bank 15 on / off
Chase 1	120	Chase 1 on / off
Chase 2	121	Chase 2 on / off
Chase 3	122	Chase 3 on / off
Chase 4	123	Chase 4 on / off

Bank	Note number	Function
Chase 5	124	Chase 5 on / off
Chase 6	125	Chase 6 on / off
BLACKOUT	126	Blackout

8   Technical specifications

Control protocols	DMX-512 Scan	
Number of devices to be connected	12 scanners with max. 16 DMX addresses	
Input connections	MIDI	1 × DIN socket, 5-pin
	USB port	USB port for attachment of e.g. a goose neck lamp
	Power supply	Connection socket for the 9 V power adapter
Output connections	DMX control	XLR chassis socket, 3-pin
Power supply	Power adapter (9 V – 12 V ⎓ / 500 mA, centre negative)	
Installation	19", 3 RU	
Dimensions (W × H × D)	483 mm × 132 mm × 35 mm	
Weight	3.5 kg	
Ambient conditions	Temperature range	0 °C…40 °C
	Relative humidity	50 %, non-condensing

Further information	
Preset function	No
External storage option	No
DMX universes	1
Max. number of control channels	192
Ethernet	No

9 Plug and connection assignment

Introduction

This chapter will help you select the right cables and plugs to connect your valuable equipment so that a perfect light experience is guaranteed.

Please take our tips, because especially in 'Sound & Light' caution is indicated: Even if a plug fits into a socket, the result of an incorrect connection may be a destroyed DMX controller, a short circuit or 'just' a not working light show!

DMX socket

A female 3-pin XLR socket is used for the DMX output. The figure and the table below show the pin assignment.

Pin	Assignment
1	Ground (shielding)
2	Signal inverted (DMX−, 'cold')
3	Signal (DMX+, 'hot')

10   Protecting the environment

Disposal of the packaging material

For the transport and protective packaging, environmentally friendly materials have been chosen that can be supplied to normal recycling.

Ensure that plastic bags, packaging, etc. are properly disposed of.

Do not just dispose of these materials with your normal household waste, but make sure that they are collected for recycling. Please follow the notes and markings on the packaging.

Disposal of your old device

This product is subject to the European Waste Electrical and Electronic Equipment Directive (WEEE) in its currently valid version. Do not dispose with your normal household waste.

Dispose of this device through an approved waste disposal firm or through your local waste facility. When discarding the device, comply with the rules and regulations that apply in your country. If in doubt, consult your local waste disposal facility.