

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

INTEROFFICE COMMUNICATION

TO: Josh Scheels, Project Manager, Warren District Office
Remediation and Redevelopment Division

FROM: Mike Priebe, Geological Technician, Drone Pilot (FAA #4325636) *Mike Priebe*
Geological Services Section, Remediation and Redevelopment Division (KZ)

DATE: March 4, 2020

SUBJECT: Revere Copper & Brass, Wayne County, Site ID #82000136, GSS Job #973
Drone Site Investigation

This memorandum is for work requested by the Department of Environment, Great Lakes, and Energy (EGLE), Remediation and Redevelopment Division's (RRD's), Warren District Office for the subject site located at 5851 West Jefferson Avenue, in the city of Detroit, Wayne County, Michigan.

This report includes the following:

- Site Image Northwest-Image 1 (Appendix A)
- Site Image North-Northeast-Image 2 (Appendix A)
- Site Image East-Southeast-Image 3 (Appendix A)
- Site Map (Fig 1)
- Contour Site Map (Fig 2)

On January 29, 2020 RRD's Geological Services Section (GSS) conducted drone flights over the subject site. There were four drone flights flown over the site that utilized ground control points to more accurately display the final images. Staff used a DJI Matrice 210 drone with a Zenmuse X4S camera to collect the images.

The first flight consisted of determining the height of the light post that is located on the north side of the area of concern, near the river (it is approximately 100 feet tall). Images of the area of concern were captured from different sides to show the current status of the silt fencing in the Detroit River and the general site conditions (Appendix A). These images were sent directly to the district project manager for immediate use the same day as the flights. The remaining flights were programmed missions utilizing Pix4D Capture on an iPad to be able to produce different orthomosaic images and contour lines.

The second flight was a single grid with the camera at a 90° angle. The third flight was a double grid with the camera at an 80-degree angle. This double grid is accomplished with one grid that has flight lines flying a north-south pattern and then turning 90° and flying east-west lines. This type of flight is usually used to generate 3D imagery or contour lines of a site.

After viewing the images that were captured with the two previous flights, it was noticed that the leg of the drone was in a good majority of the images. A secondary, single-grid flight (flight four) was flown with a camera angle of 70 degrees just to make sure the drone leg was not in them. A high resolution orthomosaic image can be created of the site.

Once the 128 images of the second flight were processed in Pix4D mapper, the program created a high-resolution, aerial image of the current site conditions (Fig 1). The third flight (dual grid flight) consisted of 229 images. This produced a high-resolution, 3D aerial orthomosaic of the site as well as contour lines relative to the ground control points (GCPs). GCPs are large marked targets on the ground that are placed throughout the flight area. The elevation and location of these GCPs were measured with a R10 Trimble survey grade global positioning system (GPS) (Fig 2).

If you have any questions, contact me at 517-243-3176.

Attachments

cc: Burrell P. Shirey, EGLE
Scott Densteadt, EGLE
Jeff Pincumbe, EGLE

APPENDIX A

Revere Copper & Brass, Wayne County
Site ID #82000136

EGLE Drone Images

Revere Copper & Brass,
Wayne County



Image 1, Site Image Northwest

Revere Copper & Brass,
Wayne County



Image 2, Site Image North-Northeast


Revere Copper & Brass,
Wayne County



Image 3, Site Image East-Southeast



LEGEND

 Ground Control Points

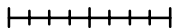
DATUM - NAD83
PROJECTION: MICHIGAN GEOREF
NORTHING AND EASTING COORDINATES (IN METERS)
ARE IN CORNERS OF MAP

FLIGHT ON 1/29/2020 WITH DJI MATIRCE 210
DJI ZENMUSE X4S CAMERA

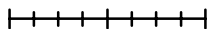
AERIAL PHOTO SOURCE: ArcGIS



0 5 10 20 Meters



0 20 40 80 Feet



1 inch = 78 feet

Revere Copper and Brass

SITE ID 82000136

CITY OF DETROIT, WAYNE COUNTY
T2S R11E SECTION 25

SITE MAP

DRONE PILOT
MIKE PRIEBE
Geological Services
Section



CREATION DATE
February 13, 2020

Remediation and
Redevelopment
Division

FIGURE 1



LEGEND

— Contour Line

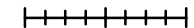
DATUM - NAD83
PROJECTION: MICHIGAN GEOREF
NORTHING AND EASTING COORDINATES (IN METERS)
ARE IN CORNERS OF MAP
CONTOUR LINES IN 1 FOOT INTERVALS RELATIVE TO
MEAN SEA LEVEL

FLIGHT ON 1/29/2020 WITH DJI MATIRCE 210
DJI ZENMUSE X4S CAMERA

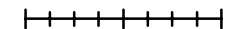
AERIAL PHOTO SOURCE: ArcGIS



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CONTOUR SITE MAP

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FIGURE 2