

From: [Elijah Welch](#)
To: [IDEM OLO Solid Waste Permits Submittals](#)
Cc: [Pat Smoker](#); [Darren Duncan](#); [Elijah Welch](#)
Subject: New Paris Pike Landfill Annual Contour Update FP #89-02
Date: Friday, June 14, 2024 2:01:48 PM
Attachments: [2023 Landfill Airspace Calcs worksheet.pdf](#)
[2023 NEW PARIS PIKE LANDFILL COVER LETTER.pdf](#)

**** This is an EXTERNAL email. Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email. ****

See attached. These files, in addition to the CAD file, may be downloaded using the link below. If you have any issues with the download, please let me know.

<https://drive.google.com/drive/folders/19JSPxeWmSSMIIPgQoKdLfpK4GTRcnOZD?usp=sharing>

Thanks,

Elijah W. Welch, P.E. | District Engineer
Richmond Sanitary District
2380 Liberty Ave.
Richmond, IN 47374
Office 765.983.7483
Mobile 765.969.1590

New Paris Pike Landfill Airspace Calculations

Prepared by the Richmond Sanitary District

June 14, 2024

1. Airspace Consumed Between March 16, 2023 and April 8, 2024:

Volume of airspace consumed	133,528 cubic yards ¹
Tonnage of waste disposed	83,177 tons ²

2. Estimated Density of Airspace Consumed:

	83,177 tons
	133,528 cubic yards
Waste per cubic yard of airspace (in tons)	0.63 tons
Waste per cubic yard of airspace (in pounds)	1260 lbs

3. Estimated Volume of Permitted Airspace Remaining in Phases 3 and 4:

a. Total permitted airspace in Phases 3 and 4	11,067,355 cubic yards ³
b. Estimated volume of permitted airspace remaining in Phases 3 and 4	7,488,073 cubic yards ⁴
c. Estimated volume of airspace remaining in presently constructed cells	2,453,980 cubic yards ^{5,7}
d. Estimated tonnage of waste remaining in presently constructed cells	
Average density over 10 of past 15 years	0.61 tons per cubic yard ⁸
Tons of waste	1,496,879 tons⁷

4. Estimated Remaining Life of Constructed Airspace

Average annual gate rate in <u>2023-2024</u>	83,177 tons
Estimated remaining life of constructed airspace	18.00 years⁷

5. Airspace Expiration

Date of Survey	4/8/2024
Remaining constructed airspace will be consumed by (latest date – based on filling to maximum permitted grades) ⁷	4/7/2042

6. Construction Schedule

The latest construction, 12.4+/- acres construction of Cell 4A/4B and Piggyback, was approved for use by IDEM on May 1, 20

Notes:

¹ Airspace was measured using an aerial topographic survey done on 3/19/2011, and a survey done on 3/15/2022. Topographic surface models were prepared with AutoCAD computer software; the difference between the two surface models represents the airspace consumed between the dates listed.

² Waste tonnage is from 2021 and 2022 New Paris Pike Landfill gate records

³ From Major Permit Modification Application, approved December 20, 2002

⁴ Estimated constructed volume of airspace remaining is calculated by subtracting the consumed airspace from the maximum permitted airspace in Phases 3A, 3B, 3C, 3D, 3E, 3F, 3G and 4C (see attached Airspace Consumption Estimate table)

⁵ Estimated permitted constructed volume of airspace remaining is calculated using Topographic surface models in AutoCAD, the difference between the two surface models represents the airspace remaining. This is reflected in the calculation for airspace remaining in the constructed cells (see attached Airspace Consumption Estimate table).

⁶ In accordance with 327 IAC 10, calculation 3(d) represents remaining permitted airspace in all currently constructed cells

⁷ These volumes assume filling to maximum permitted grades. Filling to these grades can't be accomplished before additional parts of phase 4 are constructed.

⁸ This is the average density calculated over 10 of the past 15 years. This density was used as it is believed to be a good average representation of the types of densities we can expect to achieve during filling.

Airspace Consumption Estimate

Total Permitted Airspace in Phases 3 and 4 11,067,355 cubic yards¹

Total Permitted Airspace in Phases 3A, 3B, 3C, 3D, 3E, 3F, 3G, 4C, 4A AND 4B 6,033,262 cubic yards²

Total Airspace consumed to date in Phases 3 and 4

Airspace Consumed Before 3/16/2023 3,445,754 cubic yards

Airspace Consumed Between 3/16/2023 and 4/8/2024 133,528 cubic yards

3,579,282 cubic yards³

Total Remaining Permitted Airspace in Phases 3 and 4

7,488,073 cubic yards⁴

Total Remaining Constructed Airspace in Phases 3A-3G, 4C, 4B, 4A

2,453,980 cubic yards⁵

Notes:

¹All airspace volumes are net volumes estimated at permitted final grades (excludes final cover and includes daily cover volumes).

²The total permitted airspace volume in Phases 3A, 3B, 3C, 3D, 3E, 3F, 3G and 4C is the net volume that is presently constructed. Therefore, this volume is the constructed airspace volume.

³The consumed airspace is located in Phases 3A, 3B, 3C, 3E, 3F, 3G and 4C. The airspace consumed volumes were estimated using AutoCAD computer software and survey work.

⁴The permitted airspace volumes were taken from the Major Permit Modification Application approved December 20, 2002.

⁵The Permitted volume remaining based on filling to the maximum permitted grades during filling.



RONALD OLER, PhD
Mayor

PATRICK SMOKER
Director

CITY OF RICHMOND

DEPARTMENT OF SANITATION
2380 LIBERTY AVENUE • RICHMOND, INDIANA 47374
PHONE (765) 983-7450 • FAX (765) 962-2669

Emailed to solidwastesubmittals@idem.in.gov

June 14, 2024

Indiana Department of Environmental Management
Office of Land Quality
100 N. Senate Ave.
Indianapolis, IN 46204-2251

RE: 2023/2024 Annual Contour Update as Required by 329 IAC 10-20-24
New Paris Pike Landfill - Richmond, Indiana

To Whom It May Concern:

Attached is an electronic drawing containing the annual survey which is being submitted on the above referenced landfill by the Richmond Sanitary District. The submittal follows the procedures outlined in IDEM's Guidance for the Submission of Landfill Contour Maps and in accordance with 329 IAC 10-20-24. Also, enclosed as a separate document are airspace calculations for the site. These were prepared by the Richmond Sanitary District.

If there are questions regarding these documents, please contact me at (765) 983-7483 or by e-mail at ewelch@richmondindiana.gov.

Sincerely,

A handwritten signature in blue ink that reads "Elijah W. Welch".

Elijah W. Welch, P.E.
District Engineer

Enclosures

cc: Patrick Smoker, RSD Director
Darren Duncan, Landfill Manager

2023 ANNUAL CONTOUR UPDATE AS REQUIRED BY 329 IAC 10-20-24

GRID NORTH



JUNE 14, 2024

GRAPHIC SCALE

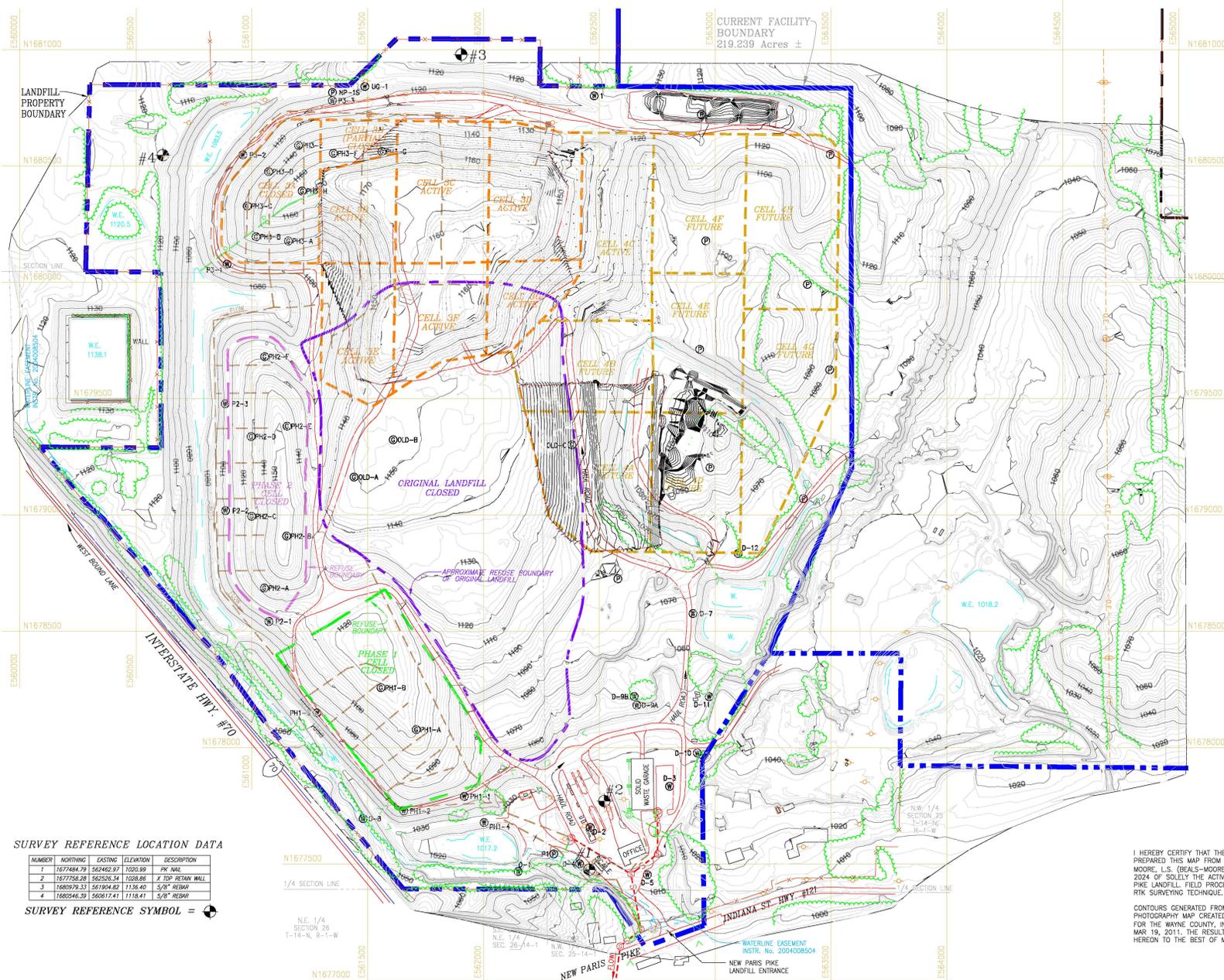


1 INCH = 200 FEET

CONTOUR INTERVAL: 2 FEET

Base Aerial Photography provided by:
Premier Geospatial, Inc., XeBAR Corporation
Arvada, CO 80007
DATE OF PHOTOGRAPHY:
MARCH 19, 2011

23,24,25,26 14N 1W Wayne Wayne Indiana
Sections Town Range Township County State



~ METADATA ~

Identification Information
Point of Contact:
Contact Information:
Contact Organization: Municipality of Richmond, Sanitary District
Contact Address:
Address Type: Mailing Address
Address: 2380 Liberty Avenue
City: Richmond
State: Indiana
Postal Code: 47374
Country: USA
Contact Voice Telephone: (765) 983-7450
Contact Facsimile Telephone: (765) 982-2669
Hours of Service: 8 am. - 4:30 p.m.

Data Quality Information
Positional Accuracy:
Horizontal Positional Accuracy:
Horizontal positions are established by GPS observations and are referenced to the North American Datum of 1983 (NAD83). The horizontal accuracy is plus or minus one (1) centimeter (0.03 ft.). This level of accuracy is consistent with GPS differential techniques which use two stations - a high-accuracy dual-frequency GPS receiver base station and a roving GPS station. The GPS base station is an established first-order accuracy topographic control monument located approximately 4 miles southwest of the northwest corner of North 5th Street and East Main Street in Richmond, Indiana. This digital map meets the requirements for the National Map Accuracy Standards for the scale of one (1) inch equals two-hundred (200) feet.
Vertical Positional Accuracy:
Vertical positions are established by GPS observations and are referenced to the North American Datum of 1983 (NAD83). The vertical accuracy is plus or minus two (2) centimeters (0.07 ft.) and is referenced to the North American Datum of 1988 (NAD 1988). This digital map meets the National Map Accuracy requirements for the two (2) foot contour interval.

Spatial Reference Information
Horizontal Coordinate System Definition:
Name:
Grid Coordinate System Name: State Plane Coordinate System 1983
State Plane Coordinate System:
SPCS Zone Identifier: 1501 (EAST ZONE)
Transverse Mercator:
Scale Factor at Central Meridian: 0.9999966667
Longitude of Central Meridian: -85.4
Latitude of Projection Origin: 37.4
False Easting: 320833.333 feet
False Northing: 820268.333 feet
Planar Coordinate Information:
Planar Distance Units: U.S. Survey Feet (1 U.S. Foot = 1200/3837 meter)
Geoid Model:
Horizontal Datum Name: North American Datum of 1983
Ellipsoid Name: Geoidetic Reference System 80
Semi-major Axis: 6378137
Denominator of Flattening Ratio: 294.9796962
Vertical Coordinate System Definition:
Name:
Vertical Datum Name: North American Vertical Datum of 1988
Altitude Datum Units: feet

IDEM INFORMATION
EPA ID: INDR4888745
MUNICIPAL SOLID WASTE PERMIT NO.: 89-02
CONSTRUCTION/DEMOLITION PERMIT NO.: 89-03

SURVEY REFERENCE LOCATION DATA

NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	1677484.79	562462.97	7020.59	PK. NAIL
2	1677758.28	562526.24	1028.88	X TOP STATION WALL
3	1680979.33	561904.82	7136.40	5/8" REBAR
4	1680246.39	560617.41	7118.41	5/8" REBAR

SURVEY REFERENCE SYMBOL =

I HEREBY CERTIFY THAT THE CITY OF RICHMOND, INDIANA ENGINEERING DIVISION HAS PREPARED THIS MAP FROM AN ACTUAL FIELD TOPOGRAPHICAL SURVEY BY GORDON MOORE, L.S. (BEALS-MOORE AND ASSOCIATES) ON APRIL 8, 2024 AND JUNE 10, 2024 OF SOLELY THE ACTIVE CELL AREAS AND NEAR VICINITY OF THE NEW PARIS PIKE LANDFILL. FIELD PROCEDURES WERE PERFORMED WITH GPS EQUIPMENT USING RTK SURVEYING TECHNIQUE.

CONTOURS GENERATED FROM THIS SURVEY WERE INSERTED INTO AN ORIGINAL AERIAL PHOTOGRAPHY MAP CREATED BY PREMIER GEOSPATIAL, INC., XEBAR CORPORATION FOR THE WAYNE COUNTY, INDIANA GEOGRAPHIC INFORMATION SYSTEM (GIS), DATED MAR 19, 2011. THE RESULTS OF MY TOPOGRAPHICAL SURVEY ARE REPRESENTED HEREON TO THE BEST OF MY BELIEF, PROFESSIONAL KNOWLEDGE AND ABILITY.

LEGEND OF MAP SYMBOLS

VEGETATION	LAYER	FEATURE DESCRIPTION	WATER FEATURES	LAYER	FEATURE DESCRIPTION	CULTURAL FEATURES	LAYER	FEATURE DESCRIPTION	CULTURAL FEATURES	LAYER	FEATURE DESCRIPTION	MISCELLANEOUS FEATURES	LAYER	FEATURE DESCRIPTION
	BUSH	INDIVIDUAL BUSHES.		WTR	WATER EDGE BOUNDARY USED FOR RIVER, STREAM AND DITCHES.		GAS VENT	GAS VENT		WALL	WALLS		SEC LINE	SECTION LINE
	INDTREE	INDIVIDUAL SMALL TREES.		WTR	POND AND LAKE EDGES. WATER ELEVATION ANNOTATIONS.		PIEZOMETERS	PIEZOMETERS		BRIDGE	BRIDGES		SEC TEXT	SECTION CORNER
	INDTREE	INDIVIDUAL MEDIUM SIZED TREES.		SWAMP	SWAMP AREAS WITH SYMBOLS.		MONITORING WELL	MONITORING WELL		RDD	UNPAVED ROADS		GRIDLINE	COORDINATE GRID LINES
	INDTREE	INDIVIDUAL LARGE SIZED TREES.					UTILITY POLE	UTILITY POLE.		BLDGS	COMMERCIAL, RESIDENTIAL BUILDINGS		FACILITY BND	FACILITY BOUNDARY
	TREES	TREE/BRUSH LINE EDGE.					MANHOLE	MAN HOLE WITH ANNOTATION		DRIVE	HALL ROADS		PL	LANDFILL PROPERTY LINE
							LTPOLE	LIGHT POLE WITH ANNOTATION		TANKS	TANKS			
							SIGN	SIGN WITH ANNOTATION		WALKS	PUBLIC SIDEWALKS.			
							GUARD RAIL	GUARD RAIL						
							FENCES	FENCES						



RICHMOND SANITARY DISTRICT
2380 Liberty Avenue
Richmond, Indiana 47374

Project: **2023 ANNUAL CONTOUR MAP**
New Paris Pike Landfill
5242 New Paris Pike
Richmond, Indiana

Scale: 1" = 200'
Date: 06/14/2024
Dwn. by: RSD/Beals-Moore
Dwn. by: Elijah Welch
Dwn. No.: LANDFILL ANNUAL TOPO 2023.DWG
Revision:



CERTIFIED BY:
DATE: 06/14/2024