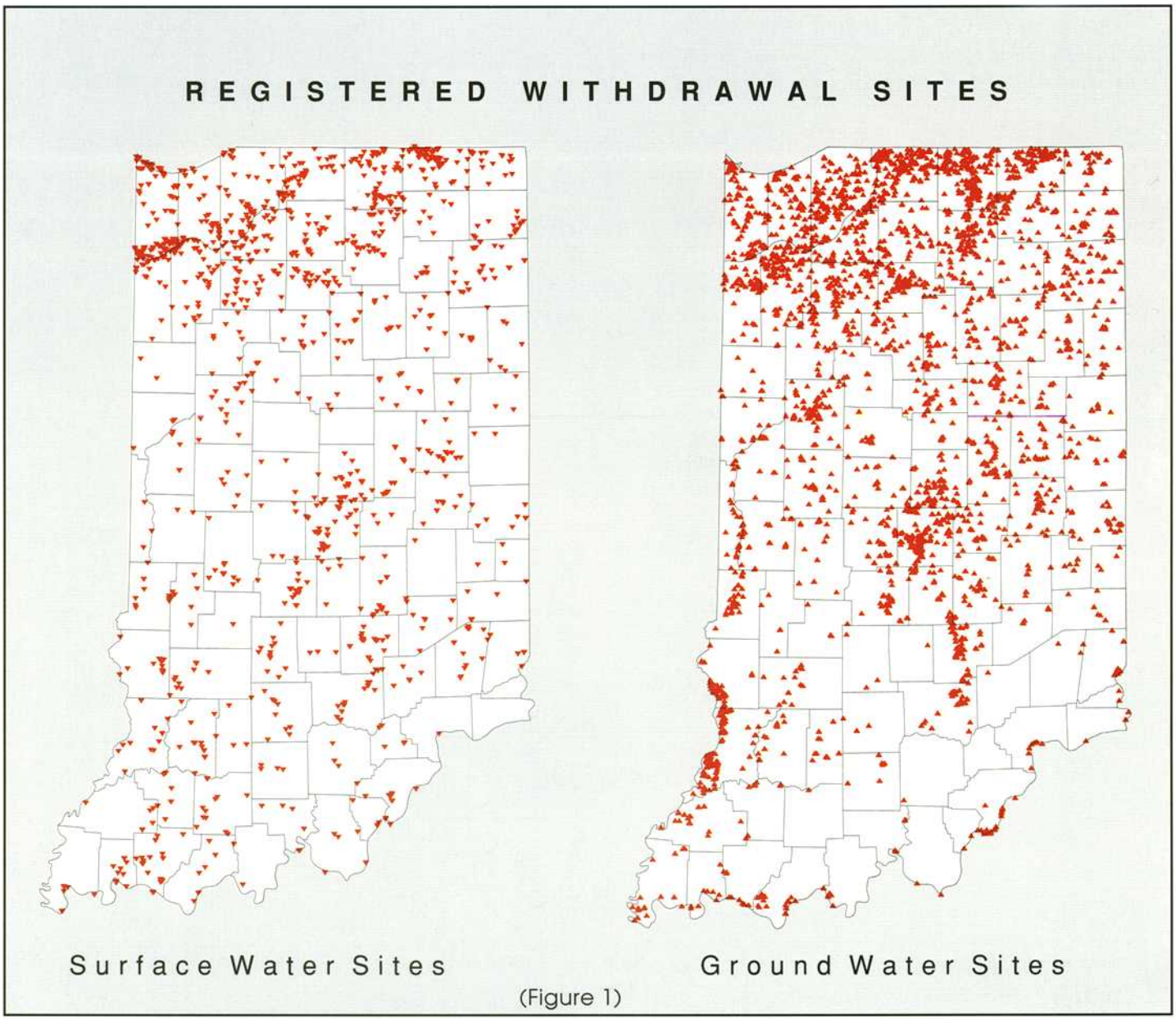
INDIANA'S WATER USE

1991 AND 1992



(Figure 1)

WATER. It is one of our most valuable resources. It is directly linked to the well-being of our communities, our economy, and most aspects of our everyday lives. An understanding of how we use our water is a key component in resolving many issues of the present and making plans for the future. This report is a continuation of a series that attempts to provide answers to the major questions about water use in Indiana.

Where do we get the water we use? Significant withdrawal facilities, those capable of withdrawing 100,000 gallons of water per day, are located throughout the Hoosier State. Some facilities use surface water from lakes and streams. Others pump ground water from wells. The locations of these facilities are shown on figure 1.

Patrick R. Ralston Director, D.N.R. * **David L. Herbst** Deputy Director, D.N.R. * **John N. Simpson** Director, Division of Water

Who maintains information about our water use? The Indiana Department of Natural Resources (IDNR), Division of Water, has been conducting an inventory of the State's significant water withdrawal facilities since 1984. Owners of these facilities register with IDNR, then provide withdrawal information to IDNR each year.

Who must register with IDNR and report their withdrawals? Indiana code 13-2-6.1 (Water Resource Management Act) mandates that owners of all wells and surface water intakes register with IDNR, Division of Water, if their facilities have the capacity of withdrawing 100,000 gallons or more of water per day--the equivalent of about 70 gallons per minute. These facilities are considered significant water withdrawal facilities. The mandate includes both stationary and portable pumps and facilities that have multiple smaller pumps with a combined capacity of 70 gallons per minute. If a facility has the capacity to withdraw this amount or more but actually withdraws a lesser amount, the facility is still required to register and report. New facilities must register within 90 days of installation. For more Information, facility owners should call 317-232-4160, or write to IDNR, Division of Water, at the address provided at the end of this report.

Who does not need to register and report their withdrawals? When the pumping capacity is less than 100,000 gallons per day (or less than about 70 gallons per minute), the facility is considered an exempt facility and the owner is not required to register with IDNR and report its withdrawals. Typically, pumps for homes have a combined capacity well less than 70 gallons per minute. In some situations, pumping capacities at some small businesses, small farms, or small-scale livestock operations may be less than 70 gallons per minute. Of all water withdrawn in Indiana in 1991 and 1992, it is estimated that about 2% is withdrawn by exempt facilities and, therefore, was not reported.

What if the facility is unsure of the amount water it withdraws? IDNR can provide assistance by explaining the established guidelines for estimating withdrawals and by suggesting some effective but practical options. IDNR asks that facility owners report the best estimates they can provide. At the present time, about 25% of the registered facilities utilize flowmeters for measuring water withdrawals, and the remainder estimate their withdrawal amounts using alternative methods. Upon request by facility owners who do not know their pump rate, IDNR may provide them assistance by measuring their pump rate with the use of a "clamp on" non-invasive pipe flowmeter. A noninvasive flowmeter requires no dismantling of pipes or other procedures that disrupt the facility's normal operations. Please call or write IDNR, Division of Water, for further information.

What is the difference between capacity and withdrawal? Capacity refers to the registered rating of the pumping equipment, and withdrawal refers to the actual amount of water pumped from the well or surface water intake. (Registered capacity at a site does not necessarily indicate that the water supply is sufficient to yield that amount.) A pump may withdraw less than its registered capacity for many reasons. For example, a facility may have a pump capacity of 100,000 gallons per day. But if that pump runs only half the time, the withdrawals may be just 50,000 gallons per day. The statewide registered capacity and reported withdrawals for 1991 and 1992 are shown in figure 2.

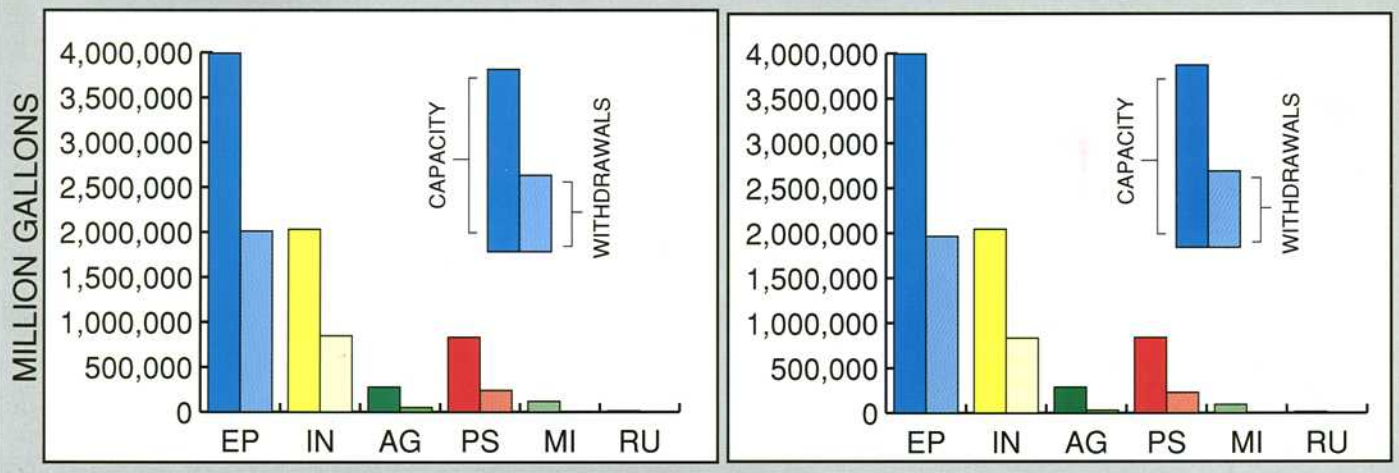
Can water be reused? Absolutely. For example, Energy Production accounts for the greatest amount of water withdrawn in Indiana, mostly for the purpose of cooling. It is estimated that about 98% of the water withdrawn for this category is returned to the source, making that water again available for use by others.

How do we use our water? Registered significant water withdrawal facilities have been divided into six general use categories, as listed below.

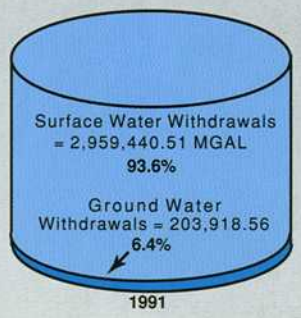
1. **Energy Production** (identified as **"EP"** at some places in this report)--Includes power generation, coal preparation, heating, and cooling. For EP 5,513 million gallons per day (MGD) were withdrawn in 1991, and 5,383 MGD were withdrawn in 1992.
2. **Industrial (IN)**--Includes process and cooling water, and sand and gravel operations. For IN 2,323 MGD were withdrawn in 1991, and 2,284 MGD in 1992.
3. **Agriculture (AG)**--Includes irrigation, golf courses, and field drainage. For AG 568 MGD was withdrawn in 1991, and 353 MGD in 1992. (A 90-day average is used for AG to more closely represent the irrigation season. Withdrawals for the other categories are based on a 365-day average.)
4. **Public Supply (PS)**--Includes water supply utilities, mobile home parks, and schools. For PS 660 MGD was withdrawn in 1991, and 631 MGD in 1992.
5. **Miscellaneous (MI)**--Includes construction dewatering, fish and wildlife areas, and lake-level maintenance. For MI 21.2 MGD was withdrawn in 1991, and 19.0 MGD in 1992.
6. **Rural Use (RU)**--Includes livestock watering and fish hatcheries. For RU 9.82 MGD was withdrawn in 1991, and 9.23 MGD in 1992.

	1991			1992		
CATEGORY	# OF REGISTRATIONS	# OF WELLS	# 0F INTAKES	# OF REGISTRATIONS	# OF WELLS	# 0F INTAKES
AGRICULTURE	1,819	1,735	867	1,914	1,856	890
PUBLIC SUPPLY	729	1,953	111	737	1,991	110
INDUSTRIAL	535	948	298	537	969	302
ENERGY PRODUCTION	112	193	130	112	197	132
MISCELLANEOUS	21	153	41	23	160	46
RURAL USE	101	55	12	124	60	12
TOTAL	**3,317**	**5,037**	**1,459**	**3,447**	**5,233**	**1,492**

REPORTED WITHDRAWALS AND REGISTERED CAPACITY

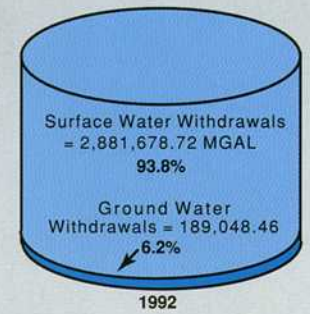


1991 (Figure 2) 1992



DURING 1991 OWNERS OF 3,317 REGISTERED FACILITIES REPORTED

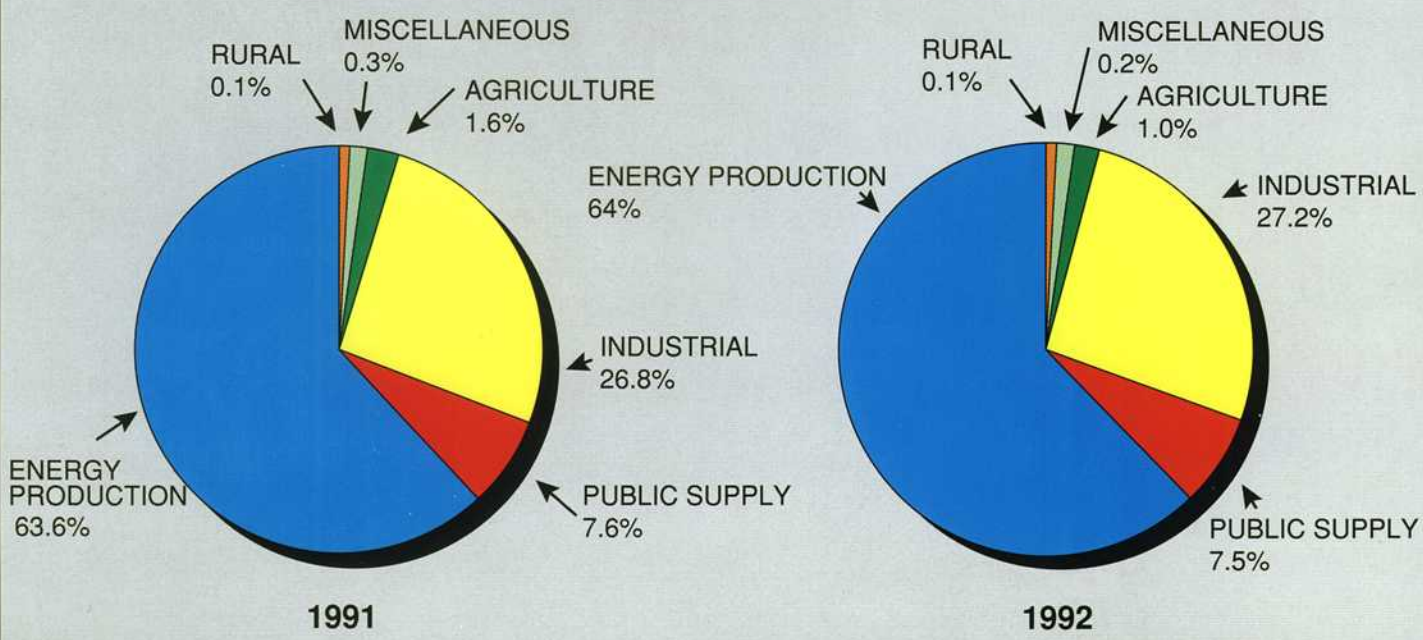
TOTAL WITHDRAWALS OF 3,163,359.07 MILLION GALLONS.



DURING 1992 OWNERS OF 3,447 REGISTERED FACILITIES REPORTED

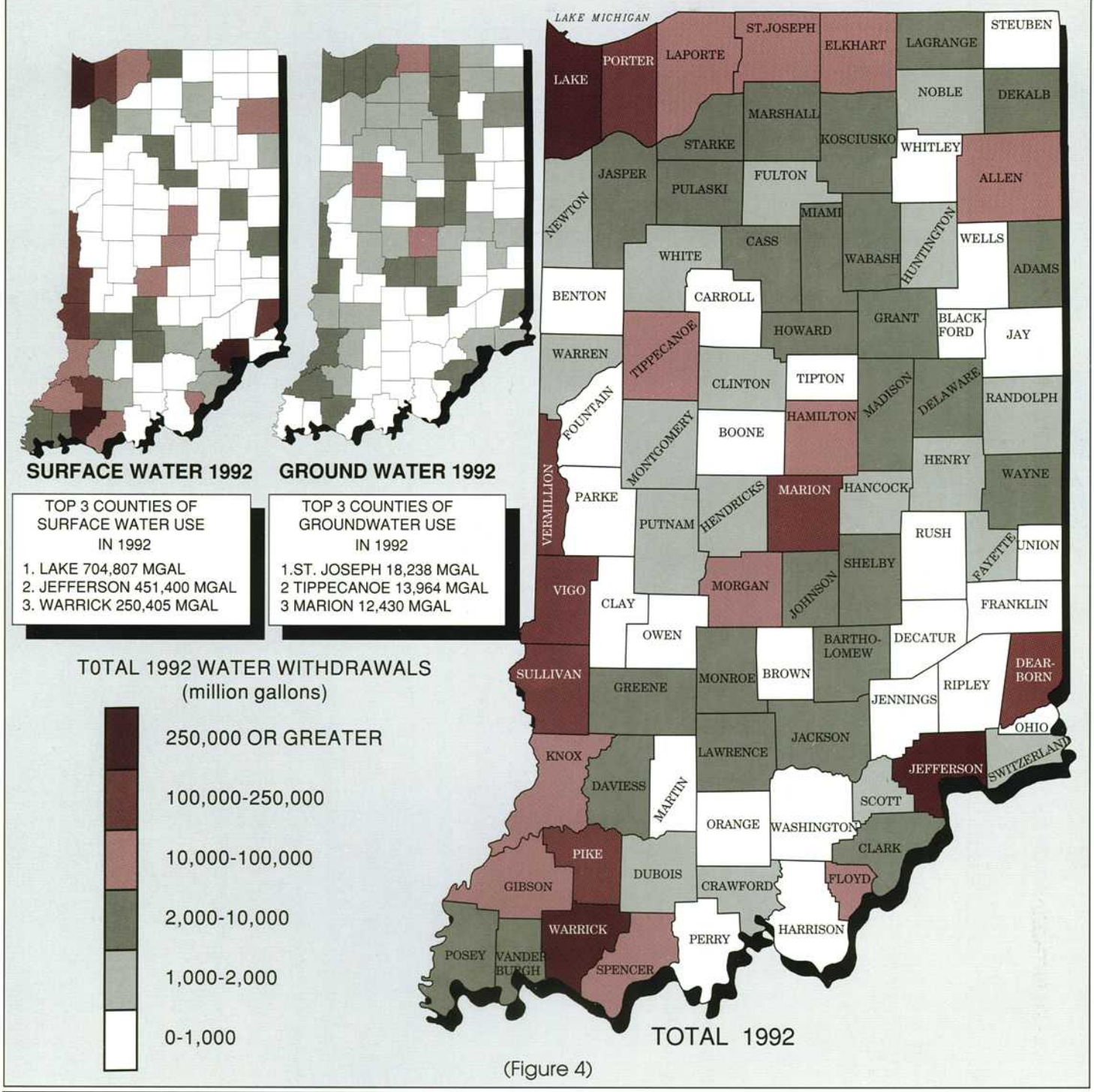
TOTAL WITHDRAWALS OF 3,070,727.18 MILLION GALLONS.

COMPARISON OF WITHDRAWALS BY CATEGORY

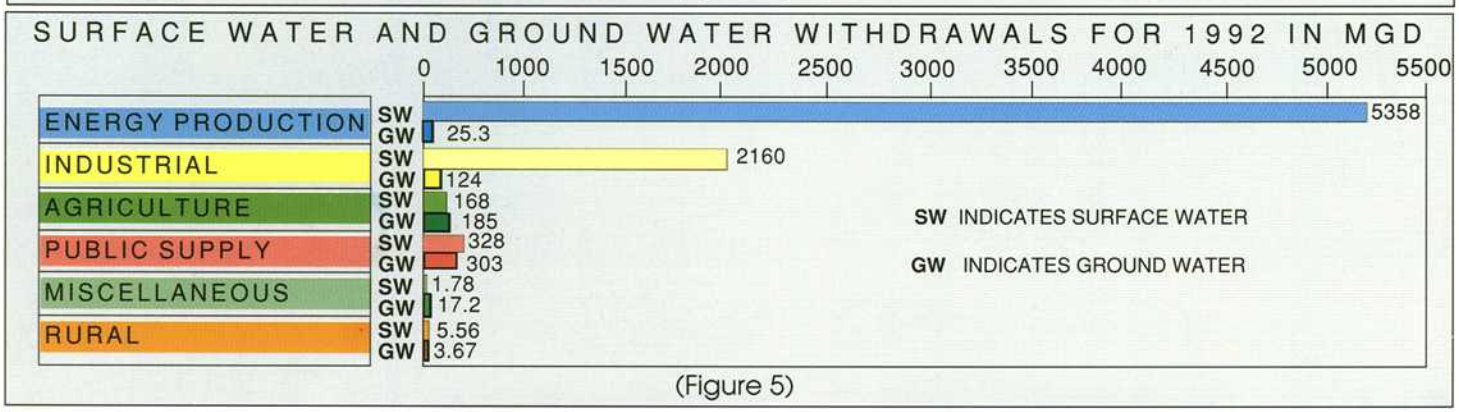


(Figure 3)

OVERALL WITHDRAWALS FOR 1992, INCLUDES ALL 6 CATEGORIES COMBINED



(Figure 4)



(Figure 5)

TABLE 1. WATER WITHDRAWALS BY COUNTY AND CATEGORY, 1991 AND 1992, IN MILLIONS OF GALLONS.

COUNTY	1991 SURFACE WATER TOTAL	1991 GROUND WATER TOTAL	1991 ENERGY	1991 INDUSTRY	1991 AGRICULTURE	1991 PUBLIC SUPPLY	1991 MISCELLANEOUS	1991 RURAL	1992 SURFACE WATER TOTAL	1992 GROUND WATER TOTAL	1992 ENERGY	1992 INDUSTRY	1992 AGRICULTURE	1992 PUBLIC SUPPLY	1992 MISCELLANEOUS	RURAL
ADAMS	979.65	405.92	122.70	939.82	37.95	285.10	0.00	0.00	1110.56	986.19	122.68	1049.91	30.71	893.46	0.00	0.00
ALLEN	15057.47	2102.69	108.84	3401.39	540.57	13109.17	0.20	0.00	14672.99	2010.92	109.40	3704.07	428.45	12408.44	0.00	33.55
BARTHOLOMEW	711.30	4982.92	4.41	1475.86	718.54	3482.48	12.93	0.00	673.91	4892.79	2.91	1406.83	440.36	3679.24	37.37	0.00
BENTON	0.00	212.82	0.00	0.53	0.00	212.30	0.00	0.00	36.45	178.63	0.00	0.11	36.45	178.52	0.00	0.00
BLACKFORD	103.05	754.29	0.00	290.26	4.34	562.74	0.00	0.00	102.74	791.71	0.00	285.46	0.85	608.15	0.00	0.00
BOONE	240.33	734.52	0.00	229.84	85.77	659.14	0.09	0.00	244.35	735.25	0.00	233.31	40.69	663.93	41.68	0.00
BROWN	25.76	0.00	0.00	0.00	0.00	25.37	0.39	0.00	37.75	0.00	0.00	0.00	0.00	37.38	0.37	0.00
CARROLL	242.23	425.04	0.00	193.75	66.51	407.00	0.00	0.00	201.56	503.63	0.00	174.92	43.10	487.17	0.00	0.00
CASS	11230.55	1260.60	9083.76	409.32	323.62	2674.43	0.01	0.00	6335.22	1089.53	4877.76	408.84	95.94	2042.16	0.05	0.00
CLARK	1144.39	5201.90	0.00	1599.83	12.10	4734.35	0.00	0.00	1889.95	5305.87	0.00	2388.66	1.81	4805.36	0.00	0.00
CLAY	303.32	293.81	292.36	10.96	0.00	293.81	0.00	0.00	249.50	277.35	234.96	14.54	0.00	277.35	0.00	0.00
CLINTON	0.00	1353.50	0.00	33.75	44.83	1274.92	0.00	0.00	0.00	1447.05	0.00	42.67	32.47	1371.91	0.00	0.00
CRAWFORD	1001.19	859.56	0.00	1001.19	0.00	859.56	0.00	0.00	753.86	723.63	0.00	753.86	0.00	723.63	0.00	0.00
DAVIESS	1117.09	1345.61	225.79	0.00	112.14	1229.51	1.68	893.58	1183.03	1077.08	391.04	0.00	38.36	1029.41	0.85	800.46
DEARBORN	176608.30	4095.53	176542.10	2726.77	46.40	1315.79	72.76	0.00	161369.29	3535.63	161311.20	2293.17	26.99	1235.76	37.80	0.00
DECATUR	586.86	337.35	0.00	17.00	18.55	888.67	0.00	0.00	555.54	333.05	0.00	20.00	11.01	857.59	0.00	0.00
DEKALB	197.17	1708.33	44.58	548.23	131.49	1181.20	0.00	0.00	296.85	1731.42	38.41	740.92	51.71	1197.23	0.00	0.00
DELAWARE	4110.06	1124.04	0.00	541.84	95.59	4593.63	3.04	0.00	3552.46	1309.04	0.00	522.01	71.75	4266.61	1.12	0.00
DUBOIS	2053.48	16.89	0.00	0.00	15.90	2049.47	5.00	0.00	1989.89	0.90	0.00	0.00	22.54	1962.00	6.25	0.00
ELKHART	3079.13	11331.30	11.11	3756.02	3979.36	5183.17	1463.01	17.75	964.87	9705.16	11.74	4024.17	1613.67	5000.97	6.97	12.51
FAYETTE	0.00	1493.15	0.00	0.42	2.03	1490.70	0.00	0.00	0.00	1324.24	0.00	0.37	1.31	1322.56	0.00	0.00
FLOYD	90546.93	368.07	88952.39	188.51	0.00	1774.10	0.00	0.00	78664.45	354.21	77196.10	172.63	0.00	1649.92	0.00	0.00
FOUNTAIN	7.16	665.89	0.00	244.93	32.74	389.95	5.42	0.00	14.56	827.69	0.00	453.18	10.25	365.51	13.31	0.00
FRANKLIN	32.03	407.48	0.00	73.89	12.03	353.59	0.00	0.00	38.47	352.45	0.00	96.27	7.47	287.18	0.00	0.00
FULTON	356.41	2330.61	0.00	14.89	2175.26	490.24	6.62	0.00	208.23	1693.50	0.00	3.79	1321.77	506.40	69.77	0.00
GIBSON	14010.89	2304.76	15347.75	0.00	38.22	929.68	0.00	0.00	10496.12	2418.89	11965.41	0.00	45.11	904.50	0.00	0.00
GRANT	954.09	2677.97	0.00	1041.79	40.55	2549.71	0.00	0.00	908.90	2635.60	0.00	1034.08	13.51	2496.92	0.00	0.00
GREENE	2175.17	1249.96	1474.17	292.30	589.99	1068.67	0.00	0.00	3176.09	1114.76	1898.47	266.60	1143.40	981.74	0.64	0.00
HAMILTON	13065.57	5277.01	4307.09	7348.62	345.39	4494.01	1847.45	0.00	14285.56	5467.32	4487.19	8011.11	299.78	5354.15	1600.67	0.00
HANCOCK	11.84	1037.52	0.00	45.07	25.84	978.44	0.00	0.00	6.53	1040.24	0.00	40.30	36.14	970.34	0.00	0.00
HARRISON	335.48	240.86	0.00	91.49	3.63	481.22	0.00	0.00	420.19	235.96	0.00	98.12	1.39	556.64	0.00	0.00
HENDRICKS	254.16	1426.58	47.81	261.89	112.29	1258.74	0.00	0.00	288.09	1482.15	34.04	278.31	130.87	1327.02	0.00	0.00
HENRY	344.48	1674.48	4.43	441.01	40.35	1533.18	0.00	0.00	285.48	1597.56	4.31	601.47	36.91	1240.35	0.00	0.00
HOWARD	3709.41	1886.61	0.00	677.51	95.05	4823.46	0.00	0.00	3989.80	1336.04	0.00	831.12	89.53	4405.19	0.00	0.00
HUNTINGTON	383.85	1349.82	1.38	379.07	26.77	1326.46	0.00	0.00	416.07	1239.90	0.99	411.79	23.28	1219.91	0.00	0.00
JACKSON	1245.23	1078.26	0.00	530.11	356.30	1380.26	3.91	52.91	1326.05	985.38	0.00	692.11	182.00	1409.29	5.13	22.90
JASPER	11835.32	2891.67	7021.90	1103.00	6221.97	380.04	0.08	0.00	5702.42	1708.03	1971.20	543.74	4531.02	364.42	0.07	0.00
JAY	201.14	655.61	0.00	302.67	16.80	537.28	0.00	0.00	200.63	678.56	0.00	328.69	10.22	540.27	0.00	0.00
JEFFERSON	462500.00	1606.53	462632.61	0.00	6.80	1467.12	0.00	0.00	451400.00	1578.77	451533.04	0.00	6.00	1439.73	0.00	0.00
JENNINGS	992.63	0.00	0.00	350.91	0.00	641.54	0.19	0.00	938.63	38.23	0.00	336.39	38.23	602.24	0.00	0.00
JOHNSON	50.89	3573.77	0.00	63.80	108.88	3407.64	44.35	0.00	22.69	3655.42	0.00	54.85	42.66	3145.17	435.43	0.00
KNOX	13174.49	2869.51	12900.51	241.19	1181.58	1720.19	0.53	0.00	14468.26	2473.72	14251.30	230.12	815.12	1645.24	0.20	0.00
KOSCIUSKO	1519.79	4497.27	0.00	2204.38	2413.22	1399.46	0.00	0.00	1234.83	3491.93	0.00	1685.47	1608.37	1430.14	2.06	0.72
LAGRANGE	1414.06	2386.91	0.00	14.11	2871.34	318.56	0.51	596.46	869.14	1169.26	0.00	106.47	1054.39	312.99	0.47	564.08
LAKE	774830.80	4783.63	267513.40	475825.12	4672.70	30513.18	1090.05	0.00	704806.84	6962.21	235435.80	443520.83	2722.28	29664.14	425.99	0.00
LAPORTE	46227.62	5521.17	40353.16	605.91	5221.49	4616.88	571.35	380.00	33727.51	4243.86	29565.77	213.73	3323.22	4289.32	256.26	323.07
LAWRENCE	2353.13	245.69	0.00	788.68	0.00	1743.91	0.00	66.24	2184.75	290.03	0.00	548.56	0.00	1825.28	0.00	100.93
MADISON	1478.21	4715.99	0.00	1405.59	140.28	4648.33	0.00	0.00	337.68	4699.25	0.00	195.33	67.74	4748.66	25.20	0.00
MARION	96971.55	13446.55	44884.03	16177.67	606.17	48084.80	665.44	0.00	92113.04	12430.42	38461.41	20950.54	611.25	43467.18	1053.08	0.00

(TABLE 1 CONTINUED)

COUNTY	1991 SURFACE WATER TOTAL	1991 GROUND WATER TOTAL	1991 ENERGY	1991 INDUSTRY	1991 AGRICULTURE	1991 PUBLIC SUPPLY	1991 MISCELLANEOUS	1991 RURAL	1992 SURFACE WATER TOTAL	1992 GROUND WATER TOTAL	1992 ENERGY	1992 INDUSTRY	1992 AGRICULTURE	1992 PUBLIC SUPPLY	1992 MISCELLANEOUS	RURAL
MARSHALL	512.05	1976.52	143.80	245.73	906.73	1192.31	0.00	0.00	548.95	1653.06	138.60	375.11	554.14	1134.16	0.00	0.00
MARTIN	341.19	1139.37	0.00	937.16	1.14	542.26	0.00	0.00	395.44	294.44	0.00	155.12	1.08	533.68	0.00	0.00
MIAMI	612.70	1257.18	172.80	252.71	359.44	1084.92	0.00	0.00	884.57	1145.68	549.70	301.85	110.90	1067.81	0.00	0.00
MONROE	4962.12	0.00	0.00	242.41	25.48	4694.22	0.00	0.00	4728.88	1.80	0.00	228.36	10.62	4491.70	0.00	0.00
MONTGOMERY	39.61	1525.63	59.93	289.95	63.46	1103.89	0.00	48.01	55.00	1512.89	93.15	325.78	20.41	1085.41	0.00	43.14
MORGAN	34520.34	2476.57	33743.00	522.95	41.75	1671.85	0.10	1017.27	31043.37	2241.67	29932.00	574.34	27.08	1767.49	0.03	984.09
NEWTON	521.70	1984.39	0.00	64.81	2153.80	252.16	0.00	35.33	255.44	837.51	0.00	0.00	796.40	262.58	0.00	33.97
NOBLE	120.69	1615.95	0.00	302.45	457.07	977.01	0.11	0.00	192.50	1479.79	0.00	392.05	239.30	1040.54	0.40	0.00
OHIO	0.00	199.86	0.00	0.00	0.00	199.86	0.00	0.00	0.00	186.78	0.00	0.00	0.00	186.78	0.00	0.00
ORANGE	457.66	118.48	0.00	2.16	16.72	507.04	45.00	5.21	477.12	109.16	0.00	18.43	8.36	514.79	38.00	6.70
OWEN	0.47	325.11	0.00	0.00	0.47	325.11	0.00	0.00	0.44	326.33	0.00	0.00	0.44	326.33	0.00	0.00
PARKE	33.93	311.92	0.00	0.20	19.39	326.26	0.00	0.00	36.49	144.06	0.00	0.19	13.11	167.25	0.00	0.00
PERRY	29.25	582.18	0.00	9.48	2.84	599.10	0.00	0.00	27.29	531.69	0.00	10.58	0.92	547.48	0.00	0.00
PIKE	163442.14	1720.62	164623.12	0.00	0.00	539.63	0.00	0.00	176826.23	1669.47	177968.24	0.00	0.00	527.46	0.00	0.00
PORTER	179078.31	5537.93	36853.60	140950.98	2265.62	4037.29	508.86	0.00	237659.57	4504.12	84739.40	150930.10	1568.86	4520.64	404.69	0.00
POSEY	5371.96	451.74	1735.30	3230.89	141.57	709.70	6.23	0.00	5180.02	361.57	1729.34	3197.87	80.67	526.10	7.62	0.00
PULASKI	1516.69	1910.02	0.00	806.36	2380.61	239.74	0.00	0.00	1375.03	1327.03	0.00	904.28	1547.98	240.99	8.82	0.00
PUTNAM	301.41	1433.58	0.00	298.13	3.40	1433.45	0.00	0.00	261.61	1358.95	0.00	299.65	8.33	1312.57	0.00	0.00
RANDOLPH	348.73	799.66	0.00	436.84	3.89	707.65	0.00	0.00	387.22	649.33	0.00	450.87	1.73	583.96	0.00	0.00
RIPLEY	878.41	58.79	0.00	125.51	0.43	808.82	0.00	2.45	831.77	53.26	0.00	107.85	0.19	775.68	0.00	1.32
RUSH	325.93	490.02	0.00	364.87	14.77	436.31	0.00	0.00	334.40	419.77	0.00	357.91	0.00	396.26	0.00	0.00
ST. JOSEPH	14457.10	18012.36	13244.49	3112.53	2956.41	11963.03	817.90	375.10	9371.87	18238.05	9707.03	2580.57	2372.85	10861.21	1751.73	336.54
SCOTT	1448.29	0.00	0.00	635.37	0.00	812.91	0.00	0.00	1606.11	0.00	0.00	863.16	0.00	742.95	0.00	0.00
SHELBY	495.88	2065.38	11.76	799.78	345.83	1264.75	139.14	0.00	727.19	1870.78	8.32	1018.17	32.65	1308.93	229.90	0.00
SPENCER	8854.42	958.10	8920.00	0.03	51.49	841.00	0.00	0.00	10812.18	753.93	10819.40	0.00	22.16	724.54	0.00	0.00
STARKE	1073.16	1566.37	0.00	2.41	2022.16	269.96	345.00	0.00	703.27	1328.38	0.00	2.93	1438.98	253.64	336.10	0.00
STEUBEN	200.96	704.52	5.66	49.42	226.31	557.36	10.18	56.54	139.87	614.79	5.53	57.74	121.86	505.79	14.25	49.49
SULLIVAN	180806.00	2567.60	182236.90	0.00	625.07	511.63	0.00	0.00	152710.00	1504.24	153458.40	0.00	278.64	477.19	0.00	0.00
SWITZERLAND	0.00	1384.93	0.00	1134.61	0.00	250.32	0.00	0.00	0.00	1398.86	0.00	1135.80	0.00	263.06	0.00	0.00
TIPPECANOE	966.70	14311.03	0.00	6971.60	462.33	7805.13	29.63	9.04	593.62	13963.80	0.00	6438.89	329.91	7729.29	35.57	23.76
TIPTON	0.00	411.04	17.21	4.73	0.00	389.11	0.00	0.00	0.00	399.17	14.08	4.79	0.00	380.31	0.00	0.00
UNION	29.19	85.29	0.00	13.68	3.70	84.41	12.69	0.00	21.72	81.10	0.00	0.73	1.58	80.36	20.13	0.00
VANDERBURG	10234.31	94.40	49.50	0.00	133.93	10140.56	4.73	0.00	9783.26	122.76	98.28	2.95	92.15	9692.09	20.56	0.00
VERMILLION	165483.94	4334.52	165075.83	4131.89	18.63	592.11	0.00	0.00	203232.39	4133.65	202836.04	3974.32	6.17	549.51	0.00	0.00
VIGO	167368.54	8176.36	165930.00	5013.86	97.35	4494.34	9.35	0.00	156903.80	8203.58	155831.41	4793.14	2.96	4464.20	15.67	0.00
WABASH	920.94	2689.54	0.00	1142.16	374.33	2093.99	0.00	0.00	644.12	2492.81	0.00	1011.68	133.01	1965.01	27.24	0.00
WARREN	0.00	1662.14	0.00	1444.10	9.13	208.91	0.00	0.00	0.00	1987.25	0.00	1753.41	27.06	206.78	0.00	0.00
WARRICK	249082.19	3161.38	107013.75	144195.68	27.64	1006.51	0.00	0.00	250404.69	2913.01	102254.37	150287.73	28.90	746.69	0.00	0.00
WASHINGTON	752.00	42.61	0.00	172.28	0.00	622.33	0.00	0.00	641.53	45.36	0.00	120.47	0.00	566.42	0.00	0.00
WAYNE	3296.29	1807.32	627.89	1346.12	164.34	2959.73	5.53	0.00	2908.49	1587.28	686.28	921.84	153.09	2729.17	5.40	0.00
WELLS	26.41	781.11	0.00	134.96	33.44	639.12	0.00	0.00	16.72	710.81	0.00	58.53	21.94	647.06	0.00	0.00
WHITE	655.12	1275.65	0.00	283.53	1049.02	569.02	0.00	29.20	169.55	1029.51	0.00	152.29	485.87	529.88	0.00	31.02
WHITLEY	100.12	701.47	0.00	225.85	102.48	473.09	0.17	0.00	35.26	700.56	0.00	218.65	34.19	482.92	0.06	0.00

PREPARED IN COOPERATION WITH U.S. DEPARTMENT OF THE INTERIOR, U.S. GEOLOGICAL SURVEY

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