



Ohio Department of
NATURAL RESOURCES



2020

Orphan Well Program Report



Monroe #1 Project, Gardner #1 Well, Plugged September 2020

Orphan Well Program Annual Report

January 1, 2020 to December 31, 2020

Calendar Year 2020

Introduction

Ohio Revised Code (ORC) 1509.071 establishes the Orphan Well Program and charges the Ohio Department of Natural Resources, Division of Oil and Gas Resources Management (Division) with plugging idle and orphaned wells, restoring land surfaces, and correcting conditions that cause imminent health or safety risks at idle and orphaned wells. ORC 1509.071(J) requires the Division and the Technical Advisory Council (TAC) to submit a written report to the Ohio Speaker of the House of Representatives, the President of the Senate, the Chair of the Committee of the House of Representatives Energy and Natural Resources Committee, and the Chair of the Committee of the Senate Agriculture and Natural Resources Committee, pertaining to the Orphan Well Program and specifies the contents of the report, including the following details:

- (a) The total number of known idle and orphaned wells in the state and the total number in each county of the state;
- (b) The total number of newly discovered idle and orphaned wells during the immediately preceding calendar year;
- (c) The total number of wells plugged in accordance with this section during the immediately preceding calendar year;
- (d) The total number of wells plugged in accordance with this section and the estimated average and indirect costs of plugging activities conducted under this section prior to the date of the report; and

(e) The number of wells approved for plugging in accordance with this section and the estimated average and indirect costs of plugging activities conducted under this section during the immediately preceding calendar year.

Idle and Orphaned Well Inventory

Table 1 below shows the inventory of idle and orphaned wells listed by county at the end of calendar years 2019 and 2020. The table also shows the number of wells added to the Division's inventory, wells removed from the program, wells plugged, and wells in contract to be plugged.

Table 1: Idle and Orphaned Well Inventory for Calendar Year 2020

County	Well Count 2019	Well Count 2020 ¹	Wells Added	Wells Removed from the Program	Wells Plugged ¹	Wells In Contract ¹
Adams	0	0	0	0	0	0
Allen	13	11	0	0	2	2
Ashland	39	37	0	0	2	0
Ashtabula	38	33	12	0	17	0
Athens	20	29	11	0	2	14
Auglaize	6	6	0	0	0	0
Belmont	2	7	5	0	0	0
Brown	0	0	0	0	0	0
Butler	0	0	0	0	0	0
Carroll	13	4	1	0	10	0
Champaign	2	2	0	0	0	2
Clark	1	1	0	0	0	1
Clermont	1	1	0	0	0	0
Clinton	0	0	0	0	0	0
Columbiana	33	26	9	0	16	21
Coshocton	15	14	2	0	3	0
Crawford	0	0	0	0	0	0
Cuyahoga	70	71	10	0	9	9
Darke	1	1	0	0	0	0

¹ Wells Awarded by Contract to be plugged remain in the Well Count until they become Wells Plugged. Wells Plugged have been removed from the Well Count.

County	Well Count 2019	Well Count 2020 ¹	Wells Added	Wells Removed from the Program	Wells Plugged ¹	Wells In Contract ¹
Defiance	2	2	0	0	0	0
Delaware	0	1	1	0	0	0
Erie	6	6	0	0	0	0
Fairfield	3	10	7	0	0	2
Fayette	0	0	0	0	0	0
Franklin	1	1	0	0	0	1
Fulton	7	1	0	0	6	0
Gallia	11	5	0	0	6	2
Geauga	5	2	1	0	4	0
Greene	0	0	0	0	0	0
Guernsey	10	11	5	0	4	3
Hamilton	0	0	0	0	0	0
Hancock	47	36	1	0	12	0
Hardin	3	3	0	0	0	0
Harrison	8	7	2	0	3	0
Henry	12	12	0	0	0	0
Highland	0	0	0	0	0	0
Hocking	10	3	0	0	7	2
Holmes	41	41	0	0	0	0
Huron	9	9	0	0	0	0
Jackson	4	1	0	0	3	0
Jefferson	6	9	5	0	2	0
Knox	17	15	0	0	2	0
Lake	21	27	7	0	1	1
Lawrence	5	4	0	0	1	4
Licking	25	25	0	0	0	0
Logan	1	1	0	0	0	0
Lorain	61	60	1	0	2	3
Lucas	1	1	0	0	0	0
Madison	0	0	0	0	0	0
Mahoning	22	24	2	0	0	0
Marion	1	0	0	0	1	0
Medina	39	56	17	0	0	13
Meigs	5	10	5	0	0	3
Mercer	21	21	0	0	0	0
Miami	1	1	0	0	0	0
Monroe	13	12	7	0	8	3

County	Well Count 2019	Well Count 2020 ¹	Wells Added	Wells Removed from the Program	Wells Plugged ¹	Wells In Contract ¹
Montgomery	0	0	0	0	0	0
Morgan	11	11	0	0	0	3
Morrow	7	6	1	0	2	0
Muskingum	5	9	4	0	0	6
Noble	13	15	3	0	1	5
Ottawa	7	3	0	0	4	0
Paulding	0	0	0	0	0	0
Perry	9	8	0	0	1	7
Pickaway	0	0	0	0	0	0
Pike	1	1	0	0	0	0
Portage	2	2	0	0	0	6
Preble	0	0	0	0	0	0
Putnam	1	1	0	0	0	0
Richland	6	5	0	0	1	0
Ross	1	1	0	0	0	0
Sandusky	19	18	0	0	1	0
Scioto	3	2	3	0	4	5
Seneca	26	36	10	0	0	0
Shelby	4	4	0	0	0	4
Stark	7	11	4	0	0	0
Summit	1	2	2	0	1	4
Trumbull	3	5	2	0	0	6
Tuscarawas	2	3	1	0	0	0
Union	0	0	0	0	0	0
Van Wert	5	5	0	0	0	0
Vinton	2	2	0	0	0	0
Warren	0	0	0	0	0	0
Washington	60	62	10	0	8	5
Wayne	10	10	0	0	0	0
Williams	1	0	0	0	1	0
Wood	70	79	12	0	3	2
Wyandot	11	11	0	0	0	0
Totals	959	972	163	0	150	139

¹ Wells Awarded by Contract to be plugged remain in the Well Count until they become Wells Plugged. Wells Plugged have been removed from the Well Count.

Contracts Awarded for Plugging Idle and Orphaned Wells

For the period beginning January 1, 2020 and ending December 31, 2020, the Division awarded \$10,538,310.83 in work to contractors to plug idle and orphaned wells. The projects awarded in the Orphan Well Program for the calendar year 2020 are summarized in Table 2. The Division approved \$195,723.12 for change orders to address unanticipated conditions encountered in the plugging of the wells. The change orders are summarized in Table 3. The Division completed one emergency mitigation project shown in Table 4. The total amount awarded in calendar year 2020 for orphan well plugging projects totaled \$10,750,033.95. Those contracts awarded the plugging work of 139 orphan wells at an average cost of \$77,338.37 per well.

Table 2: Idle and Orphaned Wells Awarded for Plugging for Calendar Year 2020

Project / County	Well Count	Producing Formations	Era of Production	Awarded Amount	Contractor
Allen #2	2	Trenton Limestone	1890s	\$189,970.00	HAD, Inc.
Athens #4	2	Clinton & Medina Sandstones	1980s	\$228,894.80	Unlimited Energy Services, LLC
Athens #5	7	Berea Sandstone	1940s and 1980s	\$278,955.47	Unlimited Energy Services, LLC
Athens #6	5	Berea Sandstone and Cow Run	Early 1900s	\$258,750.00	Triple B Services, LLC
Champaign #1	2	Trenton Limestone/ Black River	1960s	\$121,067.66	Huwer Drilling, LLC
Clark #1	1	Trempealeau Formation	1960s-1970s	\$63,025.00	Huwer Drilling, LLC
Columbiana #1 Emergency ¹	1	Berea Sandstone	1910s	\$53,200.00	Nick's Well Plugging, LLC
Columbiana #2 Emergency	2	Berea Sandstone	Early 1900s	\$191,730.00	GonzOil, Inc.
Columbiana #3 ¹	18	Berea Sandstone	Early 1900s-1950s	\$806,939.00	NuPointe Energy, LLC
Cuyahoga #10	3	Ohio Shale	Early 1900s	\$139,042.00	Ronald A. Gibson & Associates, Inc.
Cuyahoga #12	1	"Clinton" Sand	1920s	\$192,269.50	NuPointe Energy, LLC

Cuyahoga #9	5	"Clinton" Sand and Ohio Shale	Early 1900s	\$488,706.32	Unlimited Energy Services, LLC
Fairfield #1	2	Newburg Dolomite & Clinton Sandstone	Unknown	\$154,946.27	Nova Terra Well Services, LLC
Franklin #1	1	Ohio Shale	1980s	\$53,458.52	Nova Terra Well Services, LLC
Gallia #2	2	Clinton Sandstone	1920s and 1960s	\$246,766.92	Hydrocarbon Well Service, Inc.
Guernsey #3	3	"Clinton" Sand	1960s-1970s	\$313,640.00	Huffman-Bowers, Inc.
Hocking #3	2	Big Injun Sandstone	1990s and unknown	\$122,614.00	NuPointe Energy, LLC
Lake #7 Emergency	1	Ohio Shale	Early 1900s	\$55,366.00	Keystone Wireline, Inc
Lawrence #4	3	Cow Run Sandstone and "Clinton" Sand	Early 1900s, 1960s, & 1980s	\$292,009.60	Hydrocarbon Well Service Inc.
Lawrence #5 Emergency	1	Ohio Shale	1915	\$127,560.00	Keystone Wireline, Inc.
Lorain #5	2	Clinton Sandstone	1910s and 1940s	\$246,930.85	Hydrocarbon Well Service, Inc.
Lorain #6 Emergency	1	Ohio Shale	Early 1900s	\$101,403.75	GMT Resources, LLC
Medina #4	13	Berea Sandstone and Ohio Shale	1900s	\$442,468.20	Harley Oilfield Services, LLC
Meigs #2	3	Berea Sandstone	1930s	\$175,677.00	Triple B Services, LLC
Monroe #2	3	Big Injun Sand, Keener Sand, Maxville Limestone	1940s and Unknown	\$285,770.00	Knox Energy, Inc.
Morgan #2	3	Berea Sandstone, Salt Sand	1980s and Early 1900s	\$271,566.75	Altier Brothers, Inc.
Muskingum #2	6	Big Lime, "Clinton" Sand, and Ohio Shale	1940s-1980s	\$559,677.00	North American Drilling Co., LLC
Noble #5	5	Queenston Formation, Berea Sandstone, Macksburg 500 Sandstone	1970s and unknown	\$497,360.50	Hydrocarbon Well Service Inc.
Perry #4	7	Berea Sandstone	Early 1900s	\$310,163.00	Altier Brothers, Inc.
Portage #2 ¹	3	"Clinton" Sand	1970s	\$248,602.40	Keystone Wireline, Inc.
Portage #2 ¹	3	Clinton Sandstone	1970s	\$213,576.81	Unlimited Energy Services, LLC

Scioto #1	5	Ohio Shale and Berea Sandstone	1970s	\$295,848.72	Hydrocarbon Well Service Inc.
Shelby #1	4	Trenton Limestone	1970s	\$241,003.78	Huwer Drilling, LLC
Summit #3 Emergency	1	Queenston Formation	1980s – 2010s	\$163,950.41	Moore Well Services
Summit #4	3	Clinton Sandstone	1930s, 1940s, and 1980s	\$368,247.15	Unlimited Energy Services, LLC
Trumbull #1 ¹	3	“Clinton” Sand	1980s	\$377,818.00	Keystone Wireline, Inc.
Trumbull #1 ¹	3	Clinton Sandstone	1980s	\$308,748.45	Unlimited Energy Services, LLC
UPC NE #2	n/a	n/a	n/a	\$100,000.00	Ronald A Gibson & Assoc. Inc.
UPC NW #2	n/a	n/a	n/a	\$100,000.00	Bakerwell Service Rigs, Inc.
UPC SE #2	n/a	n/a	n/a	\$100,000.00	Triple B Services, LLC
Washington #11 Emergency	1	Berea Sandstone	1930s	\$231,876.50	Knox Energy, Inc.
Washington #8	4	Maxton Sand	unknown	\$264,129.50	Harley Oilfield Services, LLC
Wood #3	2	Trenton Limestone	1890s	\$254,581.00	Second Oil Ltd
Total	139			\$10,538,310.83	

¹ The Columbiana #1, Portage #2, and Trumbull #1 Project were originally awarded to Keystone Wireline, Inc. Due to persistent default over the course of the Multiple Award Contract, the Ohio Department of Administrative Services terminated the contractor from its list of qualified contractors. The Division then re-bid and re-awarded each of these projects to another contractor.

Table 3: Idle and Orphaned Well Project Change Orders for Calendar Year 2020

Project / County	Awarded Amount	Contractor
Ashtabula #6	\$52,620.99	Plants and Goodwin, Inc.
Lawrence #1	\$50,482.20	Hydrocarbon Well Services Inc.
Morrow #3	\$19,595.00	Plants and Goodwin, Inc.
Washington #4	\$70,904.72	Altier Brothers, Inc.
Washington #5	\$2,120.21	Keystone Wireline, Inc.
Total	\$195,723.12	

Table 4: Idle and Orphaned Well Project Mitigation for Calendar Year 2020

Project / County	Awarded Amount	Contractor
Lawrence #5	\$16,000.00	Triple B Services LLC
Total	\$16,000.00	

The following paragraphs provide a brief description of several notable projects addressed by the Division's Orphan Well Program to illustrate the diversity of projects addressed in the previous year. Each paragraph lists the project name, the number of wells in the project, the amount of money awarded, and a synopsis of the project. Additional information related to each project awarded during the reporting period can be obtained by request to the Division.

Notable Projects

Project: Athens #5

Well Count: 7

Awarded Amount: \$278,955.47

The Athens #5 project includes seven wells that were awarded in the October 2020. Division records indicate these wells were drilled to the Berea Sandstone formation. One of the wells in the project, the Ohio U #1 well, is located in a street in the City of Athens on the campus of Ohio University. The well was found in 2018 during a storm sewer construction project and referred to the Division's Orphan Well Program in 2019 by the Division's Enforcement Program. To plug the well, the street was closed, and a detour was established. The road closure was designed, and a permit was obtained by the Division. The road closure was completed by the plugging contractor. The Division had no records for this well. However, historical records of nearby wells indicate the well was likely drilled to the Berea Sandstone. The well contained no casing. This well was plugged in February 2021 after installing casing to protect underground sources of drinking water.



Athens #5 Project, Ohio U #1 Well Location



Athens #5 Project, Ohio U #1 Well



Athens #5 Project, Ohio U #1 Well

Project: Columbiana #3 and Columbiana #1 Emergency

Well Count: 19

Awarded Amount: \$806,939.00 & \$53,200.00

The Division awarded the Columbiana #1 project as a 33 well project in Quarter 3 of Calendar Year 2019.

Due to persistent default of the contractor, the Department of Administrative Services terminated the contractor from the Multiple Award Contract. Because of the ongoing work at the Columbiana #1 at the time of the contractor's termination (October 2020), the Division had to immediately hire a new contractor to plug the Peter Halen #10 well as it was actively leaking oil when the original contractor ceased work. The immediate work required on the Peter Halen #10 well became known as the Columbiana #1 Emergency project. Eighteen wells remained unplugged from the Columbiana #1 project. The Division repackaged these wells into the Columbiana #3 and awarded them in December 2020.

According to Division records, these wells were drilled in the early 1900s to the Berea Sandstone and are located in Columbiana County, Knox Township. The wells are located on four contiguous properties and were drilled to an approximate depth of 750 feet. Division records indicate these wells have surface casing, production casing, tubing, rods, and a packer. An assortment of equipment remains on and around the wells, which includes but is not limited to service rigs, pumpjacks, tanks, buried lines, shackle lines, a powerhouse, and a tool shed. The properties that the wells are located on have significant pollution and contamination at the surface caused from the wells, which includes oil located on the ground, in ditches, as well as in a pond. Removal and proper disposal of contaminated materials will also be completed as a portion of the Columbiana #3 project.



Columbiana #3 Project, Otto Hofer #10



Columbiana #3 Project



Columbiana #3 Project, Outside Powerhouse



Columbiana #3 Project, Inside Powerhouse

Project: Columbiana #2 Emergency

Well Count: 2

Awarded Amount: \$191,730.00

The Columbiana #2 project included two wells and a water well (drilled for use during oil well drilling) located on a steep slope along State Route 45. This project was awarded in the July 2020. The wells were found by the Ohio Department of Transportation (ODOT) while completing an emergency hillside stabilization after a landslide occurred that affected State Route 45 in Yellow Creek Township. Division records indicate these wells are part of the Liverpool East Berea Sandstone well field, which was discovered in 1915. The wells were cleaned out and plugged to a depth of approximately 700 feet in July and August 2020 as an emergency project.



Columbiana #2 Project, ODOT Columbiana #1 & #2 Well



Columbiana #2 Project, ODOT Columbiana #2 Well



Columbiana #2 Project, ODOT Columbiana #2 Well

Project: Cuyahoga #9

Well Count: 5

Awarded Amount: \$488,706.32

The Cuyahoga #9 project consists of five wells located in urban areas of Cuyahoga County that were awarded in July 2020. These wells were a combination of Ohio Shale wells and Clinton Sandstone wells from the early 1900s.

- The Wolf Road #1 well was located under Wolfe Road adjacent to the Bay Middle School and Cahoon Memorial Park West. This well plugging required a complete road closure and detour. The road closure was designed, and a permit was obtained by the Division. The road closure was completed by the plugging contractor. This well was plugged in September 2020. This well was an Ohio Shale well drilled in the early 1900s.
- The A. Hall #1 well was plugged in September 2020. This well was located in a right-of-way being developed by the Ohio Department of Transportation (ODOT). The right-of-way will be a part of the Opportunity Corridor in Cleveland.
- The Cleveland Metropolitan Housing Authority (CMHA) #1 well was found within a housing apartment complex approximately five feet from a storage building. Records showed that this Clinton Sandstone well was previously plugged prior to the Division's formation in 1954 but was leaking. This well was drilled out and was re-plugged in November 2020.
- The 3393 West Blvd #1 well is located under the overhang of a garage in a residential housing area. Plugging this Clinton Sandstone well is not feasible due to the proximity to the garage. As a result, a permanent vault and vent will be placed on this well.
- The Joseph Kuenzer #1 well is a Clinton Sandstone well that was plugged in February 2021.



Cuyahoga #9 Project, Wolf Road #1



Cuyahoga #9 Project, CMHA #1

Project: Guernsey #3

Well Count: 3

Awarded Amount: \$313,640.00

The Guernsey #3 project includes three wells on the Enos farm that were drilled to the Clinton Sandstone in the 1960s and 1970s. This project was awarded in January 2020. Two of the wells are located in farm fields and have previously had a bottom plug set in the Clinton Sandstone and tubing was removed. No other cement plugs were set in either well. No records on the plugging for these two wells exist. These two wells will be cleaned out and plugged from the top of the previously set plugs. The third well in the project is located directly adjacent to a pole barn used for cattle. This well was plugged in 1973 with sand pumpings and prepared clay to surface but is leaking natural gas. This well will be drilled out to depth and re-plugged in accordance with modern plugging methods.



Guernsey #3 Project, John Enos (Larrick) #3

Project: Lake #7 Emergency

Well Count: 1

Awarded Amount: \$55,366.00

The Lake #7 project included the Banks Landing #1 well. This well was plugged as an emergency project. The Division was made aware of the Banks Landing #1 well via a stray gas complaint in 2017. Due to the odor issue, a gas-mitigation system was installed by the condominium association, but a well was not located at that time. As the gas odors and levels persisted, the Division’s Survey Section staff utilized magnetometer equipment (acquired since the initial complaint) to pinpoint the location of a magnetic anomaly (the well) in March 2020. The condominium association excavated the location and found the well four feet from the garage wall under a concrete sidewalk area. The well was approximately 12 feet from the residence. In May 2020, the well was plugged at a depth of 800 feet in the Ohio Shale. Due to the close proximity to the residence, a vault and vent was also installed as an additional safety measure to allow for the monitoring and venting of any potential future gas leaks.



Lake #7 Project, Banks Landing #1 Well

Project: Lawrence #5 Emergency

Well Count: 1

Awarded Amount: \$127,560.00

The Lawrence #5 project included the J Bowman #7 well. This well was plugged as an emergency project. The Division was made aware of the J Bowman #7 well in March 2020 via a stray gas complaint made to the local Fire Chief. The Division’s Survey Section staff utilized magnetometer equipment to pinpoint the location of the well casing under a concrete driveway adjacent to a residence. As part of the emergency contract, a contractor was hired to perform exploratory and mitigation work that located and temporarily vented the well as a safety measure until proper plugging could occur. The well was found to be 16 feet from a residence. The lower explosive limits were recorded at 100% outside the home. These readings indicated an explosive gas environment that lead the gas utility to shut off gas supply to the home as a safety measure. After the mitigation, a contractor was hired to plug the well. The well completion records indicated that the well was drilled to 2084 feet to the Ohio Shale in 1915. However, the well was plugged in June 2020 at 1252 feet in the Berea Sandstone due to an obstruction encountered. Due to the close proximity to the residence, a vault and vent was also installed to allow for the monitoring and venting of any potential future gas leaks.



Lawrence #5 Project, J. Bowman #7

Project: Lorain #6 Emergency

Well Count: 1

Awarded Amount: \$101,403.75

The Lorain #6 project consists of one emergency well. The Lorain Metropolitan Housing Authority (LMHA) #1 well was found twelve feet from an apartment building on May 29, 2020. Gas levels up to 90% of the lower explosive limits were found in one of the apartments. At the direction of the Lorain Fire Marshall, occupants of three apartments were evacuated until the well was plugged. The day after finding the well, a temporary vent system and French drain system were installed to mitigate the gas odor impact on the apartment complex. The Division does not have detailed well records for the Lorain Metropolitan Housing Authority (LMHA) #1 well. However, historical records of nearby wells indicate the well was likely drilled in the early 1900s. The well was plugged and permanently vaulted and vented in August 2020. The well was found to have been drilled to the Ohio Shale at a total depth of 717 feet with an obstruction at 107 feet.



Lorain #6 Project, Lorain Metropolitan Housing Authority (LMHA) #1 Well

Project: Monroe #2

Well Count: 3

Awarded Amount: \$285,770.00

The Monroe #2 project consists of three wells that are believed to have been drilled in the mid-1900s. This project was awarded in March 2020. The Division does not have detailed well records for any of these wells. Historical records of nearby wells indicate all three wells were drilled to relatively shallow formations that range in depth from 1200 to 1500 feet, but different formations. The Stoffel #1 well is located adjacent to State Route 260. A one lane closure of the state route with a functioning traffic light was required for the duration of the well plugging. The road closure was designed, and a permit was obtained by the Division. The road closure was completed by the plugging contractor. This well was plugged in September 2020.



Monroe #2 Project, Stoffel #1 Well

Project: Summit #3 Emergency

Well Count: 1

Awarded Amount: \$163,950.41

The Summit #3 project consisted of the Naumoff #1 well. This well, while it still has a registered owner with the Division, was an idle well with imminent health, safety, and environmental risks that the well posed to the public and Tuscarawas River. Despite multiple notices from the Division, including a Chief's Order, the well owner failed to act in a reasonable period of time, so the Chief authorized an immediate plugging of this well pursuant to Ohio Revised Code 1509.071(B)(1)(b). The well was awarded in March 2020 and plugged in May 2020.

This well was located on Summit Metro Park Property in Barberton, Ohio, between the Ohio Canal and the Tuscarawas River. A frequently used public walking path is located approximately 250 feet east of this well and an active salt solution mining project is approximately 1.25 miles to west of this well. The area is frequently used as a homeless camp, which contributed to the Division's decision to eliminate the public risk presented by this well. The location of the well is designated as a wetland under the National Wetlands Inventory. Production records show that the well had produced oil and brine as recent as 2012. The well was pressurized and leaking natural gas from the tubing below the gate valve and from the mandrel head, making it impossible to shut off the gas without significant repairs. The gas leak was significant enough to be audible from over 100 feet away and caused vegetation three feet away from the well to move. The surrounding vegetation was predominantly Phragmites, which is an extremely flammable vegetation, which created an additional safety risk. After the Division initiated enforcement actions, Division Inspection staff indicated that the leak continued to worsen. The tubing gate valve was disintegrated and would not have been safe to utilize. Additionally, without confidence of downhole component mechanical integrity, shutting in a pressurized well at surface can result in the pressurized gas migrating elsewhere. The production casing was deteriorated. Standard well workover procedures would

have been impossible to perform on this well because the overall condition of the wellhead was very poor, as the fittings, casing and tubing were rusted, swollen, and flaking apart.



Summit #3 Project, Naumoff #1

Project: Summit #4

Well Count: 3

Awarded Amount: \$368,247.15

The Summit #4 project consists of three wells located in urban areas. This project was awarded in December 2020. Two of the wells are located in yards of newer residential subdivisions close to homes and public access. Division records indicate these wells were drilled to produce from the Clinton Sandstone.

- The Moss-Aeshliman-Hasbrouck #1 well is located under the edge of a residential drive. This well was found because of a gas odor complaint by the resident. Once the well was found, a temporary passive vent system was installed as a safety measure to remain in place until the well is plugged.

- The R. Bolick #1 well is in landscaping near the edge of a residential sidewalk. This well was found because of a gas odor complaint by the residents that was investigated by the Division and Dominion Energy. Once the well was found, a temporary passive vent system was installed as a safety measure to remain in place until the well is plugged. A complete road closure and detour will be required to plug this well.
- The Oliver Kepler #1 well was found by a development company while clearing land. The well is located adjacent to Interstate 77.



Summit #4 Project, Moss-Aeshliman-Hasbrouck #1



Summit #4 Project, R. Bolick #1



Summit #4 Project, R. Bolick #1

Project: Trumbull #1

Well Count: 3

Awarded Amount: \$308,748.45

The Trumbull #1 project consists of three wells that were drilled in the 1980s. Records indicate that the Sawyer #1 and the McGarry #1 were drilled to the Queenston Formation and produced from the Clinton Sandstone. The Division does not have detailed well records for the Satterlee #3. However, records indicate that the well was abandoned during drilling in 1984, at which time obstructions were placed in the wellbore. Multiple attempts have been made by the previous well owner to plug the well only to be stopped by encountering hole deviations, obstructions, and lost tools. This project was awarded in March 2020. However, due to persistent default by the original contractor over the course of the Multiple Award Contract with the Department of Administrative Services, the contract was terminated, and the project was re-bid and re-awarded to a different contractor.



Trumbull #1 Project, Satterlee #3

Project: Washington #8

Well Count: 4

Awarded Amount: \$264,129.50

The Washington #8 project consists of four wells located along State Route 7 and the Ohio River inside the Village of Newport. This project was awarded in November 2020.

- The Par Mar #1 well is located near an existing gas station and the existing station's underground storage tanks.
- The Don Metheny #1 well is located 5 feet from a mobile home in the driveway of the residence.
- The Newport Sewer & Water #1 well is located adjacent to the Newport water treatment facility near the Ohio River.

- The Henricks #1 well is located adjacent to a baseball field.

The Division does not have detailed well records for any of these four wells. However, historical records of nearby wells indicate the wells were likely drilled in the early 1900s to the Maxton Sand.



Washington #8 Project, Don Metheny #1 Well



Washington #8 Project, Newport Sewer & Water #1 Well



Washington #8 Project, Hendricks #1 Well

Project: Washington #11 Emergency

Well Count: 1

Awarded Amount: \$231,876.50

The Washington #11 project consists of one emergency well. The project awarded in August 2020. The CH Roberts #3 well was found to have 90 pounds per square inch of pressure on the 2.38-inch tubing and was observed to be from brine rather than natural gas. The well was near a saltwater injection well that was found to have impacted Berea Sandstone wells within the immediate area of the CH Roberts #3. Division records show that the well was drilled to 1855 feet in the Berea Sandstone in 1932. The well was plugged in September 2020.



Washington #11 Project, Roberts CH #3

Project: Wood #3

Well Count: 2

Awarded Amount: \$254,581.00

The Wood #3 project consists of two wells that were unrecorded and were found from oil and gas that had leaked to the surface. The project was awarded in February 2020. The Division does not have detailed well records for these two wells. However, historical records of nearby wells indicate the wells were likely drilled to Trenton Limestone in the 1890s. The Mitchell Colin R. #1 well is located five feet from an existing home. The PetroStop #1 well is located adjacent to I-75.



Wood #3 Project, Mitchell, Colin R. #1

Orphan Well Program Costs

Between January 1, 2020 and December 31, 2020, the Division's Orphan Well Program awarded and expended the costs shown in Table 5. The Division awarded contracts to contractors for mitigation and plugging work on 139 orphan wells at a total cost of \$10,750,033.95. The average awarded plugging cost per well was \$77,338.37. Also, between January 1, 2020 and December 31, 2020, Division Contractors plugged 150 wells and invoiced for \$10,253,701.61 for mitigating and plugging work. The average expended plugging cost per well was \$68,358.01. The Division typically awards contracts with contingencies for unforeseen work included in the contract. The lower average cost expended versus the average awarded cost is a result of not using all contingencies that were available, if needed. Typically, contractors must complete projects within one-year of the date the contract is awarded. Therefore, the wells plugged in any given year usually consist of wells from projects awarded in the previous and current year.

Table 5: Summary of Costs for Calendar Year 2020

Description	Awarded Total ³	Expenditure Total ³
Plugging	\$10,734,033.95	\$10,240,907.75
Mitigation	\$16,000.00	\$12,793.86
Title Work	\$22,164.55	\$19,656.00
Public Notice	\$67,225.82	\$60,947.09
Environmental Service Contract(s)	\$0.00	\$0.00
Indirect Costs ¹	\$2,201,085.53	\$2,201,085.53
Lidar ²	\$1,500,000.00	\$1,500,000.00
Total	\$14,540,509.85	\$14,035,390.23

¹ The funds allocated to the Orphan Well Program (ALI 725677) each fiscal year are based on thirty percent of the revenue credited to the oil and gas well fund during the previous fiscal year (ORC1509.071(B)(1)).

Indirect Costs are not expensed from the Orphan Well Program (ALI 725677). All Wage & Fringe, General Operating, & Equipment expenses are taken out of the General Operating Budget for the Division (ALI 725643).

- a. General Operating – expenses include items such as office supplies, certified mailings, postage, phones, copy meter usage, janitorial services, Voyager fuel and non-fuel, business cards, soil analysis, OIT charges, field supplies & equipment, FR gear, training/conference registration fees, travel, etc.

² Lidar, which stands for *Light Detection and Ranging*, is a remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the Earth. These light pulses combined with other data recorded by the airborne system generate precise, three-dimensional information about the shape of the Earth and its surface characteristics. The Division will use this enhanced data to systematically identify former orphan well features such as access roads and drilling pits. The Lidar data will also serve as an elevation resource for the design of current Orphan Well Program projects.

³ Expenditures from each year are typically a combination of projects awarded in the current year and previous year.

Program Expansion

Due to the COVID-19 pandemic, Orphan Well Program well plugging projects were put on hold from March 2020 to May 2020. The Division also paused bidding and awarding additional work from March 2020 through June 2020. The exception to this was emergency work. However, during this time, the Division focused on preparing new projects for bid. The Division resumed plugging orphan wells in May 2020. The Division resumed awarding plugging projects in July 2020.

While the second quarter of calendar year 2020 was adversely impacted by the COVID-19 pandemic, the Orphan Well Program has seen significant growth over the last three years and the Division anticipates this trend will continue. Until recently, a significant hindrance to continued growth of the program had been limited contractor participation. The Division established a Multiple Award

Contract (MAC) with the Department of Administrative Services to qualify contractors for the plugging of orphan wells. Each contractor qualified under the MAC is eligible to bid on a project. Each project cost is awarded to the lowest responsive and responsible bidder as submitted by the qualified contractors.

In the spring of 2020, the Division qualified an additional 25 contractors to the MAC. The MAC currently has a total of 48 qualified contractors. The MAC was set to terminate at the end of calendar year 2020. The Department of Administrative Services has renewed the current contract and current contractor pool for an additional six months. The Department of Administrative Services issued a new Request for Proposal (RFP) in February 2021 that will establish a new Orphan Well Program plugging contract. This contract will replace the current contract without significant changes and will be for a three-year period with the option to renew up to an additional four years.

The Division experienced a large increase in contractor participation in the program in calendar year 2020. On average, approximately 15 contractors are participating at recent individual project site reviews. The Division has also had a significant increase in the number of contractors bidding on projects with an average of approximately 10 bids submitted on each contract. Another indicator of increased contractor participation is the number of active rigs. Companies have utilized 26 different rig crews to plug orphan wells since May 2020, and prior to a winter slowdown, the Division has consistently had 15 to 18 rigs operating around the State each week. Prior to House Bill 225 that significantly changed Ohio Revised Code 1509.071, the Division would typically have had one to three contractors submit bids on a project and typically had one to three rigs actively plugging wells. The Division plans to continue outreach events and will continue to work with the industry to increase interest from contractors, complete these challenging projects, and continue to expand the program.

In November 2019, per Ohio Revised Code 1509.071(E)(2)(a), the Division received approval of the

Landowner Pass-through Payment Plugging Application form from the Technical Advisory Council. The

Division activated the Landowner Pass-through Payment Plugging Program in Fiscal Year 2021. This program will serve as an opportunity for landowners to have wells plugged on their property that are not on the Division's priority list to plug. This program will serve as an additional opportunity for plugging contractors to get involved with the Orphan Well Program. The plugging of wells through the Landowner Pass-through Payment Plugging Program will require an agreement between the landowner and a plugging contractor. Pursuant to the Ohio Revised Code 1509.071 (E), the Division's role will be to ensure contract amounts are reasonable, approve applications, issue plugging permits, ensure lawful completion of well plugging and restoration, and provide payment directly to the contractor. Contractors do not need to be a part of the Department of Administrative Services' Multiple Award Contract to participate in the Landowner Pass-through Payment Plugging Program. However, the contractors must be regularly engaged in the business of plugging oil and gas wells. The Division recently had the first two landowners commit to using the Landowner Pass-through Payment Plugging Program. As the Division is currently completing the statutorily required title research and public notices (Ohio Revised Code 1509.071 (D)), applications are expected soon from these landowners.