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west virginia department of environmental protection

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Office of Oil and Gas  
601 57<sup>th</sup> Street, S.E.  
Charleston, WV 25304  
(304) 926-0450  
fax: (304) 926-0452

Harold D. Ward, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Tuesday, May 25, 2021  
WELL WORK PLUGGING PERMIT  
Vertical Plugging

DIVERSIFIED PRODUCTION LLC  
101 MCQUISTON DRIVE  
JACKSON CENTER, PA 16133

Re: Permit approval for EM 2 B4  
47-019-00681-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. Please be advised that form WR-38, Affidavit of Plugging and Filling Well, is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.

A blue ink signature of James A. Martin, Chief.

James A. Martin  
Chief

Operator's Well Number: EM 2 B4  
Farm Name: ELKEM METALS COMPANY  
U.S. WELL NUMBER: 47-019-00681-00-00  
Vertical Plugging  
Date Issued: 5/25/2021

Promoting a healthy environment.

05/28/2021

## PERMIT CONDITIONS

West Virginia Code § 22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

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### CONDITIONS

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1. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
2. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
3. Well work activities shall not constitute a hazard to the safety of persons.
4. This well is under a consent order and must be plugged within two years of the date of issuance of this permit.

1) Date March 23, 2021  
2) Operator's Well No. 12950  
3) API Well No. 47-019 - 00681

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

4) Well Type: Oil \_\_\_ / Gas X / Liquid injection \_\_\_ / Waste disposal \_\_\_ /  
(If "Gas, Production X or Underground storage \_\_\_) Deep \_\_\_ / Shallow X

5) Location: Elevation 623.8 ft Watershed Kanawha River  
District Valley County Fayette Quadrangle Montgomery

6) Well Operator Diversified Production, LLC 7) Designated Agent Jeff Mast  
Address P.O. Box 6070 Address P.O. Box 6070  
Charleston, WV 25362 Charleston, WV 25362

8) Oil and Gas Inspector to be notified 9) Plugging Contractor  
Name Gary Kennedy Name R & J Well Services, Inc.  
Address 66 Old Church Lane Address P.O. Box 40  
Pipestem, WV 25979 Hueysville, KY 41640-0040

10) Work Order: The work order for the manner of plugging this well is as follows:

See Attached

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WV Department of  
Environmental Protection

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work order approved by inspector Gary Kennedy Date 5/10/21

## PLUGGING PROGNOSIS

West Virginia, Fayette County

API # 47-019-00681

38.143551085243, -81.2847465548875

Nearest ER: Montgomery General Hospital, 401 Sixth Ave, Montgomery, WV 25136

**Casing Schedule**

16" csg @ 37'

13 3/8" csg @ 174' CTS

7" csg @ 1006' cemented to surface w/ 206 sks.

4 1/2" csg @ 1883' cemented w/ 100 sks. Estimated TOC at 1000'

**Completion**

1st Stage: Weir (1810'- 1832')

2nd Stage: Pocono (1738'- 1748')

3rd Stage: Big Lime (1533'- 1644')

**Fresh Water:** 40', 90', 200', 450', 510'**Saltwater:** 1185'**Coal:** None Reported**Gas Show:** Completion Intervals**Elevation:** 610'

1. Notify inspector, Gary Kennedy 304-382-8402, 48 hrs. prior to commencing operations. *Record Rock Pressure*
2. Tag TD w/ wireline.
3. Pull stretch on 4 1/2" csg and estimate free point.
4. TIH w/ tbg to 1832'. Kill well as needed with 6% bentonite gel.
5. Pump 399' Class A cement plug from 1433'- 1832'(Weir, Big Injun, and Big Lime Completion)
  - a. Tag TOC and top off as needed.
6. TOOH w/ tbg to 1433'. Load hole with 6% bentonite gel from: 1235'- 1433'
7. TOOH w/ tbg. Perforate 4 1/2" csg w/ 2 shots at 1235', 1185', 1056', 1006', 956'.
8. TIH w/ tbg to 1235'. Packoff tbg in 4x2 wellhead. Pump 294' Class A cement plug from: 956'- 1235' (7" csg st).
  - a. Tag TOC to confirm within reason of calculated ensuring adequate coverage on 4 1/2" annulus.
9. TOOH w/ tbg. Pressure test 4 1/2" csg. If test passes perforate 4 1/2" csg at 610' w/ 4 shots and establish circulation on 7" csg. Once circulation is established pump 610' Class A cement plug by bull heading 4 1/2" csg and circulating out good returns on 7" csg.
  - a. If pressure test fails perforate at 610', 560', 510', 450', 400', 224', 174', 124', 75'. Then spot plug through tbg and monitor 7" csg for circulation.
10. Erect monument with API#, date plugged, & company name.
11. Reclaim location and road to WV-DEP specifications.

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4701900681P

State of West Virginia  
Division of Environmental Protection  
Section of Oil and Gas

API # 47- 19-00

Elkem #2 0681

Well Operator's Report of Well Work 47-019-0681

Farm name: Elkem Metals Operator Well No.:  
LOCATION: Elevation: Quadrangle:

District: VALLEY From Plat County: FAYETTE  
Latitude: 10,100 Feet South of 38 Deg. 10 Min. 00 Sec.  
Longitude: 842.5 Feet West of 81 Deg. 15 Min. 00 Sec.

Company: P.O. BOX 1245

Agent:

Inspector: RODNEY G. DILLON  
Permit Issued: 10/20/91  
Well work Commenced: 10/20/91  
Well work Completed: 10/29/91  
Verbal Plugging  
Permission granted on: From Permit  
Rotary  Cable \_\_\_\_\_ Rig  
Total Depth (feet) 1902 DTD  
Fresh water depths (ft) \_\_\_\_\_  
40, 90, 200, 450, 510  
Salt water depths (ft) \_\_\_\_\_  
1185  
Is coal being mined in area (Y/N)? N  
Coal Depths (ft): None Reported

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill U. Cu. Ft
16"	37'	37'	---
13 3/8"	174'	174'	CTS
7"	1006'	1006'	340SKS
4 1/2"	1883'	1883'	100SKS

OPEN FLOW DATA

Producing formation GigLime, Injun. Weir Pay zone depth (ft) 1533-1827

Gas: Initial open flow show MCF/d Oil: Initial open flow n/a BBP  
Final open flow 500 MCF/d Final open flow n/a BBP  
Time of open flow between initial and final tests n/a Hours  
Static rock Pressure 380 psig (surface pressure) after 24 Hours

Second producing formation \_\_\_\_\_ Pay zone depth (ft) \_\_\_\_\_

Gas: Initial open flow \_\_\_\_\_ MCF/d Oil: Initial open flow \_\_\_\_\_ BBP  
Final open flow \_\_\_\_\_ MCF/d Final open flow \_\_\_\_\_ BBP  
Time of open flow between initial and final tests \_\_\_\_\_ Hours  
Static rock Pressure \_\_\_\_\_ psig (surface pressure) after \_\_\_\_\_ Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORMANCES AT INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

For: \_\_\_\_\_

By: [Signature]

Date: 3-23-93

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47-019-0681  
 #2

- I (1810-1832) 16 holes, 500 gal 15% HCL, 250 SKS SAND, 320 BBL H<sub>2</sub>O, 84 MSCF N<sub>2</sub>
- II (1738-1748) 20 holes, 500 gal 15% HCL, 450 SKS SAND, 400 BBL H<sub>2</sub>O, 65 MSCF N<sub>2</sub>
- III (1533-1644) 7 holes, 3000 gal 15% HCL, 60 MSCF N<sub>2</sub>

FILL	0-65	1/2" H <sub>2</sub> O 40
SAND	65-160	1/2" H <sub>2</sub> O 120
SAND & shale	160-170	1" H <sub>2</sub> O 200
SAND	170-328	1" H <sub>2</sub> O 450
SAND & shale	328-453	
SAND	453-847	1" H <sub>2</sub> O 510
shale	847-1165	
Ranch ft	1165-1180	
shale & sand	1180-1300	
maxtin	1300-1350	
shale & lime	1350-1457	
Big Lime	1457-1710	GAS SHOW
Big INJUN	1710-1750	
shale & sand	1750-1803	
WEIR	1803-1836	
shale	1836-1902	DTD

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 MAY 13 2021  
 WV Department of  
 Environmental Protection

4701900681P

WW-4A  
Revised 6-07

1) Date: March 23, 2021  
2) Operator's Well Number  
12950

3) API Well No.: 47 - 019 - 00681

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
**NOTICE OF APPLICATION TO PLUG AND ABANDON A WELL**

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Office of Oil and Gas  
MAY 04 2021

4) Surface Owner(s) to be served:  
(a) Name WV Manufacturing, LLC  
Address P.O. Box 158  
Alloy, WV 25002  
(b) Name \_\_\_\_\_  
Address \_\_\_\_\_  
(c) Name \_\_\_\_\_  
Address \_\_\_\_\_  
6) Inspector Gary Kennedy  
Address 66 Old Church Lane  
Pipeslem, WV 25979  
Telephone 304-382-8402

5) (a) Coal Operator  
Name None  
Address \_\_\_\_\_  
(b) Coal Owner(s) with Declaration  
Name WV Manufacturing, LLC for Elkem Metals Company  
Address P.O. Box 158  
Alloy, WV 25002  
(c) Coal Lessee with Declaration  
Name No Declaration  
Address \_\_\_\_\_

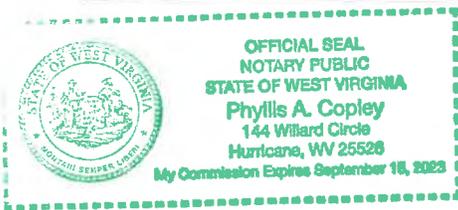
WV Department of Environmental Protection

**TO THE PERSONS NAMED ABOVE:** You should have received this Form and the following documents:

- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
- (2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.



Well Operator Diversified Production, LLC  
By: [Signature] Jeff Mast  
Its: Director, Production  
Address P.O. Box 6070  
Charleston, WV 25362  
Telephone 304-543-6988

Subscribed and sworn before me this 29th day of March, 2021  
Phyllis A. Copley Notary Public  
My Commission Expires September 16, 2023

**Oil and Gas Privacy Notice**

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at [depprivacyoffier@wv.gov](mailto:depprivacyoffier@wv.gov).

05/28/2021

Well 12950  
47-019-00681

4701900681P

7019 1640 0000 1003 4947

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Certified Mail Fee	\$3.60
Extra Services & Fees (check box, add fee for each service)	\$2.85
<input type="checkbox"/> Return Receipt (hardcopy)	\$0.00
<input type="checkbox"/> Return Receipt (electronic)	\$0.00
<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00
<input type="checkbox"/> Adult Signature Required	\$0.00
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00
Postage	\$1.80
Total Postage	\$5.45

0523  
03  
Postmark Here

05/03/2021

~~12950~~ and 12950 P&A

Sent To: WV Manufacturing, LLC  
Street and: and Elkem Metals Company  
City, State, P.O. Box 158  
Alloy, WV 25002

PS Form 3800, April 2019

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MAY 04 2021  
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Environmental Protection

05/28/2021

WW-9  
(5/16)

API Number 47 - 019 - 00681  
Operator's Well No. 12950

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS  
FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Diversified Production, LLC OP Code 494524121

Watershed (HUC 10) Kanawha River Quadrangle Montgomery

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes  No

Will a pit be used? Yes  No

If so, please describe anticipated pit waste: Produced fluid and cement returns

Will a synthetic liner be used in the pit? Yes  No  If so, what ml.?

Proposed Disposal Method For Treated Pit Wastes:

- Land Application (if selected provide a completed form WW-9-GPP)
- Underground Injection ( UIC Permit Number 47-119-00724 )
- Reuse (at API Number \_\_\_\_\_)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain \_\_\_\_\_)

Will closed loop system be used? If so, describe: N/A

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. N/A

-If oil based, what type? Synthetic, petroleum, etc. N/A

Additives to be used in drilling medium? N/A

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. N/A

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) N/A

-Landfill or offsite name/permit number? N/A

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on April 1, 2016, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature [Signature]  
Company Official (Typed Name) Jeff Mast  
Company Official Title Director Production



Subscribed and sworn before me this 29th day of March, 2021

Phyllis A. Copley Notary Public

My commission expires September 16, 2023

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WV Department of Environmental Protection

Proposed Revegetation Treatment: Acres Disturbed 1 +/- Prevegetation pH

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20 or equivalent

Fertilizer amount lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Red Fescue	40	Red Fescue	15
Alsike	5	Alsike Clover	5
Annual Rye	15		

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, provide water volume, include dimensions (L, W, D) of the pit, and dimensions (L, W), and area in acres, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]

Comments:

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Title: Inspector Date: 5/10/21

Field Reviewed? ( ) Yes ( ) No

Well No.: 4701900681  
UTM83-17, Meters  
North: 475073.47  
East: 4221799.38  
Elev.: 190.21 M  
Elev.: 623.88 Ft

ASPI = 295 061  
20' L  
20' W  
8' Deep

Well No.: 4701900680  
UTM83-17, Meters  
North: 475174.98  
East: 4221454.54  
Elev.: 194.89 M  
Elev.: 639.23 Ft

Well No.: 4701900688  
UTM83-17, Meters  
North: 475540.35  
East: 4220966.39  
Elev.: 197.67 M  
Elev.: 648.34 Ft



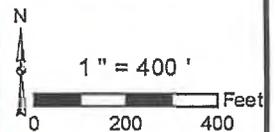
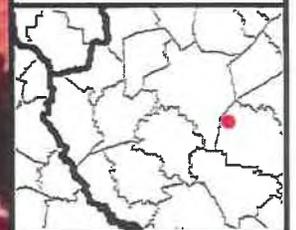
Diversified Gas & Oil  
Corporation  
100 Diversified Way  
Pikeville KY, 41051

47-019-00688, 47-019-00681,  
47-019-00680

Plugging Map

### Legend

- Well
- Access Road
- Pits
- Pad
- Public Roads



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AT&T

ADENA DR  
ELM DR

BOOMER  
LOOP RD

EDUPONT AVE  
MIDLAND TRL

ADENA DR  
MACCORKLE AVE

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Department of  
May 13 2014

WW-7  
8-30-06



West Virginia Department of Environmental Protection  
Office of Oil and Gas

**WELL LOCATION FORM: GPS**

API: 47-019-00681 WELL NO.: 12950  
 FARM NAME: Elkem Metals Co.  
 RESPONSIBLE PARTY NAME: Diversified Production LLC  
 COUNTY: Fayette DISTRICT: Valley  
 QUADRANGLE: Montgomery  
 SURFACE OWNER: WV Manufacturing LLC  
 ROYALTY OWNER: Elkem Metals Co.  
 UTM GPS NORTHING: 4,221,799.38  
 UTM GPS EASTING: 475,073.47 GPS ELEVATION: 623.8'

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
2. Accuracy to Datum – 3.05 meters
3. Data Collection Method:

Survey grade GPS  : Post Processed Differential

Real-Time Differential

Mapping Grade GPS  : Post Processed Differential

Real-Time Differential

4. Letter size copy of the topography map showing the well location.

I the undersigned, hereby certify this data is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Office of Oil and Gas.

Signature

Director of Production  
Title

03/19/2021  
Date

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