Environmental GEO-Technologies, LLC

October 31, 2018

Mr. Allan Batka
United States Environmental Protection Agency
Region 5 (WU-16J)
77 West Jackson Blvd.
Chicago, Illinois 60604

Re: EGT Monthly Report (in conformance with MI-163-1W-C010 & MI-163-1W-C011)

Dear Mr. Batka:

Environmental Geo-Technologies, LLC ("EGT") hereby timely submits its fifty-ninth Monthly Report ("MR") in conformance with the requirements of its two EPA UIC permits (#s MI-163-1W-C010 & MI-163-1W-C011).

EGT is providing all of the attached information in the same sequence as required by both subject permits, i.e. Part II.D.1 (a-i), Part III, Attachment A, and Part III, Attachment E.G.2 & E.I.

EGT did not accept any F039 waste in September, 2018 so no Page A-3 of 3 laboratory analyses are necessary to be submitted as part of this MR.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

We trust that you find this interim report satisfactory, however, if you have any questions or comments, please feel free to contact us.

Sincerely,

Richard J. Powals, P.E.
Vice-President

cc: J. Frost (EGT)

att.

rjp103118/EGTEPAMonthlyReport-September, 2018

P 734-946-1000 F 734-946-1002 - 28470 Citrin Drive, Romulus, Michigan 48174
www.envgeotech.com

AVERAGE INJECTION RATE

Calculation of Average Injection Rate

CURRENT REPORTING YEAR 2018

CURRENT REPORTING MONTH SEPTEMBER

Date (month, year) of the first injection into either well at the Citrin Road Facility

NOV 2013

CURRENT MONTH (all volumes in gallons)

	Injected Waste	Injected Non-Waste	Total injected
MI-163-1W-C010 , Well #1-12			
Current Month	37,087	0	37,087
Since facility first injected			14,301,395
MI-163-1W-C011, Well #2-12			
Current Month	0	0	0
Since facility first injected			4,648,736
		Lifetime Combined	18,950,131

Conversion factors
365.25 days per year ÷ 12 months per year = 30.4375 days per month
30.4375 days per month × 1440 minutes per day = 43,830 minutes per month

Calculations
Whole number of months of injection _____

57 lifetime number of months of injection × 43,830 minutes/month
= 2,498,310 minutes of injection

Lifetime combined injected volume 18,950,131 ÷ 2,498,310 minutes of injection
= 7.6 gpm average injection rate

WELL 1 DATA

WELL 01 Monthly Data

Date	Min Injection Pressure (PSIG)	Max Injection Pressure (PSIG)	Min Sight Glass Level (in)	Max Sight Glass Level (in)	Min Annulus Pressure (PSIG)	Max Annulus Pressure (PSIG)	Min Injectate pH	Max Injectate pH	Min Flow Rate (GPM)	Max Flow Rate (GPM)	Min Differentail Pressure (PSIG)	Max Differential Pressure (PSIG)
9/1/2018	117.7	117.9	23.2	23.4	741.7	742.6	7.1	7.1	0.0	0.0	623.8	624.9
9/2/2018	117.6	117.9	23.2	23.4	741.3	742.2	7.1	7.1	0.0	0.0	623.5	624.4
9/3/2018	117.5	117.8	23.2	23.4	741.0	741.8	7.1	7.1	0.0	0.0	623.3	624.1
9/4/2018	117.5	117.7	23.2	23.4	740.4	741.4	7.1	7.1	0.0	0.0	622.8	623.8
9/5/2018	117.3	117.6	23.2	23.5	740.0	740.9	7.1	7.1	0.0	0.0	622.4	623.4
9/6/2018	117.2	117.5	23.2	23.4	740.0	740.6	7.1	7.1	0.0	0.0	622.6	623.2
9/7/2018	117.2	117.5	23.2	23.4	739.4	740.1	7.1	7.1	0.0	0.0	622.1	622.8
9/8/2018	117.2	117.4	23.2	23.4	738.9	739.5	7.1	7.1	0.0	0.0	621.5	622.2
9/9/2018	117.2	117.5	23.1	23.4	736.8	739.0	7.1	7.1	0.0	0.0	619.4	621.7
9/10/2018	117.2	117.5	23.1	23.3	735.9	736.9	7.1	7.1	0.0	0.0	618.6	619.5
9/11/2018	117.1	117.4	23.1	23.4	735.0	736.0	7.1	7.1	0.0	0.0	617.7	618.8
9/12/2018	117.1	117.4	23.1	23.4	734.7	735.5	7.1	7.1	0.0	0.0	617.4	618.3
9/13/2018	117.1	117.3	23.2	23.4	734.5	735.2	7.1	7.1	0.0	0.0	617.3	618.0
9/14/2018	40.2	766.3	23.1	23.4	731.2	1144.6	13.8	13.8	7.7	44.5	313.9	745.9
9/15/2018	38.9	40.3	23.1	23.4	720.6	731.2	13.8	13.8	0.0	0.0	681.6	691.0
9/16/2018	38.6	39.0	23.1	23.4	718.1	720.6	13.8	13.8	0.0	0.0	679.3	681.7
9/17/2018	10.0	666.0	23.2	23.4	715.4	1050.2	13.8	13.8	2.3	36.6	368.6	728.5
9/18/2018	9.8	10.1	23.1	23.4	710.4	715.4	13.8	13.8	0.0	0.0	700.5	705.4
9/19/2018	9.7	10.0	23.2	23.4	708.7	710.5	13.8	13.8	0.0	0.0	698.8	700.7
9/20/2018	9.8	10.2	23.1	23.4	707.5	708.8	13.8	13.8	0.0	0.0	697.3	698.9
9/21/2018	10.1	828.1	23.1	23.4	707.3	1149.7	13.6	13.8	7.1	43.3	294.1	725.1
9/22/2018	47.3	48.6	23.1	23.4	721.3	733.5	13.6	13.6	0.0	0.0	673.9	685.0
9/23/2018	47.0	47.4	23.0	23.4	718.3	721.4	13.6	13.6	0.0	0.0	671.2	674.0
9/24/2018	-10.0	799.3	23.1	23.3	703.2	1146.8	8.8	13.6	4.5	40.8	331.4	762.0
9/25/2018	-9.0	-8.6	23.1	23.3	696.4	703.4	8.8	8.8	0.0	0.0	705.0	712.4
9/26/2018	-8.7	-8.5	23.1	23.4	694.1	696.5	8.8	8.8	0.0	0.0	702.7	705.1
9/27/2018	-8.7	-8.3	23.1	23.3	692.3	694.2	8.8	8.8	0.0	0.0	700.6	702.9
9/28/2018	-8.4	923.5	23.0	23.3	691.9	1183.0	8.8	13.6	4.1	106.5	255.0	727.4
9/29/2018	0.9	1.8	23.0	23.4	697.3	707.5	13.6	13.6	0.0	0.0	696.4	705.7
9/30/2018	0.7	1.1	23.0	23.3	694.4	697.4	13.6	13.6	0.0	0.0	693.5	696.5

Circle Chart Index

Environmental Geo-Technologies, LLC 28470 Citrin Drive Romulus, MI 48174

Chart Recorder #1

Channel #1
Blue Pen - Well 1 Injection Pressure (chart value x 30)

Channel #2
Red Pen – Well 1 Annulus Pressure (chart value x 30)

Channel #3
Green Pen – Well 1 Flow Rate (chart value x 4)

Channel #4
Black Pen – Well 1 Annulus Tank Level (chart value x 0)

Chart Recorder #2

Channel #1
Blue Pen – Well 2 Injection Pressure (chart value x 30)

Channel #2
Red Pen – Well 2 Annulus Pressure (chart value x 30)

Channel #3
Green Pen – Well 2 Flow Rate (chart value x 4)

Channel #4
Black Pen – Well 2 Annulus Tank Level (chart value x 0)

Chart Recorder #3

Channel #1
Blue Pen – Injection pH Well 1 & 2 (chart value + 3.3)

Channel #2
Red Pen – Well 1 Monthly Volume (chart value x 100,000)

Channel #3
Green Pen – Well 2 Monthly Volume (chart value x 100,000)

Channel #4
Black Pen – Temperature (chart value x 0)

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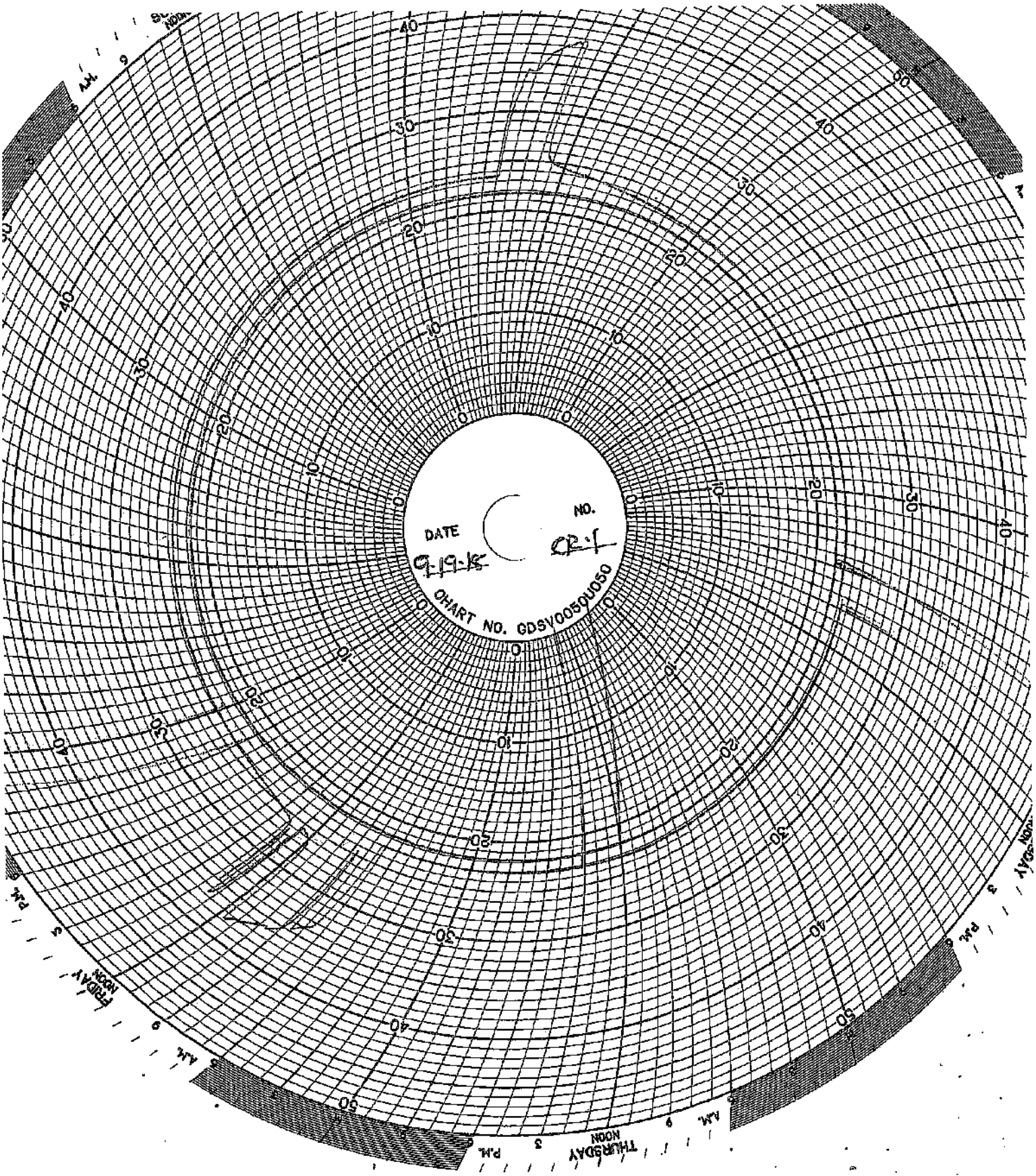
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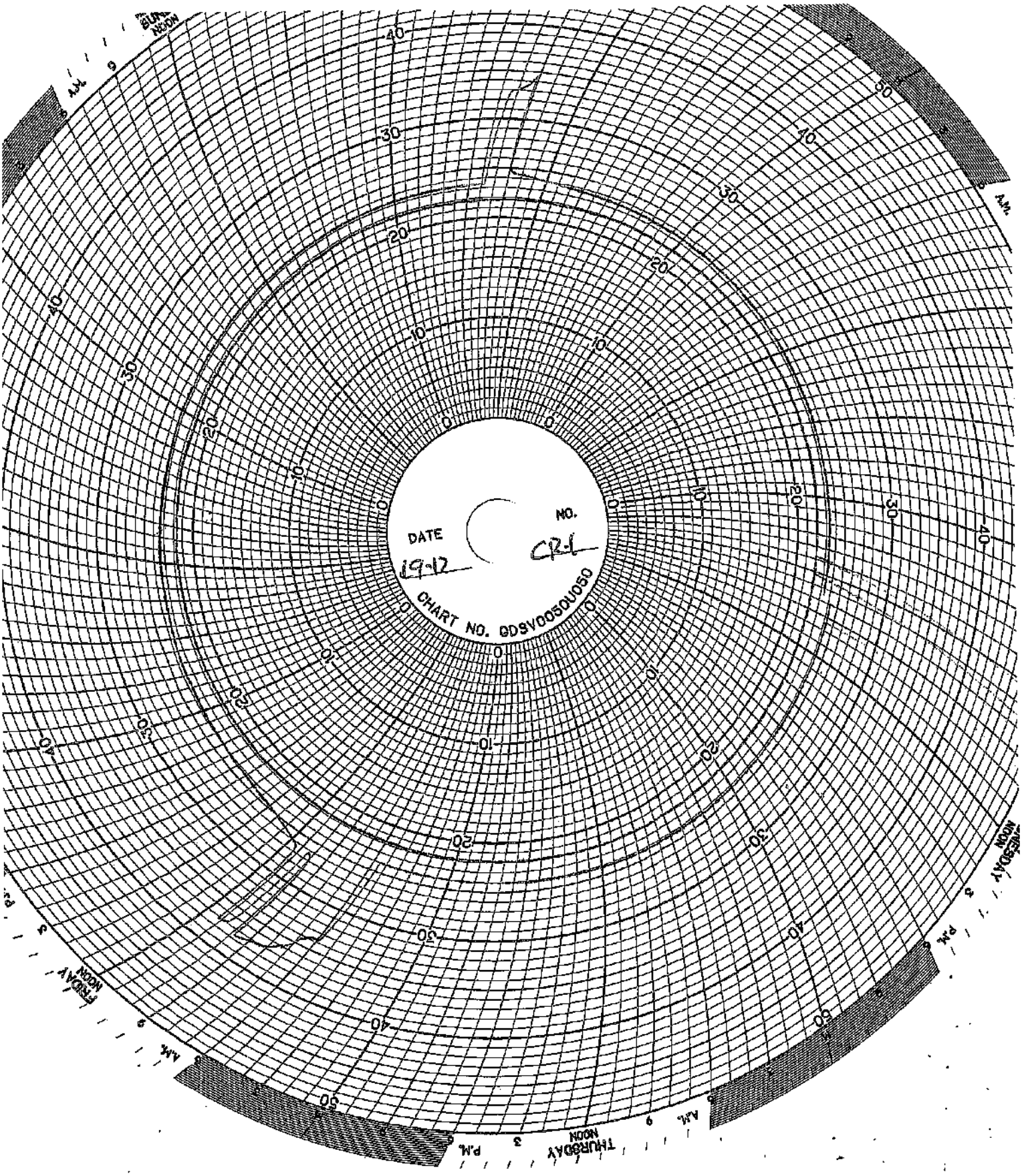
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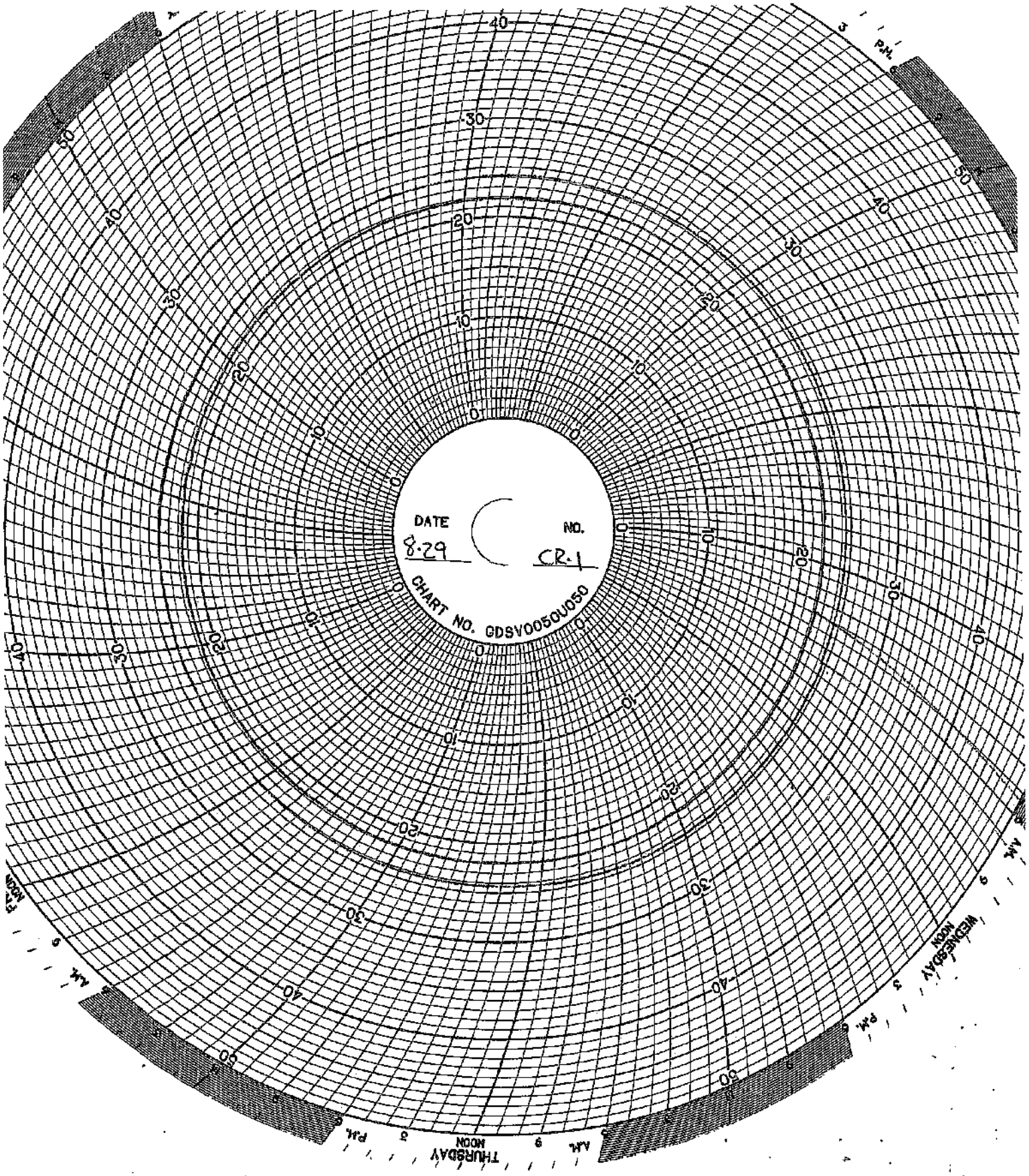
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WELL 2 DATA

Well 02 Monthly Data

Date	Min Injection Pressure (PSIG)	Max Injection Pressure (PSIG)	Min Sight Glass Level (in)	Max Sight Glass Level (in)	Min Annulus Pressure (PSIG)	Max Annulus Pressure (PSIG)	Min Injectate pH	Max Injectate pH	Min Flow Rate (GPM)	Max Flow Rate (GPM)	Min Differentail Pressure (PSIG)	Max Differential Pressure (PSIG)
9/1/2018	0	0	18.5	19.3	232.8	235.6	7.1	7.1	0	0	232.8	235.7
9/2/2018	0	0	18.6	19.4	230.5	233.7	7.1	7.1	0	0	230.5	233.7
9/3/2018	0	0	18.5	19.4	228.0	231.6	7.1	7.1	0	0	228.0	231.6
9/4/2018	0	0	18.5	19.4	225.7	228.9	7.1	7.1	0	0	225.7	228.9
9/5/2018	0	0	18.6	19.4	223.4	226.8	7.1	7.1	0	0	223.4	226.8
9/6/2018	0	0	18.8	19.0	220.8	224.0	7.1	7.1	0	0	220.8	224.0
9/7/2018	0	0	18.7	18.9	218.2	221.7	7.1	7.1	0	0	218.2	221.7
9/8/2018	0	0	18.7	18.8	216.1	218.9	7.1	7.1	0	0	216.1	218.9
9/9/2018	0	0	18.3	19.1	213.5	216.5	7.1	7.1	0	0	213.5	216.5
9/10/2018	0	0	18.4	19.1	211.7	214.2	7.1	7.1	0	0	211.7	214.2
9/11/2018	0	0	18.4	19.1	209.7	213.1	7.1	7.1	0	0	209.7	213.1
9/12/2018	0	0	18.7	19.2	208.0	210.8	7.1	7.1	0	0	208.0	210.8
9/13/2018	0	0	18.7	18.8	206.3	208.7	7.1	7.1	0	0	206.3	208.7
9/14/2018	0	0	18.4	19.1	200.2	207.3	13.8	13.8	0	0	200.2	207.3
9/15/2018	0	0	18.5	19.2	192.0	200.7	13.8	13.8	0	0	192.0	200.7
9/16/2018	0	0	18.4	19.2	162.3	192.4	13.8	13.8	0	0	162.3	192.4
9/17/2018	0	0	17.4	18.9	162.0	377.2	13.8	13.8	0	0	162.0	377.2
9/18/2018	0	0	17.4	18.2	342.2	353.6	13.8	13.8	0	0	342.2	353.6
9/19/2018	0	0	17.7	17.9	331.1	342.5	13.8	13.8	0	0	331.1	342.5
9/20/2018	0	0	17.7	17.9	322.2	331.7	13.8	13.8	0	0	322.2	331.7
9/21/2018	0	0	17.4	18.3	314.0	322.6	13.6	13.8	0	0	314.0	322.6
9/22/2018	0	0	17.3	18.1	307.6	314.6	13.6	13.6	0	0	307.6	314.6
9/23/2018	0	0	17.4	18.1	302.3	308.1	13.6	13.6	0	0	302.3	308.1
9/24/2018	0	0	17.6	18.1	65.4	302.7	8.8	13.6	0	0	65.4	302.7
9/25/2018	0	0	14.7	17.7	59.2	374.6	8.8	8.8	0	0	59.2	374.6
9/26/2018	0	0	14.3	15.1	24.0	179.2	8.8	8.8	0	0	24.0	179.2
9/27/2018	0	0	14.3	15.2	66.8	79.0	8.8	8.8	0	0	66.8	79.0
9/28/2018	0	0	9.8	15.0	69.7	769.1	8.8	13.6	0	0	69.7	769.1
9/29/2018	0	0	13.5	14.5	69.2	71.2	13.6	13.6	0	0	69.2	71.2
9/30/2018	0	0	13.5	14.4	68.8	70.6	13.6	13.6	0	0	68.8	70.6

Circle Chart Index

Environmental Geo-Technologies, LLC 28470 Citrin Drive Romulus, MI 48174

Chart Recorder #1

Channel #1
Blue Pen - Well 1 Injection Pressure (chart value x 30)

Channel #2
Red Pen – Well 1 Annulus Pressure (chart value x 30)

Channel #3
Green Pen – Well 1 Flow Rate (chart value x 4)

Channel #4
Black Pen – Well 1 Annulus Tank Level (chart value x 0)

Chart Recorder #2

Channel #1
Blue Pen – Well 2 Injection Pressure (chart value x 30)

Channel #2
Red Pen – Well 2 Annulus Pressure (chart value x 30)

Channel #3
Green Pen – Well 2 Flow Rate (chart value x 4)

Channel #4
Black Pen – Well 2 Annulus Tank Level (chart value x 0)

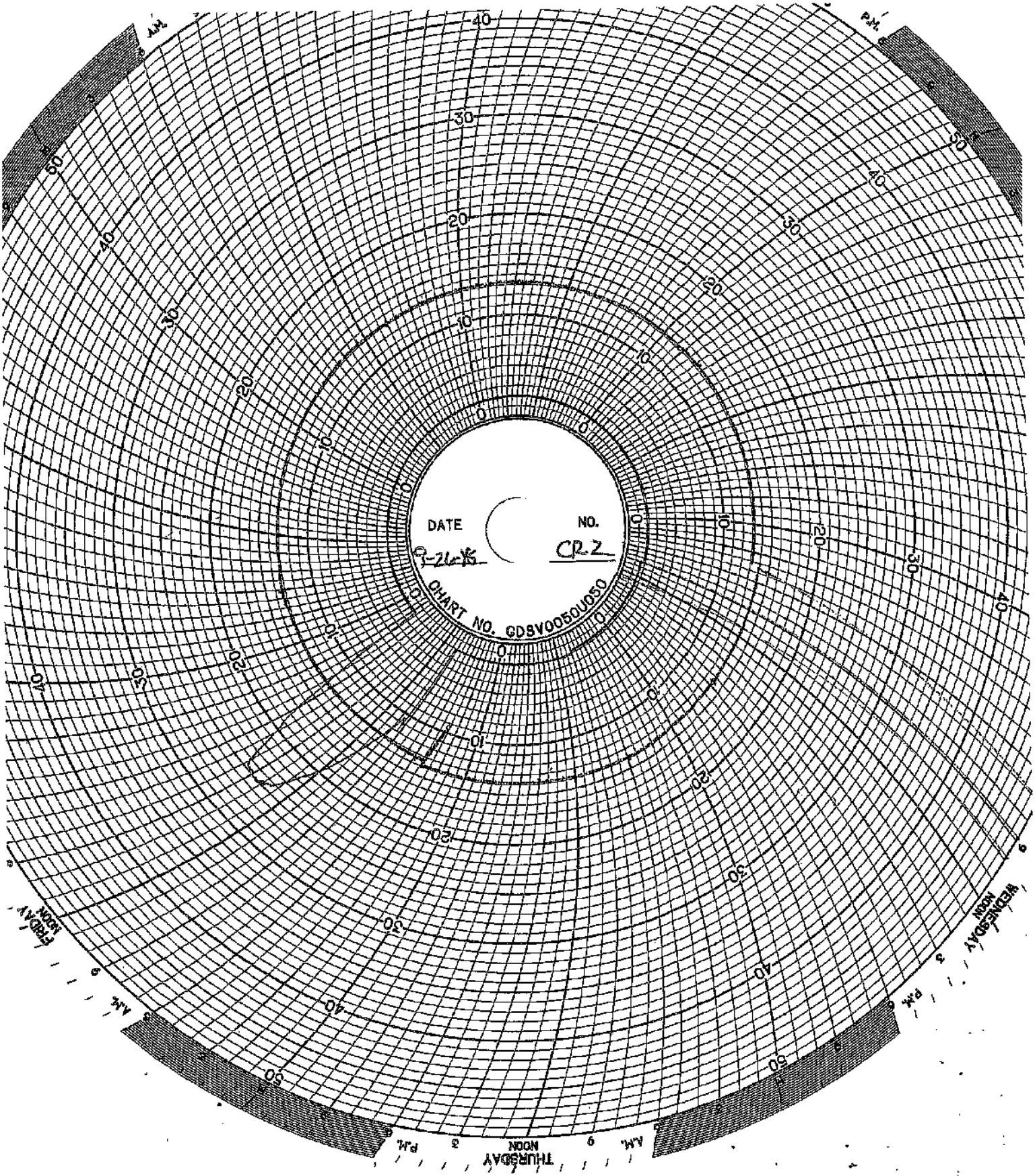
Chart Recorder #3

Channel #1
Blue Pen – Injection pH Well 1 & 2 (chart value ÷ 3.3)

Channel #2
Red Pen – Well 1 Monthly Volume (chart value x 100,000)

Channel #3
Green Pen – Well 2 Monthly Volume (chart value x 100,000)

Channel #4
Black Pen – Temperature (chart value x 0)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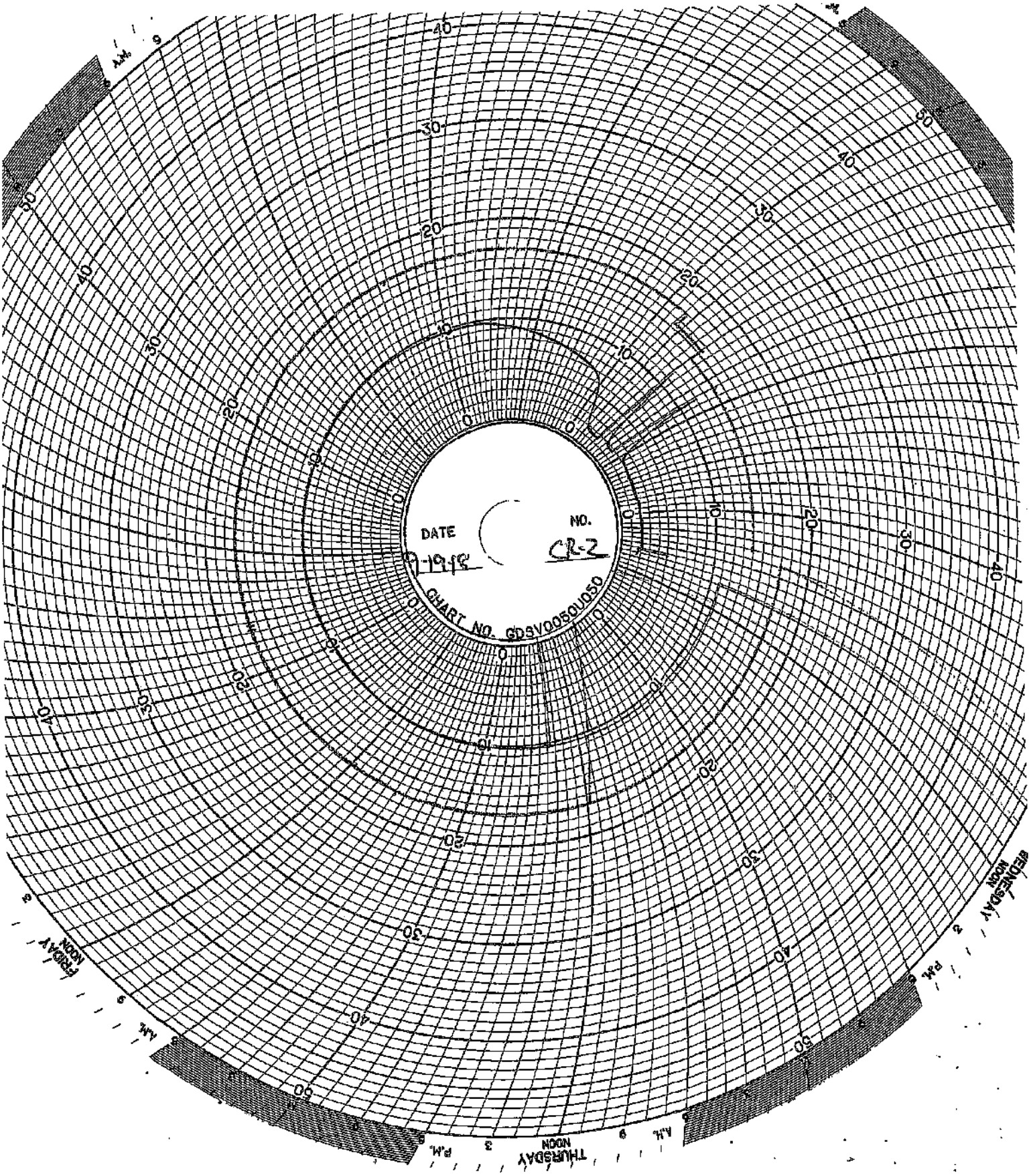
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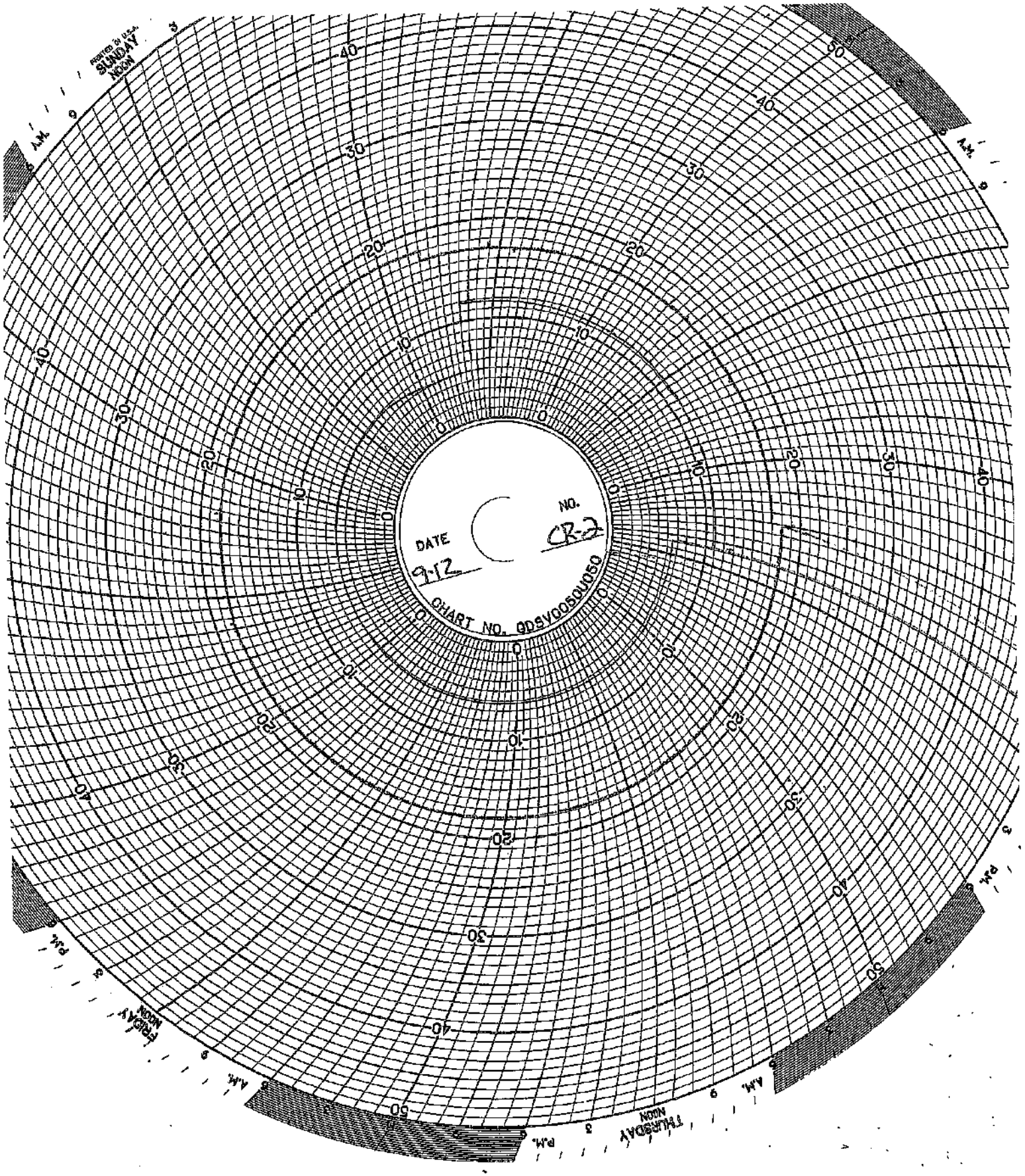
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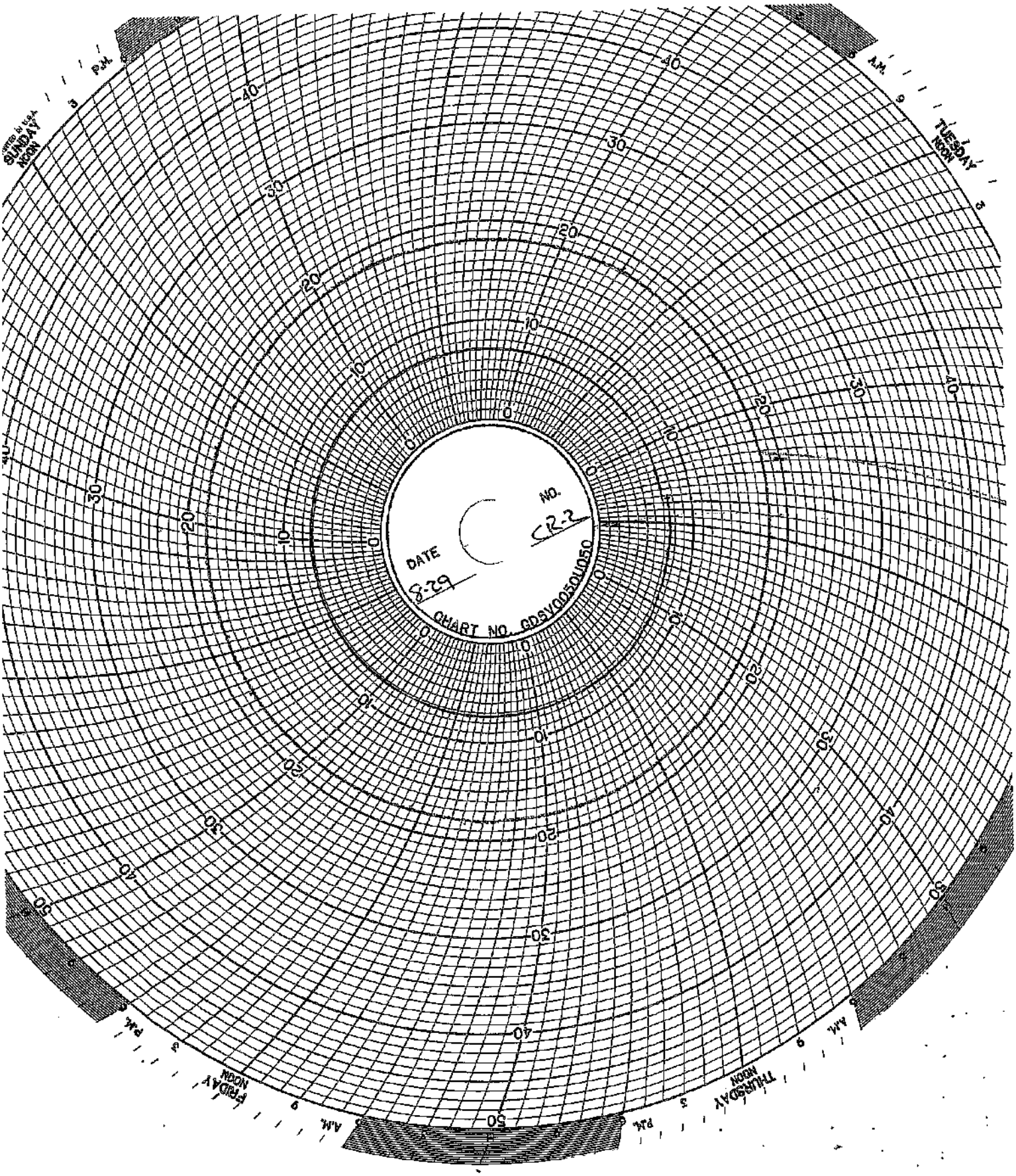
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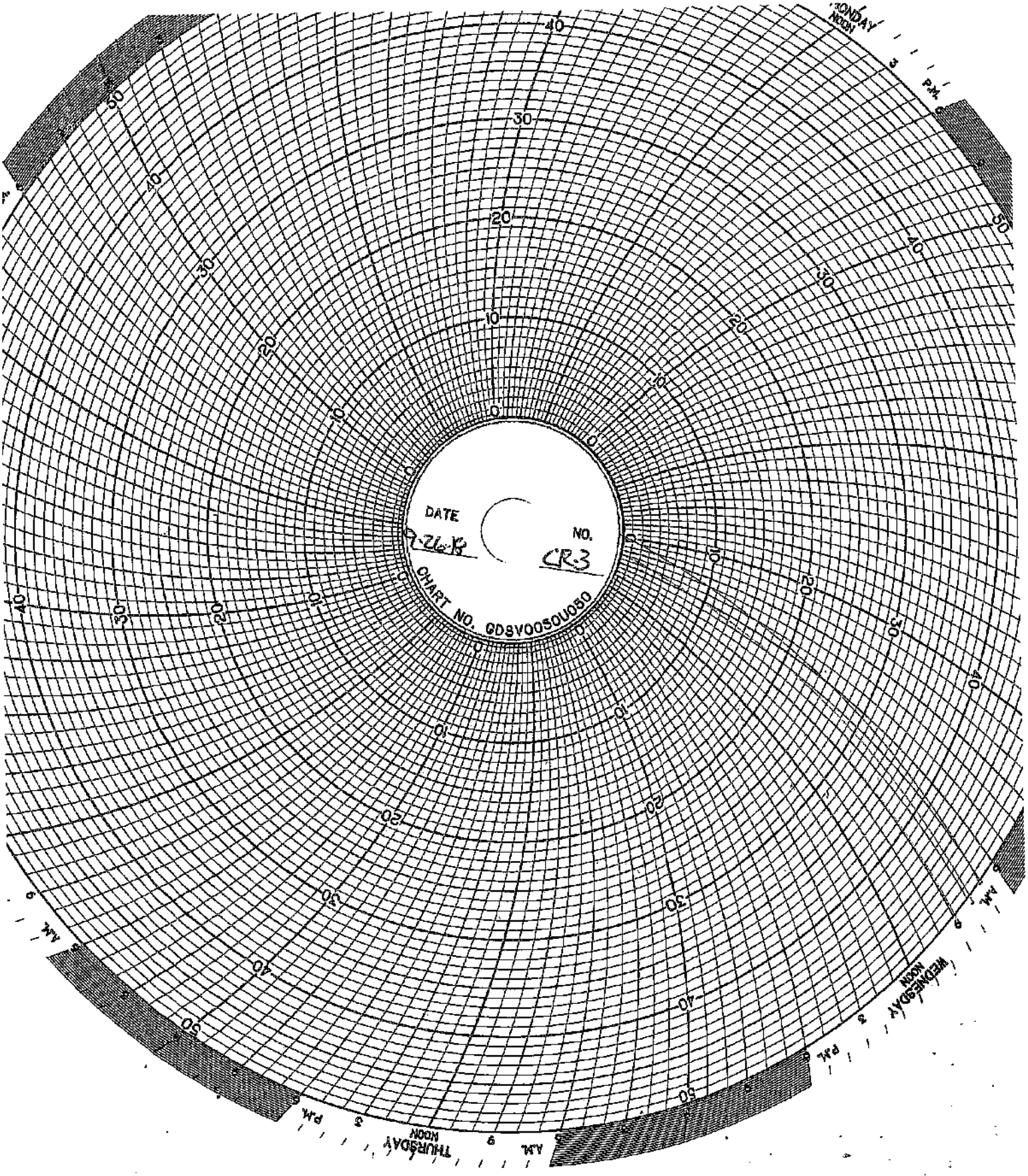
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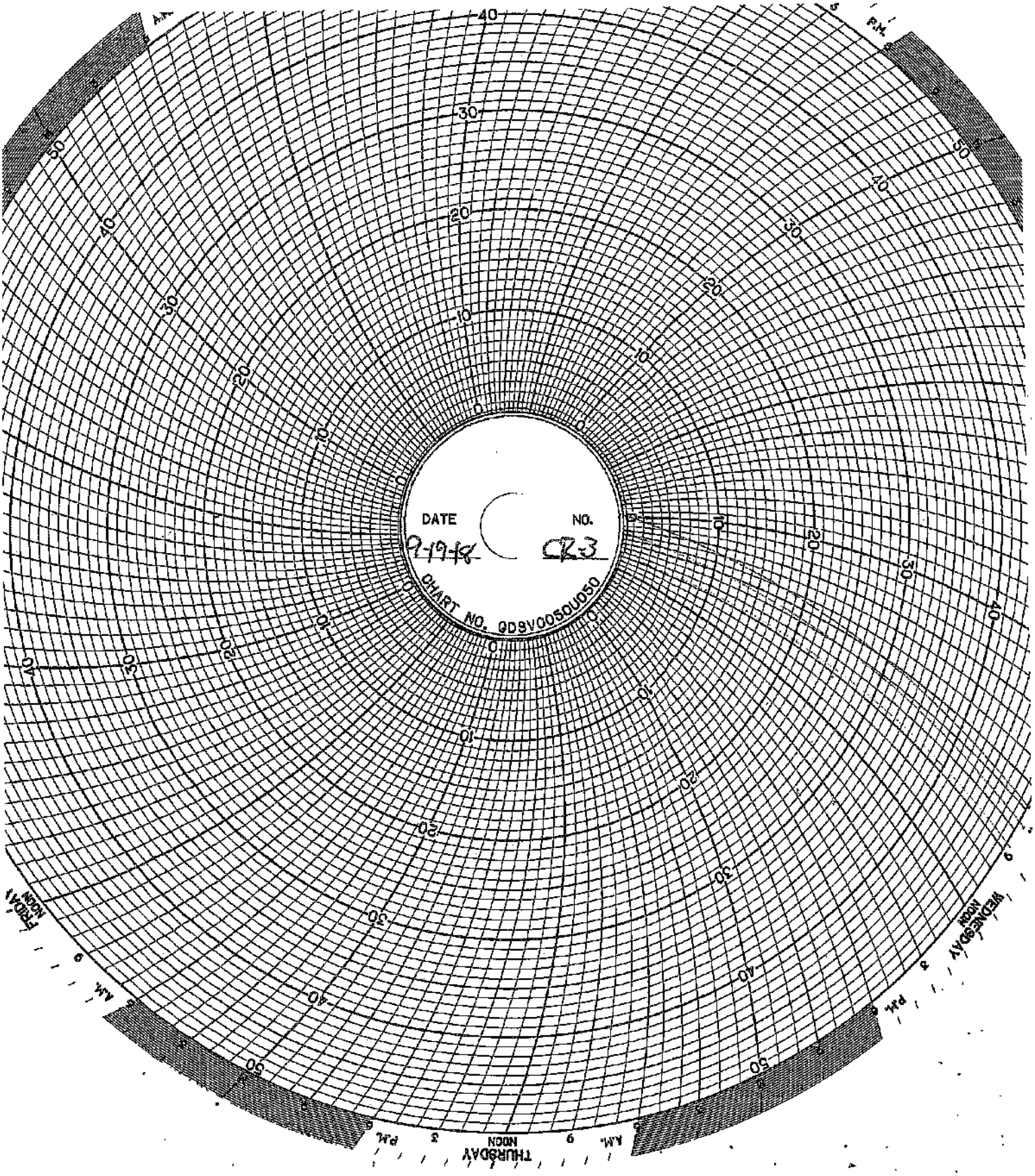
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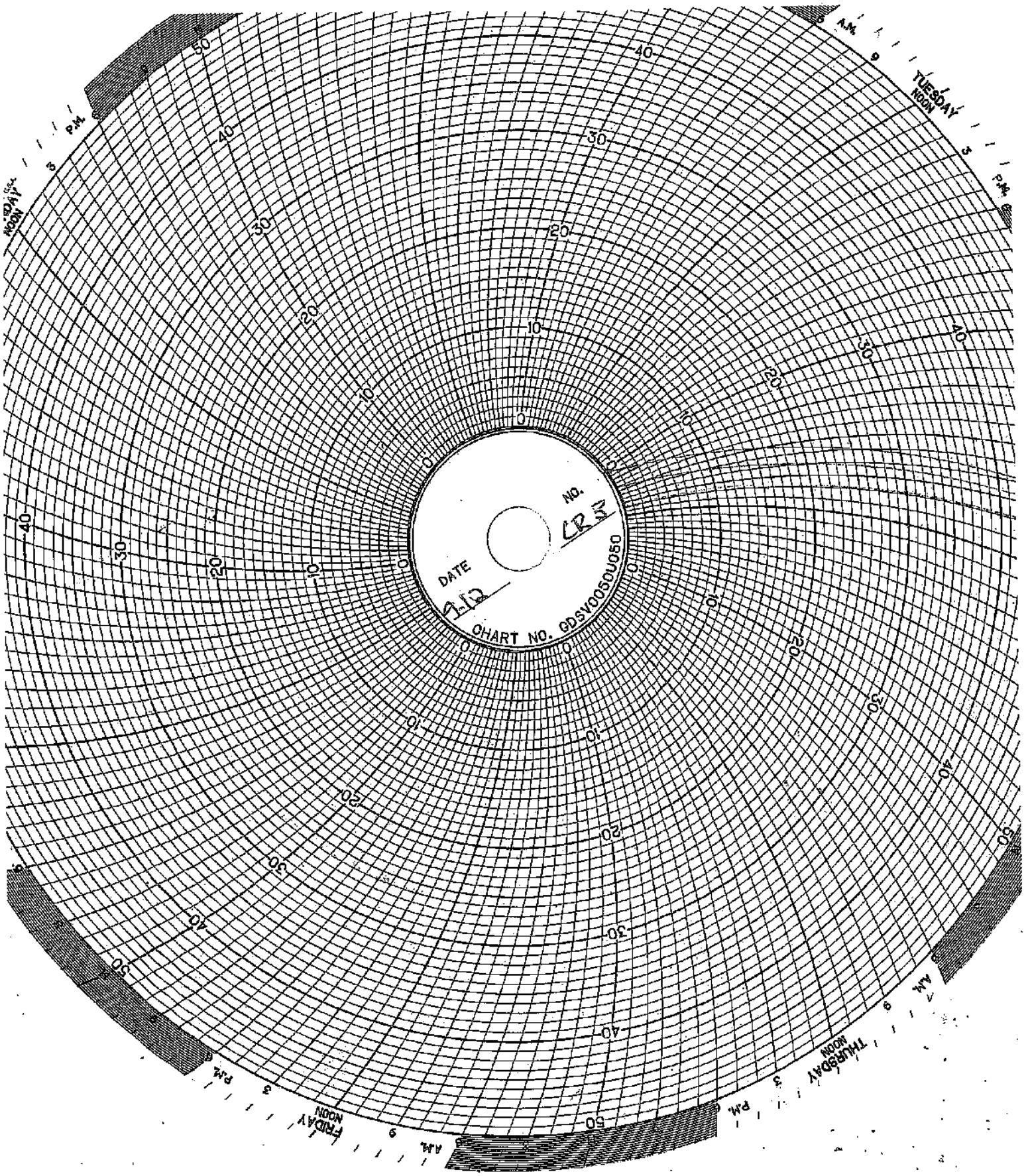
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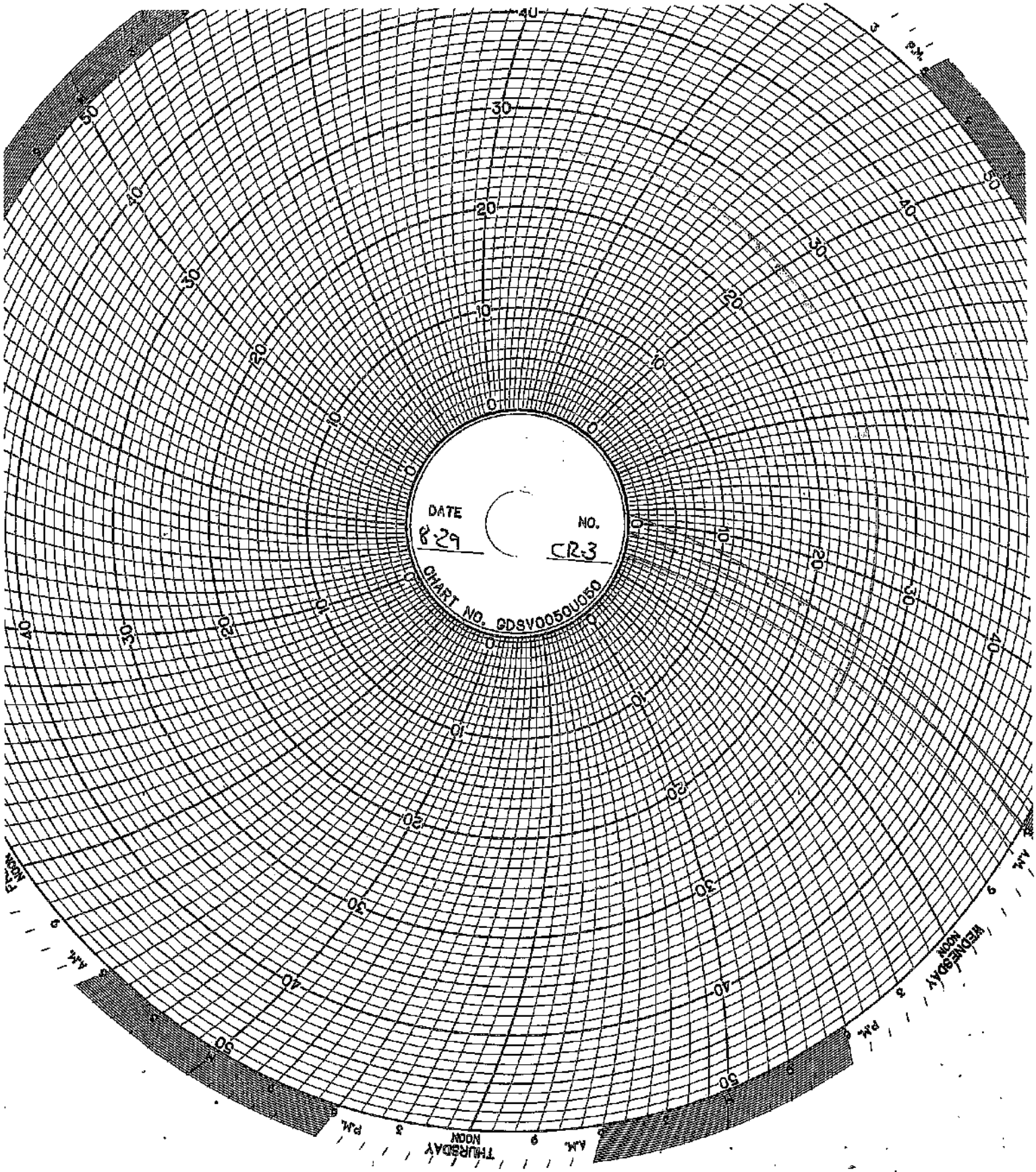
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A.M.
MIDNIGHT
THURSDAY
FRIDAY
WEDNESDAY

MAINTENANCE LOG

UIC Monthly Maintenance Log

9/28/2018	Well 2	Disconnected the piping and blind flanged the well string

CORROSION MONITORING

CORROSION MONITORING COUPONS VISUAL DESCRIPTION

September, 2018

Fiberglass Coupon

The coupon is dark orange (rust) in color with similar semi-smooth textures on both sides. Its cut edges appear sanded. The coupon is free of pits, cracks, swelling, wicking and blemishes. No change in weight from last month.

Hastelloy Coupon

This coupon is identified as C276 with Serial Number 5. The coupon is silver in color with a lightly sandblasted texture. It is clean and free of pits, cracks, and blemishes. There appears to be no effect on this coupon. No change in weight from last month.

Stainless Steel Coupon

This coupon continues to experience corrosion, no real loss of mass since last month. There was very little injection that happened this month. No change in weight from last month.

CORROSION MONITORING PLAN
COUPON SUMMARY

Date	Hastelloy (C267)	Stainless Steel (316L)	Fiberglass (Redbox)	
12/19/2013	13.330 g	10.848 g	7.309 g	Initial Mass @ start up
2/21/2014	13.329 g	10.846 g	7.306 g	
3/10/2014	13.327 g	10.845 g	7.300 g	
4/18/2014	13.324 g	10.841 g	7.272 g	
5/30/2014	13.328 g	10.818 g	7.226 g	
6/30/2014	13.321 g	10.337 g	7.196 g	
7/11/2014	13.323 g	10.304 g	7.196 g	
8/12/2014	13.328 g	10.045 g	7.182 g	
9/17/2014	13.321 g	9.997 g	7.090 g	
10/30/2014	13.321 g	9.387 g	7.075 g	
11/21/2014	13.320 g	9.386 g	7.069 g	
12/19/2014	13.321 g	9.315 g	7.084 g	
1/12/2015	13.321 g	9.289 g	7.063 g	
2/23/2015	13.339 g	9.286 g	7.005 g	New hastelloy coupon
3/31/2015	13.339 g	9.286 g	7.005 g	
4/27/2015	13.335 g	9.130 g	6.852 g	
5/21/2015	13.336 g	9.124 g	6.809 g	
6/12/2015	13.334 g	9.126 g	6.819 g	
7/27/2015	13.337 g	9.127 g	6.818 g	
8/26/2015	13.337 g	9.022 g	6.780 g	
9/21/2015	13.336 g	8.987 g	6.792 g	
10/19/2015	13.335 g	8.985 g	6.797 g	
11/16/2015	13.334 g	8.982 g	6.788 g	
12/17/2015	13.334 g	8.933 g	6.791 g	
1/29/2016	13.334 g	8.931 g	6.788 g	
2/16/2016	13.332 g	8.799 g	6.757 g	
3/31/2016	13.339 g	9.286 g	7.005 g	
4/22/2016	13.333 g	8.590 g	6.744 g	
5/31/2015	13.334 g	6.084 g	6.784 g	
6/30/2016	13.328 g	10.942 g	6.793 g	New stainless steel coupon
8/3/2016	13.326 g	10.529 g	6.743 g	
8/29/2016	13.325 g	10.020 g	6.723 g	
10/27/2016	13.325 g	8.765 g	6.708 g	
11/29/2016	13.327 g	8.571 g	6.740 g	
12/12/2016	13.323 g	8.223 g	6.717 g	
1/3/2017	13.325 g	8.059 g	6.712 g	
2/28/2017	13.324 g	7.634 g	6.727 g	
3/24/2017	13.325 g	7.370 g	6.732 g	
4/28/2017	13.325 g	6.736 g	6.736 g	
5/11/2017	13.323 g	7.352 g	6.689 g	
6/12/2017	13.323 g	7.357 g	6.689 g	
7/5/2017	13.323 g	7.355 g	6.689 g	
8/30/2017	13.324 g	7.353 g	18.105 g	New Fiberglass coupon
9/28/2017	13.325 g	7.352 g	18.060 g	
10/11/2017	13.324 g	7.350 g	18.038 g	
11/16/2017	13.325 g	7.363 g	18.047 g	
12/12/2017	13.326 g	7.308 g	18.307 g	

CORROSION MONITORING PLAN
COUPON SUMMARY

Date	Hastelloy	Stainless Steel	Fiberglass	
1/29/2018	13.326 g	10.930 g	18.027 g	New stainless steel coupon
2/9/2018	13.325 g	10.932 g	18.044 g	
3/19/2018	13.325 g	10.926 g	18.030 g	
4/16/2018	13.336 g	10.863 g	18.068 g	
5/17/2018	13.325 g	10.858 g	18.037 g	
6/20/2018	13.325 g	10.855 g	18.029 g	
7/12/2018	13.326 g	10.852 g	18.032 g	
8/21/2018	13.326 g	10.854 g	18.031 g	
9/14/2018	13.326 g	10.852 g	18.036 g	

CORROSION MONITORING COUPONS BASELINE VISUAL DESCRIPTION

November 4, 2013

Fiberglass

The fiberglass coupon is Red Box 2000 type and is 2-1/2 inches long by 1/2 inch wide and 1/4 inches thick. It is a dark orange (rust) in color with a glossy shine on one side a polished look on the opposite side and the cut edges look sanded.

Hastelloy

The hastelloy coupon is identified as C276 with serial number 1. The dimensions of the coupon are 3 inches long by 1/2 inch wide and 1/4 inch thick. The coupon is silver in color with a lightly sandblasted surface.

Stainless Steel

The stainless steel coupon is identified as 316L with serial number C1562. The dimensions of the coupon are 3 inches long by 1/2 inch wide and 1/4 inch thick. The coupon is silver in color with a lightly sandblasted surface.

GHESQUIERE PLASTIC TESTING, INC.

20450 HARPER AVENUE
HARPER WOODS, MI 48225
PHONE (313) 886-3556
FAX (313) 886-1771

Report Date: November 15, 2013
Test Date: October 15 - November 14, 2013

Report #1310-77651
Performed for:
Environmental Geo-Technologies
28470 Citrin Drive
Romulus, MI 48174

Attention: Mr. Don Anderson

WORK REQUESTED:

Perform Barcol Hardness test on sample submitted.

DESCRIPTION OF SAMPLE:

Sample submitted was identified as a fiberglass test coupon.

(P. O. #Credit Card).

WORK PERFORMED:

Test specimen was prepared as necessary and conditioned for a minimum of 24 hours at standard laboratory conditions prior to testing.

Barcol Hardness test was performed in accordance with the procedures of ASTM D2583-13. One specimen was tested.

RESULTS:

The following determination was made based upon the above test:

BARCOL HARDNESS

	Hardness
Specimen 1	90

Specimen is being returned with this report for further evaluation.

GHESQUIERE PLASTIC TESTING, INC.

M. W. Ghesquiere
President

MWG/kni

TOTAL 1 PAGES

GHESQUIERE PLASTIC TESTING, INC.

20450 HARPER AVENUE
HARPER WOODS, MI 48225
PHONE (313) 885-8595
FAX (313) 885-1771

Report Date: February 17, 2014
Test Date: February 14 - 17, 2014

Report #1402-78036
Performed for:
Environmental Geo-Technologies
28470 Citrin Drive
Romulus, MI 48174

Attention: Mr. Don Anderson

WORK REQUESTED:

Perform Barcol Hardness test on sample submitted.

DESCRIPTION OF SAMPLE:

Sample submitted was identified as a fiberglass test coupon.

(P. O. #Credit Card).

WORK PERFORMED:

Test specimen was prepared as necessary and conditioned for a minimum of 24 hours at standard laboratory conditions prior to testing.

Barcol Hardness test was performed in accordance with the procedures of ASTM D2583-13. One specimen was tested.

RESULTS:

The following determination was made based upon the above test:

BARCOL HARDNESS

	Hardness
Specimen 1	90

Specimen was returned to the client on February 17, 2014.

GHESQUIERE PLASTIC TESTING, INC.

M. W. Ghesquiere
President

MWG/dm

TOTAL 1 PAGES

GHESQUIERE PLASTIC TESTING, INC.

20450 HARPER AVENUE
HARPER WOODS, MI 48225
PHONE (313) 885-3535
FAX (313) 885-1771

Report Date: June 16, 2014
Test Date: June 13 - 16, 2014

Report #1406-78499
Performed for:
Environmental Geo-Technologies, LLC
28470 Citrin Drive
Romulus, MI 48174

Attention: Mr. Don Anderson

WORK REQUESTED:

Perform Barcol Hardness test on sample submitted.

DESCRIPTION OF SAMPLE:

Sample submitted was identified as a fiberglass test coupon.

(P. O. #Credit Card).

WORK PERFORMED:

Test specimen was prepared as necessary and conditioned for a minimum of 24 hours at standard laboratory conditions prior to testing.

Barcol Hardness test was performed in accordance with the procedures of ASTM D2583-13. One specimen was tested.

RESULTS:

The following determination was made based upon the above test:

BARCOL HARDNESS	Hardness
Specimen 1	85

Specimen was returned to the client June 16, 2014.

GHESQUIERE PLASTIC TESTING, INC.

M. W. Ghesquiere
President

MWG/dm

October 2, 2014

- TEST REPORT -

PN 118325

PO Attn:John Frost

PLASTICS TESTING DEPARTMENT

Prepared For:

John Frost
Environmental Geo-Technologies, LLC
28470 Citrin Drive
Romulus, MI 48174

Prepared By: _____
Melissa Martin
Sr. Project Technician

Approved By: _____
Jim Drummond
Physical & Plastics Testing, Manager

www.ardl.com

2887 Gilchrist Rd. | Akron, Ohio 44305 | answers@ardl.com
Toll Free (800) 838-ARDL | Worldwide (330) 794-6600 | Fax (330) 794-6610

October 2, 2014

John Frost
Environmental Geo-Technologies, LLC

SUBJECT: Barcol Hardness on one material.
PO# Attn;John Frost

RECEIVED: One small section identified as; Fiberglass Coupon.

BARCOL HARDNESS ASTM D 2583-13a

	Results
Barcol Hardness, Instant	97

Prepared By: _____
Melissa Martin
Sr. Project Technician

Approved By: _____
Scott W. Yates
Plastics Testing Assistant Manager

sf

October 22, 2015

· TEST REPORT ·

PN 125322
PO 00154

PLASTICS TESTING DEPARTMENT

Prepared For:

John Frost
Environmental Geo-Technologies, LLC
28470 Citrin Drive
Romulus, MI 48174

Prepared By: _____
Melissa Martin
Sr. Project Technician

Approved By: _____
Jim Drummond, Sr.
Physical & Plastic Testing, Manager

October 22, 2015

John Frost
Environmental Geo-Technologies, LLC

SUBJECT: Barcol Hardness on one material.

RECEIVED: One small section identified as; Fiberglass Coupon.

BARCOL HARDNESS ASTM D 2583-13a
Instant Reading

	Results
Barcol Hardness, Instant	96

Prepared By: Melissa Martin
Sr. Project Technician

Approved By: Scott W. Yates
Plastics Testing Assistant Manager

tc

December 12, 2016

-TEST REPORT-

PN 132662
PO

PLASTICS TESTING DEPARTMENT

Prepared For:

John Frost
Environmental Geo-Technologies, LLC
28470 Citrin Drive
Romulus, MI 48174

Prepared By: _____
Melissa Martin
Senior Project Technician

Approved By: _____
Jim Drummond
Physical Testing, Manager

Rev 041916

December 12, 2016

John Frost
Environmental Geo-Technologies, LLC

SUBJECT: Barcol Hardness on one (1) material.

RECEIVED: One (1) small section identified as; Fiberglass Coupon.

BARCOL HARDNESS ASTM D 2583-13a
Instant Reading

	RESULTS
Barcol Hardness, Instant	96

Prepared By: _____
Melissa Martin
Senior Project Technician

Approved By: _____
Scott Yates
Plastics Testing, Assistant Manager

wk

"ARDL is ISO 17025 accredited by A2LA for the test methods listed on the certificates referenced on page one. NOTE: Non-ISO 17025 accredited test methods are designated with the ^ symbol to differentiate from ISO 17025 accredited methods in the body of the test report."

December 13, 2017

-TEST REPORT-

PN 139140

PO#

PLASTIC TESTING DEPARTMENT

Prepared For:

John Frost
Environmental Geo-Technologies, LLC
28470 Citrin Drive
Romulus, MI 48174

Prepared By: _____
Melissa Martin
Sr Project Technician

Approved By: _____
Jim Drummond
Rubber & Plastic Testing, Manager

Rev 041916

December 13, 2017

John Frost
Environmental Geo-Technologies, LLC

SUBJECT: Barcol Hardness on one material.

RECEIVED: One small section identified as; Fiberglass Coupon.

BARCOL HARDNESS ASTM D 2583-13a
Instant Reading

	Results
Barcol Hardness, Instant	96

Prepared By: Melissa Martin
Sr Project Technician

Approved By: Scott Yates
Plastics Testing, Assistant Manager

sc

ARDL is ISO 17025 accredited by A2LA for the test methods listed on the certificates referenced on page one. NOTE: Non-ISO 17025 accredited test methods are designated with the ^ symbol to differentiate from ISO 17025 accredited methods in the body of the test report.

INJECTION

FINGERPRINTS

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	9-21-18
Receiving ID#	I 0921180 1
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	JKF
Sampled by	

COPY

LABORATORY ANALYSIS (For Lab Use Only)			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140°F	Magnesium	
pH (S.U.)	13.6	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.08	TDS	5%
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	66°F		
Conductivity	103		
% Solids	5%		
Turbidity	Yes No		
Color (visual)			
TSS (%)	20.1		
Radiation Screen (as needed)			
Lab Signature	John Ross		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 8:00 am	9-24-18
Receiving ID#	E092418O1
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	JKF
Sampled by	

COPY

LABORATORY ANALYSIS (To be filled out by Laboratory)			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140°F	Magnesium	
pH (S.U.)	8.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.0	TDS	11%
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	67°F		
Conductivity	102 mS		
% Solids	32%		
Turbidity	Yes No		
Color (visual)			
TSS (%)	21%		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 1:00pm	9-28-18
Receiving ID#	T092818011
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	JKF
Sampled by	

COPY

LABORATORY INFORMATION (To be filled out by the laboratory)			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140°F	Magnesium	
pH (S.U.)	13.6	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.12	TDS	1.7%
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil In Sample	Yes No		
Temperature	67°F		
Conductivity	155 mS		
% Solids	12.7%		
Turbidity	Yes No		
Color (visual)			
TSS (%)	11%		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 10:00 am	09-14-18
Receiving ID#	I09141801
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	JRF
Sampled by	

COPY

LABORATORY ANALYSIS Fluid Samples		Liquid Extract	
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140°F	Magnesium	
pH (S.U.)	13.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.07	TDS	4%
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	65°F		
Conductivity	105mS		
% Solids	4%		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

WASTE STREAMS
CHARACTERIZATIONS

01383

Page 1

Printed: 26 DEC 2017

Generator's Waste Profile 578217-05

Status : PENDING

Stericycle Environmental Solutions

Starts : 21 DEC 2017
Expires : 31 DEC 2018

Sales Rep [redacted]
Acct Mngr

A: GENERATOR (78501) SITE INFORMATION

[redacted]

Neshap N

Phone [redacted]

TSDF Approval Exp

B: CUSTOMER (PS636) INFORMATION

[redacted]

acceptable 092018

C: WASTE INFORMATION

On File > MSDS No Analysis No Sample No

Waste Name WASTE CHROMATE SOLUTION
Process SPENT SOLUTION FROM GALVANIZING OF STEEL COILS
Unused Commercial Product No Spill Residue No

D: PHYSICAL CHARACTERISTICS OF WASTE

pH Range 2-4
Free Liq 75-100

Phys States L-Liq S-Sol
Top Color GREEN/ORANGE
Mid Color
Bot Color
% Ash 0
% Water <0
Odor None
Layers Bi-Layered
Spec Grav 1.2
BTU/Lbs <5000
% Halogens N/A
Flash Test Closed Cup
Flash Rnge 141-200F
Viscosity Med
Pumpable Yes

E: CHEMICAL COMPOSITION OF WASTE

(100 - 100 %) SOME FLOOR DRY POSSIBLE (- %)

CHROMATE SOLUTION

PCB's NS Cyanides NS Phenolics No Sulfides NS Dioxins No
TOC 1-10% VOC < 500PPM
Information Provided By Generator

F: METALS METHOD Gen Knowledge

Arsenic <5
Barium <100
Cadmium <1
Merc TCLP <0.2
Lead <5
Chromium 410PPM
Selenium <1
Merc Tot
Silver <5
Nickel NT
Thallium NT
Vanadium NT
Zinc NT
Copper NT
Chrome-6 NT
Cobalt NT

G: OTHER CHARACTERISTICS OF WASTE

Ign. Solid No Oxidizer No Explosive No Shock Sensitive No Cyanide Reactive No Sulfide Reactive No
Explosive N/A Asbestos N/A Radioactive No Water Reactive No Reactive (Other) No
Herbicides No Pesticides N Ammonia No Infectious No Medical No

H: EPA / STATE WASTE IDENTIFICATION

EPA Waste Yes State Waste No TSCA No Waste Water No Universal Waste No
Form WI13 Source G05 Origin 1 SubPart CC No NESHAPS No CERCLA No Debris No Reg. Organics No

EPA Codes D002
State Codes
UHC
Categorical Discharge Standards No CTW Category N/A DW/EHW: DW

I: SHIPPING INFORMATION

Marine Pollutant No

Containers 5 Yr Mega Drum Qty to Ship Now Projected Volume

DOT Descrip NA3082 HAZARDOUS WASTE, LIQUID, N.O.S. (CHROMIUM) 9 PGIII RQ(D007=5) ERG(171)

J: SPECIAL DISPOSAL INSTRUCTIONS

Waste Categs STAB07

Printed: 26 DEC 2017

Generator's Waste Profile 578217-05

Status : PENDING

Stericycle Environmental Solutions

Starts : 21 DEC 2017
Expires : 31 DEC 2018

Sales Rep [redacted]
Acct Mngr

GENERATOR CERTIFICATION

I hereby represent and warrant that I have personally examined and am familiar with the information contained and submitted on this waste profile and all attached documents. Based on my inquiry and personal knowledge of those individuals responsible for supplying or obtaining the information, the information contained herein is true, accurate, and complete to the best of my knowledge and belief. Furthermore, no material fact has been omitted as to make this misleading. I understand that others may rely on this representation and warranty in the handling and processing of the waste material described herein. By signing this waste profile, I am certifying that I am authorized to sign such documentation on behalf of the generator.

[redacted] 12-27-17

[redacted] Date

In accordance with 40 CFR 264.12(b), Petro-Chem Processing Group of Nortru, LLC has the appropriate permits for, and will accept the waste the generator is shipping as described in this profile.

Analytical Laboratory Report

Merit Laboratories, Inc.

Lab Sample ID: S85207.01
Sample Tag: 13410 - Chromic Acid
Collected Date/Time: 11/14/2017 00:01
Matrix: Liquid
COC Reference: 1206

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	32oz Glass	None	Yes	4.6	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	Limits	Flags
Extraction / Prep.								
Mercury Digestion*	Completed			SW7471B	11/20/17 09:00	JRH		
Metal Digestion	Completed			SW3015A	11/21/17 08:30	CCM		
TCLP Zero Headspace Ext.	<0.5%			SW1311	11/16/17 11:15	JBL		
TCLP/SPLP BNA Extraction	Completed			SW3510C	11/16/17 16:00	PLB		
TCLP Extraction								
Initial Sample pH	<0.5%			SW1311	11/16/17 11:15-11/16	JBL		
pH after 3.5 ml HCl	<0.5%			SW1311	11/16/17 11:15-11/16	JBL		
% Solids	<0.5%			SW1311	11/16/17 11:15-11/16	JBL		
Sample Used g	<0.5%			SW1311	11/16/17 11:15-11/16	JBL		
Final Volume mL	<0.5%			SW1311	11/16/17 11:15-11/16	JBL		
TCLP Extraction Fluid	<0.5%			SW1311	11/16/17 11:15-11/16	JBL		
Final Extract pH	<0.5%			SW1311	11/16/17 11:15-11/16	JBL		
Inorganics								
Flash Point*	Not detected	oF	180	ASTMD3278-96	11/21/17 21:02	DMK	<140	
pH (Corrosivity)*	3.02	STD Units	0.01	SW9045D	11/21/17 23:04	ASB	2-12.5	
Reactive Cyanide	Not detected	mg/kg	1.0	E335.4/SM4500-CN	11/17/17 14:26	JDP		
Reactive Sulfide	Not detected	mg/kg	3.9	SM4500-S2 D	11/17/17 11:24	JDP		
Metals								
Arsenic, TCLP	Not detected	mg/L	0.20	SW6020A	11/21/17 10:31	CCM	5.0	
Barium, TCLP	Not detected	mg/L	1.0	SW6020A	11/21/17 10:31	CCM	100.0	
Cadmium, TCLP	Not detected	mg/L	0.20	SW6020A	11/21/17 10:31	CCM	1.0	
Chromium, TCLP	[redacted]	mg/L	0.50	SW6020A	11/21/17 10:29	CCM		
Copper, TCLP	1.93	mg/L	0.50	SW6020A	11/21/17 10:31	CCM		
Lead, TCLP	1.02	mg/L	0.30	SW6020A	11/21/17 10:31	CCM	5.0	
Mercury, TCLP*	Not detected	mg/L	0.0025	SW7471B	11/20/17 14:04	CCM	0.2	
Selenium, TCLP	Not detected	mg/L	0.40	SW6020A	11/21/17 10:31	CCM	1.0	
Silver, TCLP	Not detected	mg/L	0.20	SW6020A	11/21/17 10:31	CCM	5.0	
Zinc, TCLP	1,200	mg/L	25.0	SW6020A	11/21/17 10:29	CCM		
Organics - Semi-Volatiles								
TCLP Semi Volatiles								
o-Cresol*	Not detected	mg/L	1.0	SW8270D	11/23/17 00:20	PL	200.0	
p,m-Cresol	Not detected	mg/L	1.0	SW8270D	11/23/17 00:20	PL	200.0	
Pentachlorophenol	Not detected	mg/L	1.0	SW8270D	11/23/17 00:20	PL	100.0	
2,4,5-Trichlorophenol	Not detected	mg/L	1.0	SW8270D	11/23/17 00:20	PL	400.0	
2,4,6-Trichlorophenol	Not detected	mg/L	1.0	SW8270D	11/23/17 00:20	PL	2.0	
2,4-Dinitrotoluene	Not detected	mg/L	0.09	SW8270D	11/23/17 00:20	PL	0.13	
Hexachlorobenzene	Not detected	mg/L	0.09	SW8270D	11/23/17 00:20	PL	0.13	
Hexachlorobutadiene	Not detected	mg/L	0.1	SW8270D	11/23/17 00:20	PL	0.5	

I-Result is outside of stated limit criteria

Report to: [redacted]
Project: [redacted]

Generated on 11/27/2017
Report ID: S85207.01(02)

Lab Sample ID: S85207.01 (continued)
Sample Tag: 13410 - Chromic Acid

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	Limits	Flags
Organics - Semi-Volatiles (continued)								
TCLP Semi Volatiles (continued)								
Hexachloroethane	Not detected	mg/L	0.1	SW8270D	11/23/17 00:20	PL	3.0	
Nitrobenzene	Not detected	mg/L	0.1	SW8270D	11/23/17 00:20	PL	2.0	
Pyridine	Not detected	mg/L	0.1	SW8270D	11/23/17 00:20	PL	5.0	
Organics - Volatiles								
TCLP Volatiles								
Benzene	Not detected	mg/L	0.1	SW5030C/8260C	11/16/17 16:23	JML	0.5	
Carbon tetrachloride	Not detected	mg/L	0.1	SW5030C/8260C	11/16/17 16:23	JML	0.5	
Chlorobenzene	Not detected	mg/L	0.1	SW5030C/8260C	11/16/17 16:23	JML	100.0	
Chloroform	Not detected	mg/L	0.1	SW5030C/8260C	11/16/17 16:23	JML	6.0	
1,4-Dichlorobenzene	Not detected	mg/L	0.1	SW5030C/8260C	11/16/17 16:23	JML	7.5	
1,2-Dichloroethane	Not detected	mg/L	0.1	SW5030C/8260C	11/16/17 16:23	JML	0.5	
1,1-Dichloroethene	Not detected	mg/L	0.1	SW5030C/8260C	11/16/17 16:23	JML	0.7	
2-Butanone (MEK)	Not detected	mg/L	1.0	SW5030C/8260C	11/16/17 16:23	JML	200.0	
Tetrachloroethene	Not detected	mg/L	0.1	SW5030C/8260C	11/16/17 16:23	JML	0.7	
Trichloroethene	Not detected	mg/L	0.1	SW5030C/8260C	11/16/17 16:23	JML	0.5	
Vinyl chloride	Not detected	mg/L	0.1	SW5030C/8260C	11/16/17 16:23	JML	0.2	