Environmental GEO-Technologies, LLC

August 31, 2017

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 forty-fifth Monthly Report 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 hereby timely submits its twenty-sixth Injection Fluid Analyses (for July, 2017) identified on both Pages A-3 of 3 also in conformance with EGT's two EPA UIC permits with the attached "Data Summary Sheet" from a contract laboratory, Ann Arbor Technical Services, Inc., and, those results demonstrate compliance with all of the limits for each of the chemical entities ("Names) identified on Page A-3 of 3 for F039 waste even though EGT did not accept any F039 waste for July 2017.

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), T. Athans (EGT), P. Sullivan (EGT)

att.

rjp083117/EGTEPAMonthlyReport-July, 2017

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290 South Wagner Road
Ann Arbor, Michigan 48103
Tel. 734/995-0995 Fax. 734/995-3731
Michigan Laboratory ID: 9004
Wisconsin Laboratory ID: 998321720

Semivolatile Organic Compounds Data Summary Sheet

For: Mr. Richard Powals
Environmental Geo-Technologies, Inc.
28470 Citrin Drive
Romulus, MI 48174

ATS Project: Environmental Geo-Technologies, Inc. #E008-000
Report Date: 8/31/17
ATS SRF: 0802171

Sample Identification: July Composite 2017

Sample Date:	8/2/17	QC Batch Number:	QCORG0804171-E
Laboratory Receipt Date:	8/2/17		B7H0071
Preparation Date:	8/4/17	Sample Matrix:	Wastewater
Analysis Date:	8/11/17	Dilution Factor:	500

Parameter (CAS)	Method	Units	Result	Reporting Limit
Aldrin (309-00-2)	EPA 8270 Mod	mg/mL	<0.00001	0.00001
Benzidine (92-87-5)	EPA 8270 Mod	mg/mL	<0.00075	0.00075
N-Nitrosodimethylamine (62-75-9)	EPA 8270 Mod	mg/mL	<0.0001	0.0001
Tetraethyl Lead (78-00-2)	EPA 8270 Mod	mg/mL	<0.00005	0.00005
Hexachlorodibenzo-p-dioxins	EPA 1613B	mg/mL	<0.00000000005	0.00000000005
Octachlorodibenzofuran (39001-02-0)	EPA 1613B	mg/mL	<0.00000000005	0.00000000005
tachlorodibenzo-p-dioxin (3268-87-9)	EPA 1613B	mg/mL	<0.00000000005	0.00000000005
etrachlorodibenzo-p-dioxins	EPA 1613B	mg/mL	<0.00000000004	0.00000000004

Surrogates / Labeled Standards:	Method	Percent Recovery	Recovery Limits
2-Fluorobiphenyl	EPA 8270 Mod	75.6	(50 - 150)
Nitrobenzene-d5	EPA 8270 Mod	82.8	(50 - 150)
p-Terphenyl-d14	EPA 8270 Mod	89.9	(50 - 150)
Tetrachloro-m-xylene (TCMX)	EPA 8270 Mod	95.9	(50 - 150)
13C-1,2,3,4,7,8-HxCDD	EPA 1613B	67.6	(32 - 141)
13C-1,2,3,6,7,8-HxCDD	EPA 1613B	61.7	(28 - 130)
13C-1,2,3,7,8,9-HxCDD	EPA 1613B	63.9	(32 - 141)
13C-OCDF	EPA 1613B	51.1	(17 - 157)
13C-OCDD	EPA 1613B	48.5	(17 - 157)
13C-2,3,7,8-TCDD	EPA 1613B	83.2	(25 - 164)

Comments:
USEPA Analysis 1613B performed by Vista Analytical.

Calculation of Average Injection Rate

CURRENT REPORTING YEAR 2017

CURRENT REPORTING MONTH July

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	561,303	0	561,303
Since facility first injected			11,382,500
MI-163-1W-C011, Well #2-12			
Current Month	0	0	0
Since facility first injected			4,648,736
		Lifetime Combined	16,031,236

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 44

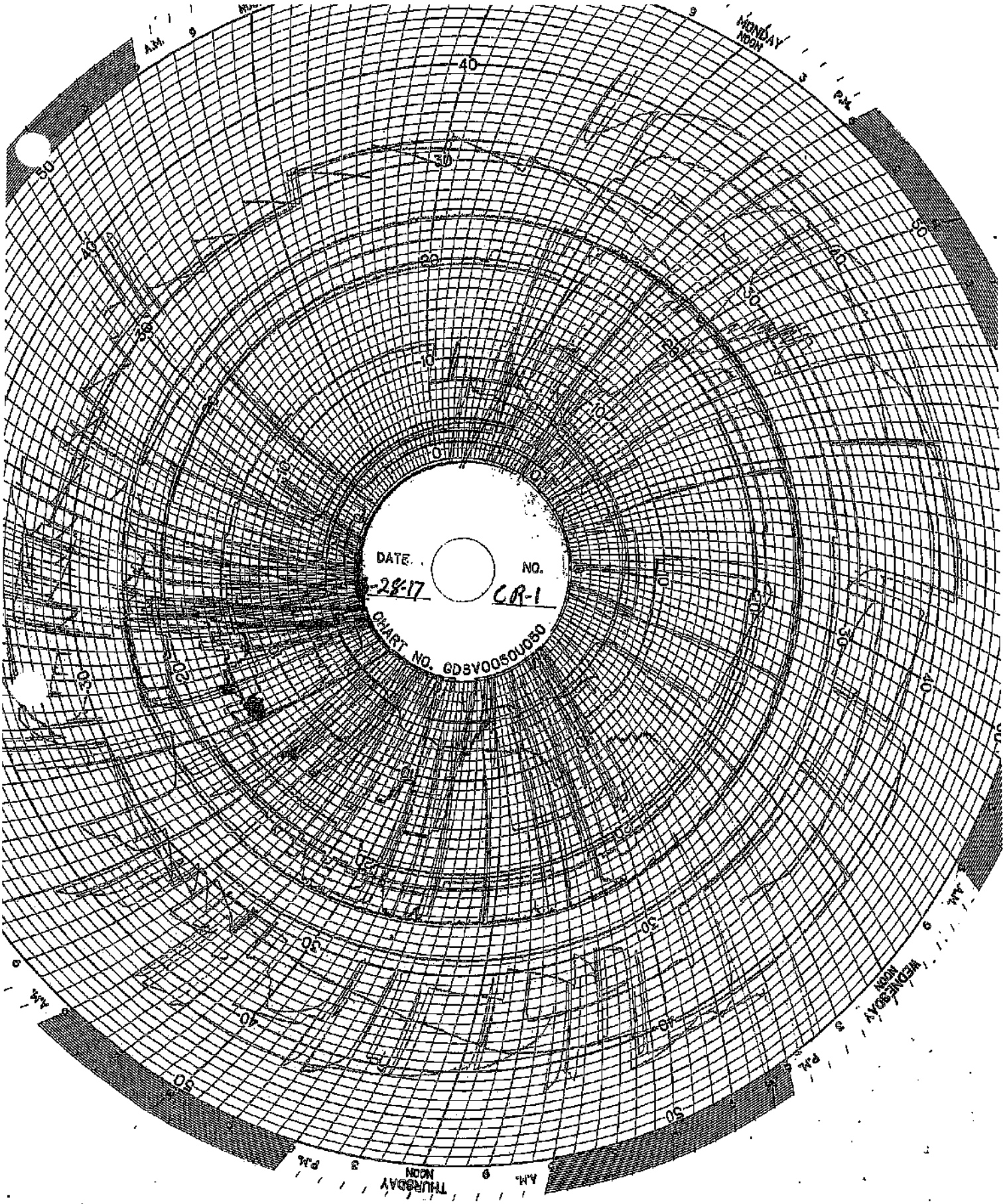
_____ lifetime number of months of injection × 43,830 minutes/month

= 1,928,520 minutes of injection

Lifetime combined injected volume 16,031,236 ÷ 1,928,520 minutes of injection

= 8.3 gpm average injection rate

WELL 1 DATA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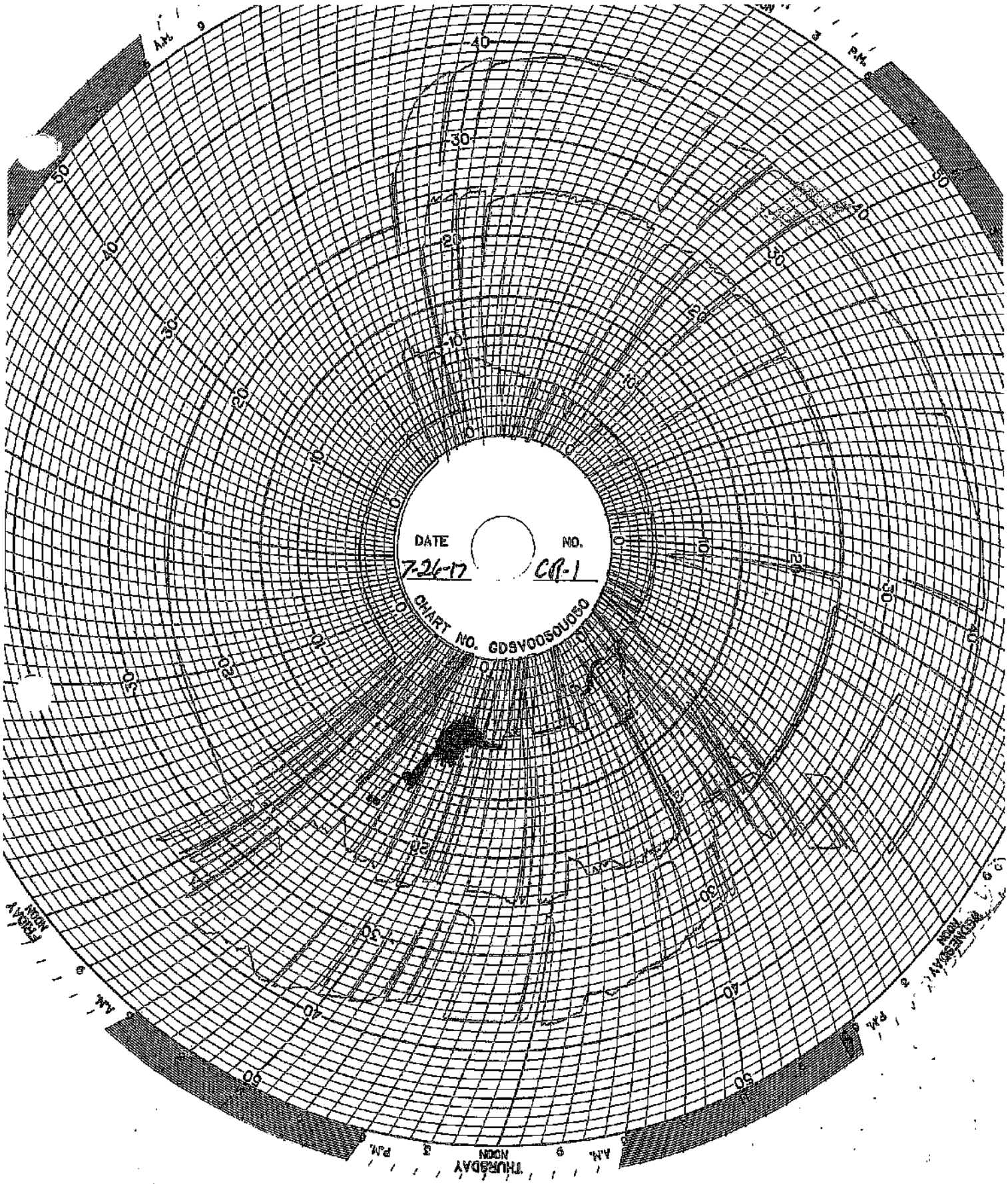
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WEDNESDAY
NOON

WELL 01 nthly 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)
7/1/2017	93.2	97.1	21.8	21.9	902.4	977.3	6.7	7.0	0.0	0.0	809.2	880.3
7/2/2017	91.8	753.2	21.3	22.5	900.0	1301.9	6.8	6.8	3.5	40.2	322.1	938.8
7/3/2017	103.2	752.4	22.4	22.6	940.2	1286.7	6.5	6.9	23.0	39.4	471.4	851.6
7/4/2017	267.1	731.0	21.7	22.7	900.0	1285.1	6.7	6.7	6.8	40.2	511.0	784.2
7/5/2017	31.6	750.0	21.7	23.4	900.0	1300.0	4.1	4.3	8.3	27.3	281.4	909.9
7/6/2017	104.0	751.0	21.6	23.2	898.9	1301.3	0.5	6.9	24.1	136.9	289.5	1015.2
7/7/2017	3.9	722.0	21.5	23.0	896.7	1300.0	0.3	0.6	33.6	164.7	271.1	1003.0
7/8/2017	105.2	109.2	21.2	21.8	900.0	1001.9	0.6	0.7	0.0	0.0	794.6	898.2
7/9/2017	107.4	118.3	20.8	21.4	900.0	1006.0	0.7	0.7	0.0	0.0	791.8	897.8
7/10/2017	14.4	754.5	20.4	21.6	900.0	1300.0	6.6	6.9	0.0	0.0	233.4	967.7
7/11/2017	134.8	752.0	20.6	21.1	899.4	1245.0	6.9	7.0	0.0	0.0	365.5	786.9
7/12/2017	313.9	752.4	20.7	21.0	956.6	1243.7	6.9	7.1	0.0	0.0	385.6	715.8
7/13/2017	101.5	752.0	18.8	21.0	900.0	1134.0	6.3	6.9	0.0	0.0	207.1	886.6
7/14/2017	-8.1	751.6	15.3	19.7	885.3	1301.0	0.3	6.9	8.1	113.7	304.0	994.9
7/15/2017	2.0	690.3	13.5	15.5	900.0	1262.4	0.3	0.3	1.4	121.6	504.8	973.7
7/16/2017	56.3	70.5	9.0	13.6	884.2	1005.5	0.3	0.3	0.0	0.0	827.9	938.9
7/17/2017	-0.5	716.6	9.0	30.2	0.4	1178.9	0.3	0.3	2.6	32.2	-70.1	1178.8
7/18/2017	-0.6	653.2	29.5	30.2	913.9	1165.3	2.2	2.3	15.7	30.7	499.2	948.9
7/19/2017	-0.5	509.5	29.5	29.8	908.2	1093.3	2.2	2.2	11.8	30.7	579.6	919.9
7/20/2017	-0.6	703.1	29.5	29.8	907.3	1259.5	1.2	2.2	12.3	60.9	469.2	911.7
7/21/2017	44.8	752.3	25.7	29.7	665.9	1303.3	0.7	1.2	41.9	64.9	149.9	883.3
7/22/2017	72.4	749.2	25.6	26.1	692.6	1115.8	1.2	6.3	5.8	56.3	283.0	723.2
7/23/2017	125.9	129.8	25.5	26.0	678.5	692.6	6.2	6.3	0.0	0.0	552.2	562.9
7/24/2017	102.6	752.4	25.6	25.9	678.5	1232.4	6.3	6.8	28.1	56.3	257.0	783.2
7/25/2017	164.0	752.1	25.4	25.8	949.9	1263.0	6.8	7.0	23.7	27.3	271.6	785.9
7/26/2017	105.6	752.2	13.0	28.1	617.4	1074.1	6.5	7.0	15.8	32.0	133.9	726.9
7/27/2017	-0.8	752.8	15.1	15.4	757.7	1136.4	1.1	6.8	20.2	37.2	47.7	794.3
7/28/2017	-10.0	755.0	15.2	15.3	749.7	1197.3	0.3	1.8	21.1	95.8	289.2	830.4
7/29/2017	109.1	113.7	15.1	15.4	713.4	749.7	1.8	1.9	0.0	0.0	604.2	636.1
7/30/2017	92.4	751.0	15.1	15.4	597.5	1134.0	1.8	6.2	6.2	49.8	248.3	693.8
7/31/2017	106.6	752.8	15.1	15.3	809.0	1182.1	6.2	6.2	27.1	40.8	364.5	721.3

WELL 2 DATA

Well 02 nthly 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)
7/1/2017	0.0	0.0	23.0	23.6	328.6	333.2	6.7	7.0	0.0	0.0	328.6	333.2
7/2/2017	0.0	0.0	23.0	23.7	325.1	329.2	6.8	6.8	0.0	0.0	325.1	329.2
7/3/2017	0.0	0.0	22.9	23.5	323.3	325.8	6.5	6.9	0.0	0.0	323.3	325.8
7/4/2017	0.0	0.0	22.9	23.5	320.2	324.0	6.7	6.7	0.0	0.0	320.2	324.0
7/5/2017	0.0	0.0	22.9	23.6	317.6	320.9	4.1	4.3	0.0	0.0	317.6	320.9
7/6/2017	0.0	0.0	22.9	23.4	316.0	318.2	0.5	6.9	0.0	0.0	316.0	318.2
7/7/2017	0.0	0.0	22.9	23.6	314.9	317.3	0.3	0.6	0.0	0.0	314.9	317.3
7/8/2017	0.0	0.0	22.9	23.5	311.3	315.8	0.6	0.7	0.0	0.0	311.3	315.8
7/9/2017	0.0	0.0	22.8	23.5	308.0	311.9	0.7	0.7	0.0	0.0	308.0	311.9
7/10/2017	0.0	0.0	23.1	23.2	306.3	308.7	6.6	6.9	0.0	0.0	306.3	308.7
7/11/2017	0.0	0.0	23.0	23.5	305.7	307.2	6.9	7.0	0.0	0.0	305.7	307.2
7/12/2017	0.0	0.0	23.1	23.3	303.9	306.4	6.9	7.1	0.0	0.0	303.9	306.4
7/13/2017	0.0	0.0	22.9	23.6	301.6	304.6	6.3	6.9	0.0	0.0	301.6	304.6
7/14/2017	0.0	751.6	22.3	23.3	300.0	409.8	0.3	6.9	0.1	10.3	300.0	409.8
7/15/2017	0.0	750.8	22.6	22.7	395.1	894.6	0.3	0.3	2.4	0.0	395.1	894.6
7/16/2017	0.0	0.0	22.3	23.1	411.4	443.4	0.3	0.3	0.1	0.0	411.4	443.4
7/17/2017	0.0	0.0	16.8	30.2	264.7	1110.7	0.3	0.3	0.3	0.0	264.7	1110.7
7/18/2017	0.0	0.0	24.8	30.5	438.7	1022.1	2.2	2.3	0.3	0.0	438.7	1022.1
7/19/2017	0.0	0.0	20.6	26.4	211.5	1014.2	2.2	2.2	0.8	0.0	211.5	1014.2
7/20/2017	0.0	0.0	18.6	20.7	490.9	923.4	1.2	2.2	1.6	0.0	490.9	923.4
7/21/2017	0.0	0.0	18.9	19.4	220.6	491.2	0.7	1.2	4.3	0.0	220.6	491.2
7/22/2017	0.0	0.0	18.6	19.4	144.8	220.9	1.2	6.3	0.5	0.0	144.8	220.9
7/23/2017	0.0	0.0	17.2	19.4	133.8	414.8	6.2	6.3	0.5	0.0	133.8	413.2
7/24/2017	0.0	0.0	17.5	17.7	202.8	359.6	6.3	6.8	0.0	0.0	202.8	359.6
7/25/2017	0.0	0.0	16.0	17.6	174.8	416.8	6.8	7.0	0.0	0.0	174.8	416.8
7/26/2017	0.0	0.0	16.0	16.9	190.4	286.7	6.5	7.0	0.0	0.0	190.4	286.7
7/27/2017	0.0	0.0	15.8	16.7	174.9	227.8	1.1	6.8	0.0	0.0	174.9	227.8
7/28/2017	0.0	0.0	14.9	16.3	174.9	426.4	0.3	1.8	0.0	0.0	174.9	426.4
7/29/2017	0.0	0.0	14.5	15.3	196.9	287.5	1.8	1.9	0.0	0.0	196.9	287.5
7/30/2017	0.0	0.0	13.8	15.4	159.2	321.5	1.8	6.2	0.0	0.0	159.2	321.5
7/31/2017	0.0	0.0	13.9	14.7	203.7	293.0	6.2	6.2	0.0	0.0	203.7	293.0

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

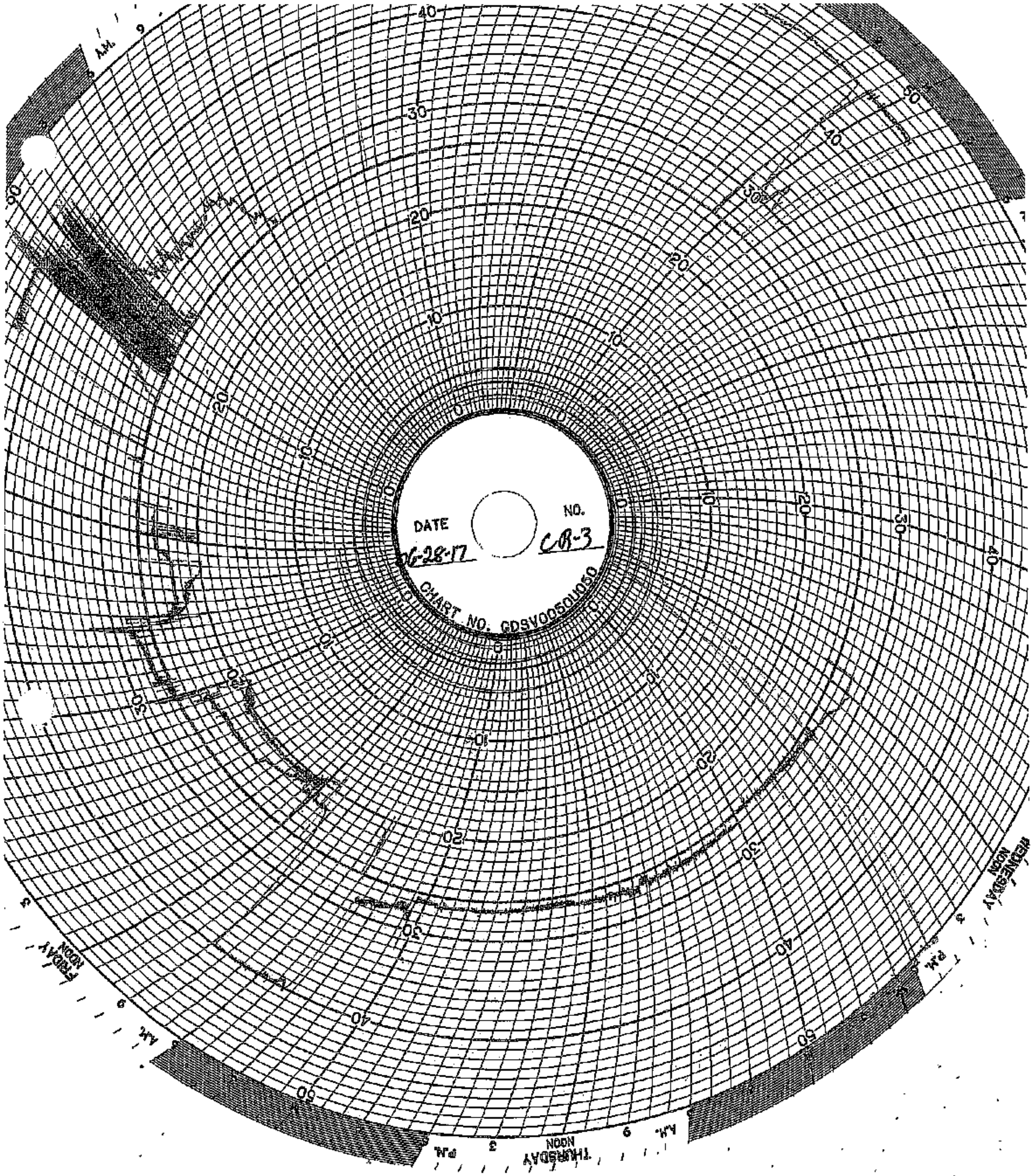
Red Pen – Well 1 Monthly Volume (chart value x 100,000)

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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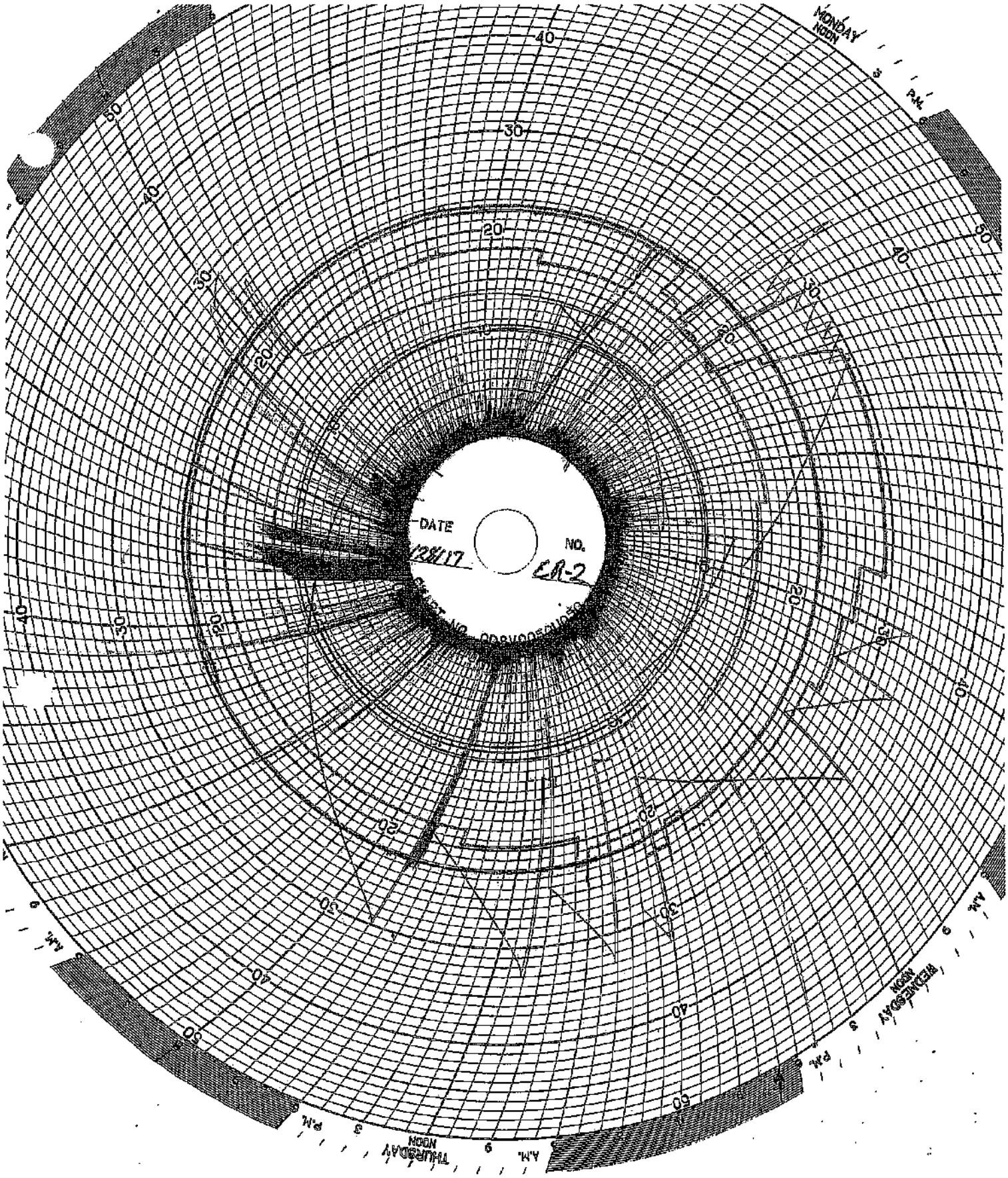
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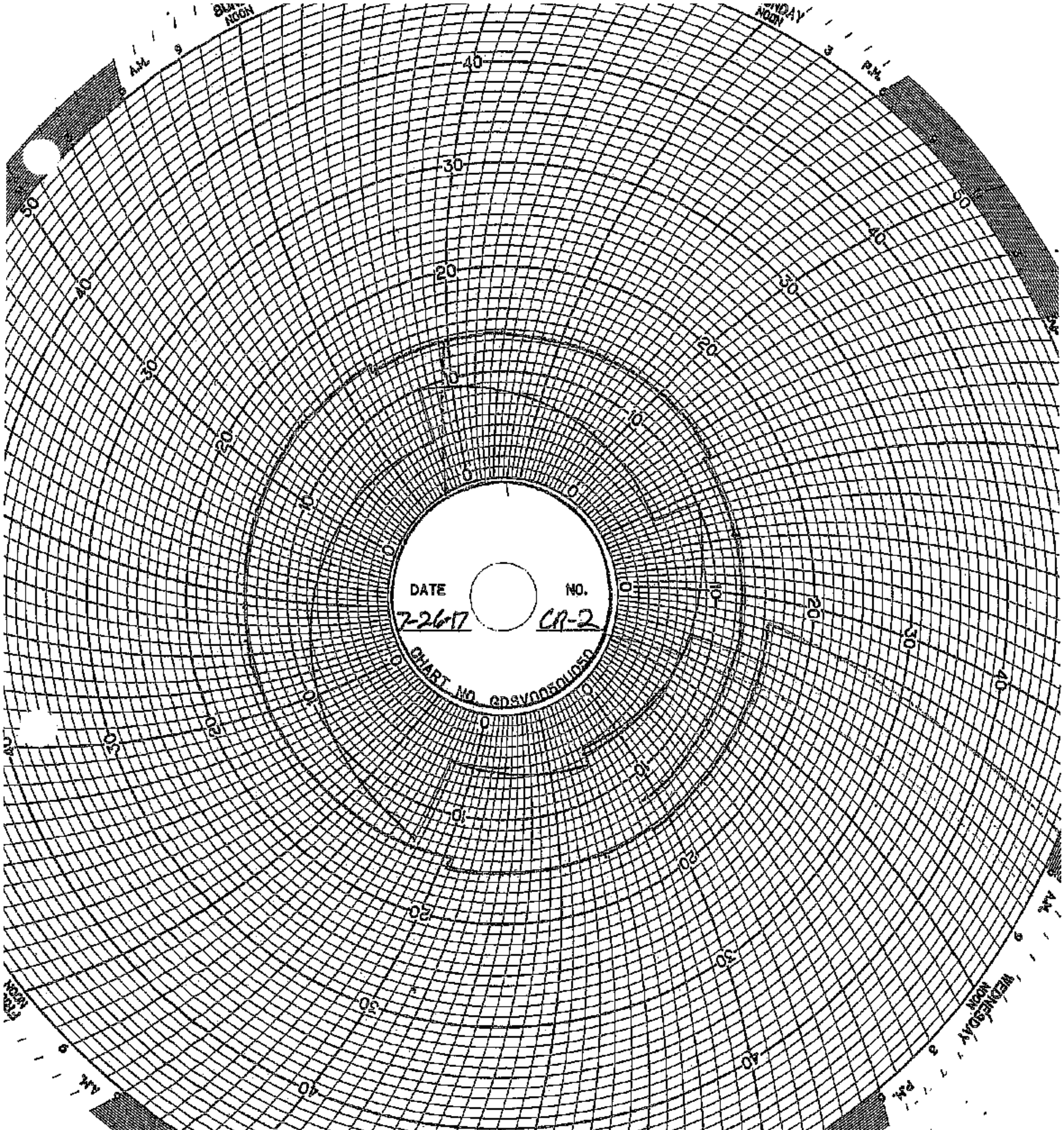
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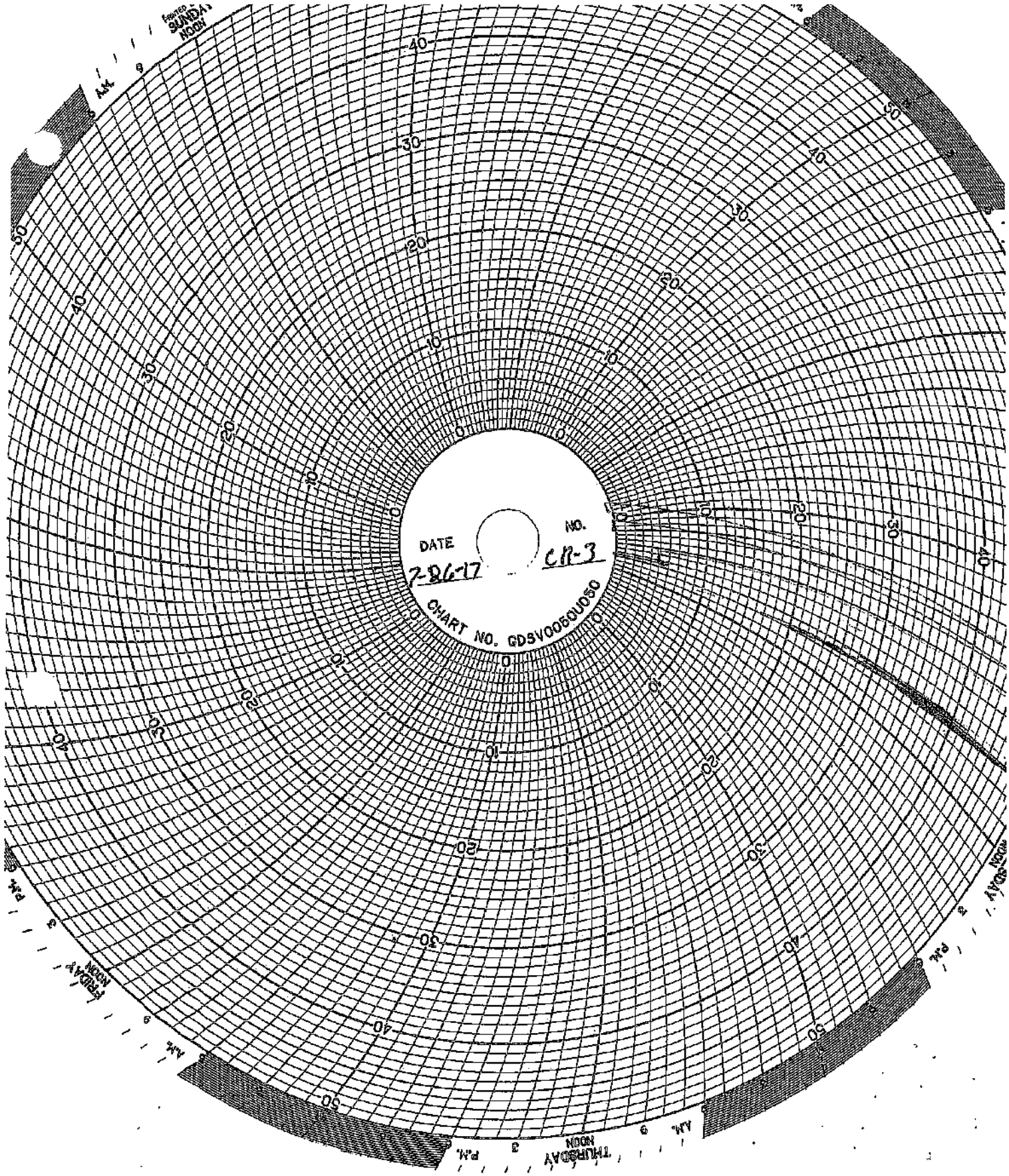
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THURSDAY NOON
FRIDAY NOON
A.M.
P.M.

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)

MAINTENANCE LOG

UIC Monthly Maintenance Log

7/14/2017	Well 2	Replaced the Tee block on the wellhead
7/14/2017	Well 1	Added 36 gallons of diesel fuel to annulus tank
7/14/2017	Well 2	Added 40 gallons of diesel fuel to annulus tank
7/25/2017	Well 1	Replaced the steel annulus supply line between pump house and well with high perssure hose

CORROSION MONITORING

CORROSION MONITORING COUPONS VISUAL DESCRIPTION

July 5, 2017

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. There is still only minimal affect to this coupon.

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.

Stainless Steel Coupon

The coupon had experienced substantial corrosion since last month. The coupon is seriously pitted and corroded. Continuous affect takes place with this coupon.

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	9.288 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	

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) 885-3535
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/kml

GHESQUIERE PLASTIC TESTING, INC.

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

20460 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
26470 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

st

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.**

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION [illegible]	
Date 8:10 pm	07 / 02 / 17
Receiving ID#	I07021701
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	AW

COPY

LAB INFORMATION [illegible] Waste shipments [illegible]		Oilfield Brines Only [illegible]	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.97
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	84°F		
Conductivity	18.6mS		
% Solids	1.9		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

Revision 5.0
7/1/13

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

COPY

RECEIVING INFORMATION	
Date 12:46	07 /03 / 17
Receiving ID#	I070317 01
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	AW

LAB INFORMATION (All Waste Shipments)			
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	6.9	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.87
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	85°F		
Conductivity	37.2mS		
% Solids	1.8		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 11:06 am	07/03/17
Receiving ID#	I0703170Z
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	J.H.
Sampled by	MB

COPY

LAB INFORMATION (Waste Stream Profile)			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	6.5	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.03	TDS	227.
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	74°F		
Conductivity	44.8 mS		
% Solids	2.2		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

COPY

RECEIVING INFORMATION	
Date 11:25 pm	07/ 03/ 17
Receiving ID#	I07031703
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H
Sampled by	AW

LAB INFORMATION All Waste Shipments		[illegible]	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.7	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	3.42
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	88°F		
Conductivity	64.2 mS		
% Solids	3.4		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 12:00am	07 / 04 / 17
Receiving ID#	I07041701
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H
Sampled by	AW

COPY

LAB INFORMATION All Waste Streams		Oilfield Brines Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	6.7	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	2.87
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	84°F		
Conductivity	57.2 ms		
~~% Solids~~	2.8		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	J. [signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 17:40AM	07/06/17
Receiving ID#	E070617C1
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	T E

COPY

LAB INFORMATION			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	0.5	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.10	TDS	11.72
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	88° F		
Conductivity	231.8mS		
% Solids	11.7		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

Revision 5.0
7/1/13

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 12:11 pm	07/06/17
Receiving ID#	E070617072
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	MB

COPY

LAB INFORMATION (For Laboratory Use Only)			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.9	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.06	TDS	0.67
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	72°F		
Conductivity	>400.6mS		
% Solids	0.6		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	01/07/17
Receiving ID#	I0701 1701
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H
Sampled by	AW

COPY

LAB INFORMATION			
Compatible? (RT#)	Yes ✓ No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	0.3	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.67	TDS	12.87,
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	72°F		
Conductivity	255.0 mS		
% Solids	12.8		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

Revision 5.0
7/1/13

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	07 / 07 / 17
Receiving ID#	I0707170l
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	J.T.)
Sampled by	AW

COPY

LAB INFORMATION / WASTE STREAMS		Other Metals / Oil	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	0.3	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.07	TDS	13.09
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	72F		
Conductivity	257.9 mS		
% Solids	13.0		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 9:30	07/07/17
Receiving ID#	I07071703
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	AW

COPY

LAB INFORMATION		Oilfield Brines Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	0.6	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.03	TDS	3.57
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	72°F		
Conductivity	71.0mS		
% Solids	3.5		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION [illegible]	
Date 4:50am	07/ 10/ 17
Receiving ID#	J07101701
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	AW

COPY

LAB INFORMATION [illegible]		[illegible] Oilfield Brines Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.6	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	2.07
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	83°F		
Conductivity	39.4 mS		
% Solids	2.0		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 2100	08 / 10 / 17
Receiving ID#	T08 101702
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	AW

COPY

LAB INFORMATION All Waste Shipments		Oilfield Brines Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.9	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	2.12
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	86°F		
Conductivity	41.3 mS		
% Solids	2.1		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 12:45 am	07 / 11 / 17
Receiving ID#	1071170L
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.T.
Sampled by	AW

COPY

LAB INFORMATION (Waste Stream)		LAB INFORMATION (Other Parameters)	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	7.0	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	2.12
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	89°F		
Conductivity	42.5mS		
% Solids	2.1		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 12:30	07/12/17
Receiving ID#	T0711 1707
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	J.H.
Sampled by	AW

COPY

FINGERPRINTING ANALYSIS		ANALYSIS CONT.	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	7.0	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.82
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	93°F		
Conductivity	36.4 mS		
% Solids	1.8		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC

RECEIVING & APPROVAL FORM

COPY

RECEIVING INFORMATION	
Date 12:50am	07 / 12 / 17
Receiving ID#	I071117 03
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	AW

LAB INFORMATION / All Waste Streams		Other Tests	
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.9	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.12
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	93°F		
Conductivity	213.5		
% Solids	1.1		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 12:50 am	07/12/17
Receiving ID#	20712170 1
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	AV

COPY

LAB INFORMATION		Analytical Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	6.9	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.82
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	91°F		
Conductivity	36.8 mS		
% Solids	1.8		
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 6:23p	7 / 12 / 17
Receiving ID#	#07121702
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	JKF

COPY

LAB INFORMATION (Filled in by Lab)			
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	7.1	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.03	TDS	2.09
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	78°F		
Conductivity	39.3 mS		
% Solids	2.0		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 12:01 Pm	7 / 13 / 17
Receiving ID#	E0713170 1
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	A.M.

COPY

LAB INFORMATION (Please Circle)		Oil and Gas	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	6.9	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.87
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	82°F		
Conductivity	35.9 mS		
% Solids	1.8		
Turbidity	Yes No		
Color (visual)			
TSS (%)	40.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

COPY

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 3:06pm	07/13 / 17
Receiving ID#	I0713170Z
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H
Sampled by	MB

LAB INFORMATION All Waste Shipments		[illegible]	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.3	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.82
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	74°F		
Conductivity	36.5mS		
% Solids	1.8		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date S:00	07/14/17
Receiving ID#	I0714I701
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	J.H.
Sampled by	AW

COPY

LAB INFORMATION [illegible] All Waste Shipments		Oilfield Brines Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	0.3	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.13	TDS	32.67
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	74°F		
Conductivity	> 4000 mS		
% Solids	32.6		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 9:23 am	07/18/17
Receiving ID#	170718701
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	JH
Sampled by	MB

COPY

LAB INFORMATION			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	2.3	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.01	TDS	<0.1
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	69°F		
Conductivity	2.8 mS		
% Solids	<0.1		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 6:50PM	07/18/17
Receiving ID#	I07181702
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	T.E

COPY

LABORATORY ANALYSIS			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	2.2	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.01	TDS	<0.1%
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	63°F		
Conductivity	<0.1 mS		
% Solids	(0.)		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	10:40 am 07/19/17
Receiving ID#	I071917 01
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	J.H.
Sampled by	MP

COPY

LAB INFORMATION			
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	2.2	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.01	TDS	< 0.1 %
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil In Sample	Yes No		
Temperature	65°F		
Conductivity	< 0.1 mS		
% Solids	< 0.1		
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	10:00PM 07/20/17
Receiving ID#	EC072017-01
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	TE

COPY

LABORATORY ANALYSIS			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	1.2	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.08	TDS	7.0
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	69°F		
Conductivity	103.1 mS		
% Solids	7.0		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 12:10AM	07/21/17
Receiving ID#	20721701
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	TE

COPY

FINGERPRINT ANALYSIS		Other Elements	
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	1.1	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.59	TDS	7.09
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	68°F		
Conductivity	102.4 mS		
% Solids	7.0		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 9:49am	07/21/17
Receiving ID#	T07211702
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	NM3

COPY

LABORATORY ANALYSIS			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	1.2	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.05	TDS	0.1
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	75°F		
Conductivity	97.0 mS		
% Solids	0.1		
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 4:50	07/21/17
Receiving ID#	20721703
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	J.H.
Sampled by	AW

COPY

LABORATORY ANALYSIS			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	6.1	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.05	TDS	6.1 %
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	72°F		
Conductivity	163.8 mS		
% Solids	6.1		
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 8:30 PM	07/21/17
Receiving ID#	E072117C4
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H
Sampled by	TE

COPY

LAB INFORMATION (For Water Samples)			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	0.7	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.06	TDS	8.72
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	67°F		
Conductivity	143.6mS		
% Solids	8.7		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

COPY

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 4am [illegible]	07 / 22 / 17
Receiving ID#	I07221701
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	AW

LAB INFORMATION			
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.3	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	4.27
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	67°F		
Conductivity	30.5mS		
% Solids	4.2		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 8:10 pm	07 / 23 / 17
Receiving ID#	I0723170I
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	JH.
Sampled by	AW

COPY

LABORATORY ANALYSIS (For Water Shipments)			
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.2	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	3.89
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	67°F		
Conductivity	29.7 mS		
% Solids	3.8		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 4am PM am	07 / 28 / 17
Receiving ID#	I0722 1701
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	J.H.
Sampled by	AW

COPY

FINGERPRINT ANALYSIS			
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	6.3	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.052	TDS	4.27
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	67°F		
Conductivity	30.5mS		
% Solids	4.2		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION [illegible]	
Date 7:30am	07 / 24 / 17
Receiving ID#	I072417 02
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	AW

COPY

[illegible]			
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	3.97
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	67°F		
Conductivity	30.0 mS		
% Solids	3.9		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

COPY

RECEIVING INFORMATION [illegible]	
Date 8:15 pm	07 / 24 / 17
Receiving ID#	I07241703
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H
Sampled by	AW

LAB INFORMATION [illegible] All waste shipments [illegible]			
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	4.37
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	66°F		
Conductivity	29.7mS		
% Solids	4.3		
Turbidity	Yes No	✓	
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

COPY

RECEIVING INFORMATION	
Date 12:22 Am	07/25 /17
Receiving ID#	I0725170l
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	A.W.

LAB INFORMATION All waste streams			
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	7.0	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	4.97
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	70		
Conductivity	3.34 mS		
% Solids	4.9		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 14:15 pm	07/25/17
Receiving ID#	E072517022
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	MB

COPY

LABORATORY ANALYSIS			
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.9	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	4.27
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	67°F		
Conductivity	29.9mS		
% Solids	4.2		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 11:00pm	07 / 25 / 17
Receiving ID#	I 07 25 17 03
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	AW

COPY

LAB INFORMATION (All waste shipments)		Oil field Brines only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	2.0	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	4.5%
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	67°F		
Conductivity	31.3 mS		
% Solids	4.5		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 12:00pm	07 / 26 / 17
Receiving ID#	I07261701
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.M.
Sampled by	AW

COPY

LAB INFORMATION Analysis/Comments		Field Data Only	
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	2.0	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	4.47
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	68°F		
Conductivity	31.4 mS		
% Solids	4.4		
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 1:30pm	07/26/17
Receiving ID#	20726705Z
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	J.H.
Sampled by	MB

COPY

LAB INFORMATION (Lab Use Only)		OIL & FUELS ONLY	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	6.3	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	5.9
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	69°F		
Conductivity	30.6mS		
% Solids	5.4		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 8:30pm	07/27/17
Receiving ID#	I072711OR
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	J.H.
Sampled by	AW

COPY

LAB INFORMATION (Waste Streams)		(Oil and Brine Only)	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	1.1	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.06	TDS	5.12
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	70°F		
Conductivity	72.3 mS		
% Solids	5.1		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 12:05 Am	07 / 28 / 17
Receiving ID#	I07281701
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	AW

COPY

LAB INFORMATION All Waste Shipments		Oilfield Brines Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	1.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.04	TDS	9.07
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	71°F		
Conductivity	32.7 ms		
% Solids	4.0		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

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FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 7:50am	07/28/17
Receiving ID#	J07281702
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	AW

COPY

LAB INFORMATION All Waste Shipments		Oilfield Brines Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	0.3	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.12	TDS	15.37
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	71°F		
Conductivity	>400.0mS		
% Solids	15.3		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 8.30pm	07/30/17
Receiving ID#	T07301701
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	JH
Sampled by	AW

COPY

LAB INFORMATION All Waste Shipments		Oilfield Brines Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.2	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	4.3 %
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	70°F		
Conductivity	34.3 mS		
% Solids	4.3		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

WASTE STREAMS
CHARACTERIZATIONS

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC
28470 Cabot Dr, Romulus, MI 48174. Telephone 734 946 1000. Fax 734 946 1002

Generator Waste Profile
Profile # 0164

[redacted]

WASTE INFORMATION

Name of Waste/Common Chemical Name:

Aluminum Sulfate

Process Generating Waste (Please be specific, incomplete information may delay the approval process): Left over chemical that was to be used for WWT plant prior to closure

USEPA / STATE WASTE IDENTIFICATION

1. This waste is considered to be: ☐ Non Hazardous Liquid Industrial Waste ☒ Hazardous Waste
2. Regulated by TSCA? ☐ Yes ☒ No (PCBs, etc.)
3. List ALL Applicable Waste Codes: D002

PHYSICAL CHARACTERISTICS OF WASTE

Color	Suspended Solids	Layers:	Specific Gravity:	accepted
☒ White/Clear ☐ Black/Brown ☐ Other	☒ 0-1 % ☐ 1-3 % ☐ 3-5 % ☐ > 5%	☐ Multi-Layered ☐ Bi-Layered ☒ Single Phase	☐ <0.8 ☐ 0.8 – 1.0 ☐ 1.0 – 1.2 ☒ 1.3 – 1.4 Exact / Other	070117

pH: ☐ NA ☒ ≤ 2 ☒ 2 – 4 ☐ 4 – 6 ☐ 6 – 8 ☐ 8 – 10 ☐ 10 – 12.5 ☐ ≥ 12.5

Liquid Flash Point: ☐ <73°F ☐ 73 – 100°F ☐ 101 – 140°F ☐ 141 – 200°F ☐ >200°F ☒ None ☒ Closed Cup ☐ Open Cup

VOC CONCENTRATION = 0 PPM (MUST BE COMPLETED)

TOTAL COMPOSITION OF WASTE = *MUST BE EQUAL TO OR GREATER THAN 100% (LIST EACH CONSTITUENT >/= 0.1%)*

CONSTITUENT	MAX	MIN	CONSTITUENT	MAX	MIN
Aluminum Sulfate	50	0 %			%
Water	100	50 %			%
		%			%

Metals: Indicate if this waste contains any of the following metals. If Generator knowledge provide backup
☒ Lab Analysis ☒ Generator Knowledge ☐ TCLP ☐ TOTAL

	Not Present	Concentration		Not Present	Concentration
PCB	☒	____ ppm	Aromatic Amine	☒	____ ppm
Dioxins	☒	____ ppm	Pesticides	☒	____ ppm
Cyanides Reactive	☒	____ ppm	Rodenticides	☒	____ ppm
Cyanides Total	☒	____ ppm	Fungicides	☒	____ ppm
Sulfides Reactive	☒	____ ppm			
Sulfides Total	☒	____ ppm			

Arsenic (As)	D004	☒ < 5 ppm	____ ppm		
Barium (Ba)	D005	☒ <100 ppm	____ ppm		
Cadmium (Cd)	D006	☒ < 1 ppm	____ ppm		
Chromium (Cr)	D007	☒ < 5 ppm	____ ppm		
Lead (Pb)	D008	☒ < 5 ppm	____ ppm		
Mercury (Hg)	D009	☒ < 0.2 ppm	____ ppm		
Selenium (Se)	D010	☒ < 1 ppm	____ ppm		
Silver (Ag)	D011	☒ < 5 ppm	____ ppm		

TCLP Organics D012 – D043 above regulatory limits: Present ☐ Not Present ☒

IS WASTE ANY OF THE FOLLOWING? *At Least One Box Must Be Checked.*
☐ Radioactive ☐ Water Reactive ☐ Oxidizer ☐ Shock Sensitive ☐ Reactive (other) ☐ DOT Explosives
☐ NIOSH Human-Positive Carcinogens ☐ NESHAP Wastes (Benzene, etc.) ☐ Biological ☒ None Apply

SHIPPING INFORMATION

1. Is this a DOT Hazardous Material (49CFR 172.101 & 173 Subpart D)? ☐ Yes ☐ No
2. Reportable Quantity (RQ) in pounds _____
3. DOT Shipping Name UN3264,RQ,Waste Corrosive Liquid, Noorganic, N.O.S. Al. Sulfate Hazard Class _____ UN/NA _____
PG _____ ERG _____ Hazardous Constituents for "n.o.s." _____
4. Method of Shipment: ☐ Bulk Tanker ☒ Vac truck ☐ Rail Car ☐ Drums ☐ Totes
5. Number of Units to Ship Now: 1 6. Anticipated Volume / Units per Year: 1000 – 2000 gal _____ or ☒ One Time
7. Special Handling Requirements including PPE: _____

CERTIFICATION STATEMENT

I hereby represent and warrant that I have personally examined and am familiar with the information contained and submitted in this 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 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 information misleading. I understand that others may rely on this representation and warranty in the hauling and processing of the waste material described herein. If this box is checked ☐, I request Environmental Geo-Technologies not to correct any inconsistencies. Any corrections Environmental Geo-Technologies makes will be consistent with the results of the sample characterization and/or regulatory testing.

[redacted]

GENERATOR'S CHAIN OF CUSTODY RECORD INSTRUCTIONS:

Please collect a representative 1-quart sample of the waste described in the above referenced GENERATORS WASTE PROFILE REPORT using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods cited in 40 C.F.R 261 Appendix 1. Fill in the sampling information in the spaces provided below. If you have problems obtaining a representative sample of your waste, please contact your Environmental Geo-Technologies representative.

[redacted]

5. CHAIN OF CUSTODY. *Each person who handles the sample must sign below when the sample passes from one to another.*

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

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7/1/13

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	6/26/17
Receiving ID#	Aluminum Sulfate
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval	[redacted]
Generator	
Transporter	
Time In	
Time out	
Received by	S.H.
Sampled by	Client

Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?	N/A	Calcium	
TOC (ppm)(CC Waste Only)?	N/A	Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	2.4	Sodium Chloride	
Cyanides? (mg/L)	<30	Bicarbonate	
Sulfides? (ppm)	<200	Carbonate	
Specific Gravity	1.32	TDS	
Physical Description	Liquid	Resistivity	
Stream Consistency	(Yes) No	Sulfate	
Oil in Sample	Yes (No)		
Temperature	74°F		
Conductivity	28.2 mS		
% Solids	39.9		
Turbidity	Yes (No)		
Color (visual)	Colorless		
TSS (%)	<0.1		
Radiation Screen (as needed)	Negative		
Lab Signature			

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC
28470 Citrin Dr, Romulus, MI 48174. Telephone 734 946 1000. Fax 734 946 1002

Generator Waste Profile
Profile # 01170

[redacted]

WASTE INFORMATION

Name of Waste/Common Chemical Name: Mother Liquor (ML) Purge Tank.

Process Generating Waste (Please be specific, Incomplete information may delay the approval process): Fermentation Yeast residual / Fermentation residual.

USEPA / STATE WASTE IDENTIFICATION

1. This waste is considered to be: [X] Non Hazardous Liquid Industrial Waste [X] Hazardous Waste
2. Regulated by TSCA? [ ] Yes [redacted] (PCBs, etc.)
3. List ALL Applicable Waste Codes [redacted]

PHYSICAL CHARACTERISTICS OF WASTE

Color:	Suspended Solids	Layers:	Specific Gravity:	
[ ] White/Clear [ ] Black/Brown [ ] Other TAN	[ ] 0-1 % [ ] 3-5 % [ ] 1-3 % [X] > 5%	[ ] Multi-Layered [ ] Bi-Layered [X] Single Phase	[ ] <0.8 [X] 1.0 – 1.2 [ ] 0.8 – 1.0 [ ] 1.3 – 1.4 Exact / Other 1.10	accepted 072517

pH: [ ] NA [ ] ≤ 2 [X] 2 – 4 [ ] 4 – 6 [ ] 6 – 8 [ ] 8 – 10 [ ] 10 – 12.5 [ ] ≥12.5

[redacted] [ ] <73°F [ ] 73 – 100°F [ ] 101 – 140°F [X] 141 – 200°F [X] >200°F [X] None [X] Closed Cup [ ] Open Cup

VOC CONCENTRATION - [redacted] PPM (MUST BE COMPLETED)

TOTAL COMPOSITION OF WASTE - *MUST BE EQUAL TO OR GREATER THAN 100% (LIST EACH CONSTITUENT >/= 0.1%)*

CONSTITUENT	MAX	MIN		CONSTITUENT	MAX	MIN	
[redacted]	[redacted]		%				%
[redacted] - Succinic Acid	[redacted]		%				%
			%				%
			%				%
			%				%
			%				

Metals: Indicate if this waste contains any of the following metals,. If Generator knowledge provide backup
☒ Lab Analysis ☒ Generator Knowledge ☐ TCLP ☐ TOTAL

	Not Present	Concentration		Not Present	Concentration
PCB	☐	____ppm	Aromatic Amine	☐	____ppm
Dioxins	☐	____ppm	Pesticides	☐	____ppm
Cyanides Reactive	☐	____ppm	Rodenticides	☐	____ppm
Cyanides Total	☐	____ppm	Fungicides	☐	____ppm
Sulfides Reactive	☐	____ppm			
Sulfides Total	☐	____ppm			

Arsenic (As)	D004	☐ < 5 ppm	____ ppm	
Barium (Ba)	D005	☐ <100 ppm	____ ppm	
Cadmium (Cd)	D006	☐ < 1 ppm	____ ppm	
Chromium (Cr)	D007	☐ < 5 ppm	____ ppm	
Lead (Pb)	D008	☐ < 5 ppm	____ ppm	
Mercury (Hg)	D009	☐ <0.2 ppm	____ ppm	
Selenium (Se)	D010	☐ < 1 ppm	____ ppm	
Silver (Ag)	D011	☐ < 5 ppm	____ ppm	

TCLP Organics D012 – D043 above regulatory limits: Present ☐ Not Present ☒

IS WASTE ANY OF THE FOLLOWING? *At Least One Box Must Be Checked.*
☐ Radioactive ☐ Water Reactive ☐ Oxidizer ☐ Shock Sensitive ☐ Reactive (other) ☐ DOT Explosives
☐ NIOSH Human-Positive Carcinogens ☐ NESHAP Wastes (Benzene, etc.) ☐ Biological ☒ None Apply

SHIPPING INFORMATION

1. Is this a DOT Hazardous Material (49CFR 172.101 & 173 Subpart D)? ☐ Yes [redacted]
2. Reportable Quantity (RQ) in pounds _____ RQ UN3264, Corrosive Liquid, Acidic, Inorganic, N.O.S. (Succinic Acid), 8, II
3. DOT Shipping Name [redacted] Hazard Class [redacted] UN [redacted]
PG [redacted] ERG [redacted] Hazardous Constituents for "n.o.s." [redacted]
4. Method of Shipment: ☒ Bulk Tanker [redacted] ☐ Rail Car ☐ Drums ☐ Totes
5. Number of Units to Ship Now: _____ 6. Anticipated Volume / Units per Year [redacted] or ☐ One Time
6. Special Handling Requirements including PPE: _____

CERTIFICATION STATEMENT

I hereby represent and warrant that I have personally examined and am familiar with the information contained and submitted in this 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 information misleading. I understand that others may rely on this representation and warranty in the handling and processing of the waste material described herein. If this box is checked ☐, I request Environmental Geo-Technologies not to correct any inconsistencies. Any corrections Environmental Geo-Technologies makes will be consistent with these results

[redacted]

GENERATOR'S CHAIN OF CUSTODY RECORD INSTRUCTIONS: Please collect a representative 1-quart sample of this waste described in the above referenced Generators Waste Profile Report using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods cited in 40 CFR 261-Appendix 1. Fill in the sampling information in the spaces provided below. If you have problem [redacted] sample of your waste, please contact your Environmental Geo-Technologies

[redacted]

Each person who handles the sample must sign below when the sample passes from one to another.

Relinquished by: (Signature)			Received by: (Signature)	Date	Time
[redacted]					

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7/1/13

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

[redacted]

RECEIVING & APPROVAL FORM

Date	7/12/14 17
Receiving ID#	ML Purge TK
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
[redacted]	
Transporter	
Time In	
Time out	
Received by	PS
Sampled by	

Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?	N/A	Calcium	
TOC (ppm)(CC Waste Only)?	N/A	Total Iron	
Flash Point (°F)	>140°F	Magnesium	
pH (S.U.)	1.8	Sodium Chloride	
Cyanides? (mg/L)	<30	Bicarbonate	
Sulfides? (ppm)	<200	Carbonate	
Specific Gravity	1.10	TDS	
Physical Description	liquid	Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes (No)		
Temperature	ambient		
Conductivity	4.1		
% Solids	14%		
Turbidity	(Yes) No		
Color (visual)	Tan		
TSS (%)	6%		
Radiation Screen (as needed)	negative		
Lab Signature	[signature]		

[redacted]

Facility uses biotechnology to produce sustainable chemicals from sugar

[redacted] eader in renewable chemistry, announced today the opening of its [redacted] that was jointly built with [redacted]

[redacted] makes renewable chemicals from sugar instead of petroleum. The new plant uses innovative biotechnology and will produce biobased succinic acid from glucose sourced from southern Ontario agricultural supplier[redacted] the world's largest succinic acid production facility and will be globally competitive while making chemicals more sustainably.

[redacted] s part of the growing bio-industrial cluster [redacted] has received support from the Government of Canada and the Government of Ontario through the Ontario Ministry of Economic Development, Employment and Infrastructure's Strategic Jobs and Investment Fu[redacted] rateful for the support of BioIndustrial Innovation Canada and the [redacted]

[redacted] ancial partners include Export Development Canada, [redacted]

NOTE: Photos and digital materials are available on request

[redacted]

[redacted]

Quick Facts

[redacted] construction cost: approximately [redacted]

- Capacity: 30,000 tons/year of succinic acid
- World's largest succinic acid plant
- Disruptive technology is lower cost than oil-based production
- Markets: increasing demand for renewable building block chemicals in large global markets
- Applications: examples include: plastics, paints, textiles and coatings, artificial leather, food and flavours and personal care products
- Volumes specified in signed take-or-pay and sales agreements exceed annual production capacity
- Approximately 300 construction jobs and 60 full-time jobs were created by the project; many of the plant operators are graduates from Lambton College
- 100% reduction of Greenhouse Gas (GHG) emissions compared to the equivalent production process that uses petroleum.

Quotes

[redacted] "We're excited that our renewable chemicals made from sugars are making everyday applications around the world more sustainable. We believe our disruptive biotechnology is going to profitably deliver benefits for the environment, our customers, our shareholders and the Sarnia Lambton community."

Brad Duguid, Member of Provincial Parliament Scarborough-Centre, Minister of Economic Development, Employment and Infrastructure: "The opening of the BioAmber [redacted] facility is key to the development [redacted] delivering good jobs, significant exports, and diverse markets for Ontario farmers with the full support of the Government of Ontario. The production and development of sustainable chemicals by BioAmber, working from within the existing chemistry cluste[redacted] economic and environmental win for the community and the province."

[redacted]

SAFETY DATA SHEET

Version 4.7
Revision Date 02/04/2016
Print Date 07/13/2017

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Succinic acid

Product Number : 398055
Brand : Sigma-Aldrich

CAS-No. : 110-15-6

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Serious eye damage (Category 1), H318

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H318 Causes serious eye damage.

Precautionary statement(s)
P280 Wear protective gloves/ eye protection/ face protection.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/ physician.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms : Butanedioic acid

Formula	:	$C_4H_6O_4$
Molecular weight	:	118.09 g/mol
CAS-No.	:	110-15-6
EC-No.	:	203-740-4

Hazardous components

Component	Classification	Concentration
Succinic acid		
	Eye Dam. 1; H318	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Move out of dangerous area.Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: crystalline Colour: white
b)	Odour	odourless
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 184 - 186 °C (363 - 367 °F) - lit.
f)	Initial boiling point and boiling range	235 °C (455 °F) - lit.
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	1.564 g/cm3 at 15 °C (59 °F)
n)	Water solubility	83 g/l at 25 °C (77 °F) - soluble
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Bases, Oxidizing agents, Reducing agents

10.6 Hazardous decomposition products

Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 2,260 mg/kg

LC50 Inhalation - Rat - male and female - 4 h - > 1.284 mg/l
(OECD Test Guideline 403)

Dermal: No data available

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation - 4 h
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Risk of serious damage to eyes. - 24 h
(OECD Test Guideline 405)

Respiratory or skin sensitisation
Maximisation Test (GPMT) - Guinea pig
Result: Does not cause skin sensitisation.
(OECD Test Guideline 406)

Germ cell mutagenicity
Ames test
S. typhimurium
Result: negative

Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: WM4900000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	semi-static test LC50 - Danio rerio (zebra fish) - > 100 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	Immobilization EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	Growth inhibition EC50 - Pseudokirchneriella subcapitata (green algae) - > 100 mg/l - 72 h (OECD Test Guideline 201)
Toxicity to bacteria	Respiration inhibition EC50 - Sludge Treatment - > 300 mg/l - 3 h (OECD Test Guideline 209)

12.2 Persistence and degradability

Biodegradability: aerobic - Exposure time 28 d
Result: 96.55 % - Readily biodegradable

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components	CAS-No.	Revision Date
Succinic acid	110-15-6	

New Jersey Right To Know Components	CAS-No.	Revision Date
Succinic acid	110-15-6	

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Eye Dam.	Serious eye damage
H318	Causes serious eye damage.

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-6956

Version: 4.7 Revision Date: 02/04/2016 Print Date: 07/13/2017

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC
[illegible], MI 48174, Telephone 734 946 1000, Fax 734 946 1002

Generator Waste Profile

Profile # 0119O

[redacted]

WASTE INFORMATION

Name of Waste/Common Chemical Name: Wash water

Process Generating Waste (Please be specific, incomplete information may delay the approval process):

the waste is generated by cleaning and [illegible] stainless steel

The [illegible] Adjust The PH of the [illegible]

USEPA / STATE WASTE IDENTIFICATION

1. This waste is considered to be: ☐ Non Hazardous Liquid Industrial Waste ☒ Hazardous Waste
2. Regulated by TSCA? ☐ Yes ☒ No (PCBs, etc)
3. List ALL Applicable Waste Codes: D002

PHYSICAL CHARACTERISTICS OF WASTE

Color	Suspended Solids	Layers	Specific Gravity	
☐ White/Clear ☐ Black/Brown ☐ Other ____	☐ 0-1 % ☐ 3-5 % ☒ 1-3 % ☐ ≥ 5%	☐ Multi Layered ☐ Bi-Layered ☒ Single Phase	☐ < 0.8 ☒ 1.0 - 1.2 ☐ 0.8 - 1.0 ☐ 1.2 - 1.4 ☐ [illegible] Other ____	acceptable [illegible] 07.25.17

pH: ☐ NA ☐ ≤ 2 ☐ 2 - 4 ☐ 4 - 6 ☒ 6 - 8 ☐ 8 - 10 ☐ 10 - 12.5 ☐ ≥ 12.5

Liquid Flash Point: ☐ < 73°F ☐ 73 - 100°F ☐ 101 - 140°F ☐ 141 - 200°F ☐ > 200°F ☒ None ☐ Closed Cup ☐ Open Cup

VOC Concentration: [illegible] PPM (MUST BE COMPLETED)

TOTAL COMPOSITION OF WASTE - *MUST BE EQUAL TO OR GREATER THAN 100% (LIST EACH CONSTITUENT ≥ 0.1%)*

CONSTITUENT	MAX - MIN	CONSTITUENT	MAX - MIN
Water	70 - 60 %		- %
Ammonium Bifluoride	15 - 20 %		- %
Citric Acid Anhydrous	15 - 20 %		- %
	- %		- %
	- %		- %

Metals: Indicate if this waste contains any of the following metals. If Generator knowledge provide backup

☒ Lab Analysis ☒ Generator Knowledge ☐ TCLP ☒ TOTAL

	Not Present	Concentration		Not Present	Concentration
PCB	☒	____ ppm	Aromatic Amine	☒	____ ppm
Dioxins	☒	____ ppm	Pesticides	☒	____ ppm
Cyanides Reactive	☒	____ ppm	Rodenticides	☒	____ ppm
Cyanides Total	☒	____ ppm	Fungicides	☒	____ ppm
Sulfides Reactive	☒	____ ppm			
Sulfides Total	☒	____ ppm			

		Not Present		
Arsenic (As)	D004	☒	< 5 ppm	____ ppm
Barium (Ba)	D005	☒	<100 ppm	____ ppm
Cadmium (Cd)	D006	☒	< 1 ppm	____ ppm
Chromium (Cr)	D007	☐	< 5 ppm	[illegible] ppm
Lead (Pb)	D008	☒	< 5 ppm	____ ppm
Mercury (Hg)	D009	☒	<0.2 ppm	____ ppm
Selenium (Se)	D010	☒	< 1 ppm	____ ppm
Silver (Ag)	D011	☒	< 5 ppm	____ ppm

TCLP Organics D012 – D043 above regulatory limits: Present ☐ Not Present ☒

IS WASTE ANY OF THE FOLLOWING? *At Least One Box Must Be Checked.*

☐ Radioactive ☐ Water Reactive ☐ Oxidizer ☐ Shock Sensitive ☐ Reactive (Other) ☐ DOT Explosives
☐ NIOSH Human Positive Carcinogens ☐ NESHAP Wastes (Benzene, etc.) ☐ Biological ☒ None Apply

SHIPPING INFORMATION

1. Is this a DOT Hazardous Material (49CFR 172.101 & 173 Subpart D)? ☒ Yes ☐ No
2. Reportable Quantity (RQ) in pounds ________
3. DOT Shipping Name RQ, NA3082, Hazardous waste liquid, N.O.S. ________ Hazard Class 9 ________ UN/NA 3082

PG III ____ ERG 171 ____ Hazardous Constituents for "n.o.s." Chrome ________

4. Method of Shipment ☐ Bulk Tanker ☐ Van truck ☐ Rail Car ☒ Drums ☒ Totes [illegible]
5. Number of Units to Ship Now [illegible] 6. Anticipated Volume / Units per Year [illegible] or ☐ One Time
6. Special Handling Requirements including PPE ________

CERTIFICATION STATEMENT

I hereby represent and warrant that I have personally examined and am familiar with the information contained and submitted in this and all attached documents. Based on my inquiry and personal knowledge of those individuals responsible for submitting or obtaining the information, the information contained herein is true, accurate, and complete to the best of my knowledge and belief. Furthermore, no material facts have been omitted so as to make this information misleading. I understand that others may rely on this representation and warranty in the handling and processing of the waste material described herein. If this box is checked ☐, I request Environmental Geo-Technologies to correct any inconsistencies. Any corrections Environmental Geo-Technologies makes will be consistent with the results of the sample characterization and [redacted]

GENERATOR'S CHAIN OF CUSTODY RECORD INSTRUCTIONS: Please collect a representative 1-quart sample of the waste described in the above referenced Generator's Waste Profile Report using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods cited in 40 CFR 261 Appendix I. Fill in the sampling information in the spaces provided below. If you have problems obtaining a representative sample of your waste, please contact your Environmental Geo-Technologies representative.

[redacted]

Lakeland Laboratories, Inc.

8290 Pettysville Road
Pinckney, MI 48169

Phone: (734) 878-3400
FAX: (734) 878-3981

Certificate of Analysis

Date: July 20, 2017

[redacted]

Parameters	Result	LRL	Units	Method Reference	Analysis Date	Analyst
RIC Analysis						
Reactive Cyanide	ND	50	mg/Kg	SW846 9014	7/20/2017	EDW
Reactive Sulfide	ND	50	mg/Kg	SW846 9030	7/20/2017	EDW
Flashpoint	DNP	200	°F	SW846 1010	7/17/2017	EDW
pH	6.7	1-14		SW846 9045C	7/19/2017	LLW
TCLP Metals Analysis						
Arsenic	ND	0.5	mg/L	SW846 7060	7/20/2017	LLW
Barium	2.1	0.5	mg/L	SW846 7080	7/20/2017	LLW
Cadmium	ND	0.5	mg/L	SW846 7130	7/20/2017	LLW
Chromium	6.0	0.5	mg/L	SW846 7190	7/20/2017	LLW
Lead	ND	0.5	mg/L	SW846 7420	7/20/2017	LLW
Mercury	ND	0.1	mg/L	SW846 7471	7/20/2017	LLW
Selenium	ND	0.5	mg/L	SW846 7740	7/20/2017	LLW
Silver	ND	0.5	mg/L	SW846 7761	7/20/2017	LLW

Parameter- The analysis performed or name of the chemical analyzed.
Result- The reported concentration in the sample at or above reg level
LRL- Lower Reporting Level
Units- The unit which corresponds to the reported concentration
Method Reference- The method used to provide results.
Analysis Date- Date the analysis was performed
Analyst- Initials of the analyst performing the analysis
ND- Parameter not detected above the reported LRL

Reviewed By: Lorri White

Date: 7/20/2017

Lakeland Laboratories, Inc.

8290 Pettysville Road
Pinckney, MI 48169

Phone: (734) 878-3400
FAX: (734) 878-3981

Certificate of Analysis

Date: July 20, 2017

[redacted]

Parameters	Result	LRL	Units	Method Reference	Analysis Date	Analyst
RIC Analysis						
Reactive Cyanide	ND	50	mg/Kg	SW846 9014	7/20/2017	EDW
Reactive Sulfide	ND	50	mg/Kg	SW846 9030	7/20/2017	EDW
Flashpoint	DNF	200	°F	SW846 1010	7/17/2017	EDW
pH	6.7	1-14		SW846 9045C	7/19/2017	LLW
TCLP Metals Analysis						
Arsenic	ND	0.5	mg/L	SW846 7060	7/20/2017	LLW
Barium	2.1	0.5	mg/L	SW846 7081	7/20/2017	LLW
Cadmium	ND	0.5	mg/L	SW846 7130	7/20/2017	LLW
Chromium	6.0	0.5	mg/L	SW846 7190	7/20/2017	LLW
Lead	ND	0.5	mg/L	SW846 7420	7/20/2017	LLW
Mercury	ND	0.1	mg/L	SW846 7471	7/20/2017	LLW
Selenium	ND	0.5	mg/L	SW846 7740	7/20/2017	LLW
Silver	ND	0.5	mg/L	SW846 7761	7/20/2017	LLW

Parameter- The analysis performed or name of the chemical analyzed
Result- The reported concentration in the sample at or above the level
LRL- Lower Reporting Level
Units- The unit which corresponds to the reported concentration
Method Reference- The method used to provide results.
Analysis Date- Date the analysis was performed
Analyst- Initials of the analyst performing the analysis
ND- Parameter not detected above the reported LRL

Reviewed By: Lorri White

Date: 7/20/2017

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC
28470 Citrin Dr, Romulus, MI 48174. Telephone 734 946 1000. Fax 734 946 1002

Generator Waste Profile

Profile # 01192

[redacted]

BILL

Company Name: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Attention: _____ Phone: ( ) _____ Fax: ( ) _____

WASTE INFORMATION

Name of Waste/Common Chemical Name:

Recovered Waste Water

Process Generating Waste (Please be specific, incomplete information may delay the approval process):

Rinse Water from RMS by off "Recover" From Vehicle Rinses

USEPA / STATE WASTE IDENTIFICATION

1. This waste is considered to be: ☒ Non Hazardous Liquid Industrial Waste ☐ Hazardous Waste
2. Regulated by TSCA? ☐ Yes ☒ No (PCBs, etc.)
3. List ALL Applicable Waste Codes: 029L

PHYSICAL CHARACTERISTICS OF WASTE

Color:	Suspended Solids	Layers:	Specific Gravity:	
☐ White/Clear	☒ 0-1 % ☐ 3-5 %	☐ Multi-Layered	☐ <0.8 ☒ 1.0 – 1.2	acceptable
☐ Black/Brown	☐ 1-3 % ☐ > 5%	☐ Bi-Layered	☐ 0.8 – 1.0 ☐ 1.3 – 1.4	DP
☒ Other Yellow		☒ Single Phase	Exact / Other 1.02	073117

pH: ☐ NA ☐ ≤ 2 ☐ 2 – 4 ☐ 4 – 6 ☒ 6 – 8 ☒ 8 – 10 ☐ 10 – 12.5 ☐ ≥12.5

Liquid Flash Point: ☐ <73°F ☐ 73 – 100°F ☐ 101 – 140°F ☒ 141 – 200°F ☒ >200°F ☒ None ☒ Closed Cup ☐ Open Cup

VOC Concentration - 0 PPM (MUST BE COMPLETED)

TOTAL COMPOSITION OF WASTE - *MUST BE EQUAL TO OR GREATER THAN 100% (LIST EACH CONSTITUENT >/= 0.1%)*

CONSTITUENT	MAX	MIN		CONSTITUENT	MAX	MIN	
Water	100	95	%				%
Dust & Soap	5	1	%				%
			%				%
			%				%
			%				%

Metals: Indicate if this waste contains any of the following metals. If Generator knowledge-provide backup

[X] Lab Analysis [X] Generator Knowledge [ ] TCLP [ ] TOTAL

	Not Present	Concentration		Not Present	Concentration
PCB	[X]	____ ppm	Aromatic Amine	[X]	____ ppm
Dioxins	[X]	____ ppm	Pesticides	[X]	____ ppm
Cyanides Reactive	[X]	____ ppm	Rodenticides	[X]	____ ppm
Cyanides Total	[X]	____ ppm	Fungicides	[X]	____ ppm
Sulfides Reactive	[X]	____ ppm			
Sulfides Total	[X]	____ ppm			

Metal	Code		Limit		
Arsenic (As)	D004	[X]	< 5	ppm	____ ppm
Barium (Ba)	D005	[X]	<100	ppm	____ ppm
Cadmium (Cd)	D006	[X]	< 1	ppm	____ ppm
Chromium (Cr)	D007	[X]	< 5	ppm	____ ppm
Lead (Pb)	D008	[X]	< 5	ppm	____ ppm
Mercury (Hg)	D009	[X]	< 0.2	ppm	____ ppm
Selenium (Se)	D010	[X]	< 1	ppm	____ ppm
Silver (Ag)	D011	[X]	< 5	ppm	____ ppm

TCLP Organics D012 -- D043 above regulatory limits: Present [ ] Not Present [X]

IS WASTE ANY OF THE FOLLOWING? *At Least One Box Must Be Checked.*

[ ] Radioactive [ ] Water Reactive [ ] Oxidizer [ ] Shock Sensitive [ ] Reactive (other) [ ] DOT Explosives

[ ] NIOSH Human-Positive Carcinogens [ ] NESHAP Wastes (Benzene, etc.) [ ] Biological [X] None Apply

SHIPPING INFORMATION

1. Is this a DOT Hazardous Material (49CFR 172.101 & 173 Subpart D)? [ ] Yes [X] No
2. Reportable Quantity (RQ) in pounds ________
3. DOT Shipping Name Waste Non-Regulated, NON-DOT material Hazard Class ____ UN/NA ____

PG ____ ERG ____ Hazardous Constituents for "n.o.s." ____________

4. Method of Shipment: [X] Bulk Tanker [X] Vac truck [ ] Rail Car [ ] Drums [ ] Totes
5. Number of Units to Ship Now: ____________ 6. Anticipated Volume / Units per Year: ~30,000 gal or [X] One Time
6. Special Handling Requirements including PPE: ____________

CERTIFICATION STATEMENT

I hereby represent and warrant that I have personally examined and am familiar with the information contained and submitted in this 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 information misleading. I understand that others may rely on this representation and warranty in the handling and processing of the waste material described herein. If this box is checked [ ], I request Environmental Geo-Technologies not to correct any inconsistencies. Any corrections Environmental Geo-Technologies makes will be consistent with the results of the sample characterization and/or regulatory [redacted]

GENERATOR'S CHAIN OF CUSTODY RECORD INSTRUCTIONS: Please collect a representative 1-quart sample o the waste described in the above referenced Generators Waste Profile Report using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods cited in 40 CFR 261-Appendix 1. Fill in the sampling information in the spaces provided below. If you have problems obtaining a representative sample of your waste, please contact your Environmental Geo-Technologies representative.

[redacted]

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	7/27/17
Receiving ID#	Rinse 7
Manifest# Line:	
Land Ban Certification	Yes No
[redacted]	
Client	
Transporter	
Time in	
Time out	
Received by	JH
Sampled by	Client

Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?	N/A	Calcium	
TOC (ppm)(CC Waste Only)?	N/A	Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	8.9	Sodium Chloride	
Cyanides? (mg/L)	<30	Bicarbonate	
Sulfides? (ppm)	<200	Carbonate	
Specific Gravity	1.02	TDS	
Physical Description	Liquid	Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	72°F		
Conductivity	19.9 mS		
% Solids	2.2		
Turbidity	Yes No		
Color (Visual)	Yellow		
TSS (%)	<0.1		
Radiation Screen (as needed)	Negative		
Lab Signature			

Advanced RESOURCE Recovery, L.L.C.

MID067002602

01192

Generator's Waste Profile and Service Agreement

In order to properly transport and manage your waste stream, please complete the following:

SECTION 1. GENERAL INFORMATION

	Generator Information	Customer Information	Billing Information
EPA ID			
Company			
Address 1			
Address 2			
City, State Zip Code			
Contact			
Telephone			
Telephone			
Facsimile			
Email			

SECTION 2. WASTE INFORMATION

Common Name of Waste: Recover - Waste Water

Process Generating Waste: Rinse Water from Rinsing off "Recover" From Vehicle Rims.

Waste Volume Produced Annually: 30000 gallons

Shipping Increments: ☐ One Time ☐ Weekly ☒ Monthly ☐ Quarterly ☐ Yearly ☐ Other _____

Check Any Hazardous Characteristics That Apply: ☐ Reactive ☐ Corrosive ☐ Toxic ☐ Flammable ☐ Listed

SECTION 3. USED / WASTE OIL

Does your waste stream contain oil? ☐ Yes ☒ No

Is this oil considered to be a "used oil" as determined by 40CFR 260.10? ☐ Yes ☒ No

(If yes, then please complete used oil certification sheet.)

Attach analytical and check the appropriate box below for any parameters for which your oils have been tested.

☐ PCBs ☐ TCLP(Volatiles/Semivolatiles) ☐ Total Halogens ☐ Total Metals

SECTION 4. PHYSICAL AND CHEMICAL PROPERTIES

Is this waste a non-hazardous liquid industrial by-product?	☒ YES ☐ NO
What is the Color?	☐ White ☐ Grey ☒ Black ☐ Clear ☐
Describe the Odor	☐ Strong ☒ Mild ☐ None
Does it Pass Paint Filter Test	☐ YES ☒ NO
Physical State at 70° F	☒ Liquid ☐ Slurry ☐ Other
Density (weight/volume)	
Specific Gravity	>1.0
pH:	6.1-9.0
Flash Point (closed cup)	N/A
Viscosity at 70° F	☐ High ☐ Medium ☒ Low
Percent Composition	95-100% Water _____% Oil _____% Rag _____% Solids
Solids Composition:	☐ Suspended ☐ Settable ☐ Both

Chemical Composition: ***List all major constituents, include herbicides, pesticides, carcinogens, pathogens and other hazardous constituents.***

Chemical	Minimum	Maximum
"Recover"	1 %	5 %
	%	%
	%	%
	%	%

SECTION 5. TCLP AND TESTING CERTIFICATION

Please attach analytical results to this profile and check either "YES" indicating concentrations above the regulatory level or "NO" verifying the constituent is not present above regulatory level. ***All constituents must have either a "YES" or "NO" checked.***

Check the method used: ☐ Total ☐ TCLP

METALS mg/L (ppm)

Metal	Level > than	Yes	No
D004 Arsenic	5.0	☐	☒
D005 Barium	100.0	☐	☒
D006 Cadmium	1.0	☐	☒
D007 Chromium	5.0	☐	☒
D008 Lead	5.0	☐	☒
D009 Mercury	0.2	☐	☒
D010 Selenium	1.0	☐	☒
D011 Silver	5.0	☐	☒

ORGANICS mg/L (ppm)

Material	Level > than	Yes	No
D018 Benzene	0.5	☐	☒
D019 Carbon Tetrachloride	0.5	☐	☒
D021 Chlorobenzene	100.0	☐	☒
D022 Chloroform	5.0	☐	☒
D028 1, 2-Dichloroethane	0.5	☐	☒
D029 1, 1-Dichloroethylene	0.7	☐	☒
D035 Methyl Ethyl Ketone	200.0	☐	☒
D039 Tetrachloroethylene	0.7	☐	☒
D040 Trichloroethylene	0.5	☐	☒
D043 Vinyl Chloride	0.2	☐	☒

ACID EXTRACTABLES mg/L (ppm)			
Material	Level > than	Yes	No
D023 o-Cresol	200	☐	☒
D024 m-Cresol	200	☐	☒
D025 p-Cresol	200	☐	☒
D026 Cresol	200	☐	☒
D037 Pentachlorophenol	100	☐	☒
D041 2, 4, 5-Trichlorophenol	400	☐	☒
D042 2, 4, 6-Trichlorophenol	2.0	☐	☒

BASE NEUTRAL EXTRACTABLES mg/L (ppm)			
Material	Level > than	Yes	No
D027 1, 4-Dichlorobenzene	7.5	☐	☒
D030 2, 4-Dinitrotoluene	0.13	☐	☒
D032 Hexachlorobenzene	0.13	☐	☒
D033 Hexachlorobutadiene	0.5	☐	☒
D034 Hexachloroethane	3.0	☐	☒
D036 Nitrobenzene	2.0	☐	☒
D038 Pyridine	5.0	☐	☒

HERBICIDES and PESTICIDES mg/L (ppm)			
Material	Level > than	Yes	No
D012 Endrin	0.02	☐	☒
D013 Lindane	0.4	☐	☒
D014 Methoxychlor	10.0	☐	☒
D015 Toxaphene	0.5	☐	☒
D016 2, 4-D	10.0	☐	☒
D017 2, 4, 5-TP (Silvex)	1.0	☐	☒
D020 Chlordane	0.03	☐	☒
D031 Heptachlor	0.008	☐	☒

SECTION 6. SHIPPING INFORMATION

Is this waste a D.O.T. Hazardous Material?	☐ YES ☒ NO
By-Product Reporting Code:	☐ 017L – Crankcase Oil ☐ 019L – Coolants and Water Soluble Oil ☐ 021L – Other Oil ☒ 029L – Other Wastes ☐ _____
Proper Shipping Name:	Non Haz Liquid Waste
Method of Shipment:	☒ Bulk ☐ Drum ☐ Tote
Additional Handling / Comments:	
Waste Receipt Classification:	☐ Organic Waste ☐ Oily Waste ☒ Metal Derived Waste

Section 7. Terms and Conditions of Waste Service

1. Waste Disposal. Subject to the terms and conditions contained herein and those in the Proposal and Approval Notification Letter, Advanced Resource Recovery, (hereinafter "ARR" or "Company"), and the Service Provider and/or Generator, (hereinafter collectively "Customer"), agree to be legally bound hereby and that ARR agrees to accept at its facility (the "Facility") Industrial Waste (hereinafter referred to as "Industrial Waste" or "Waste") delivered by Customer, and which is acceptable to ARR as herein provided.

2. The Agreement. The entire agreement of the parties for the disposal of Industrial Waste (the "Agreement") shall consist of these terms and conditions, and any application, permit, approval or other documents provided by the Company that may be applicable to such Waste. Waste accepted at the Facility by Company will constitute Customer's acceptance of the Proposal and Approval Notification's terms and conditions as well as the terms and conditions herein. Each Waste Approval's terms and conditions will supersede the terms and conditions of any prior Agreement between the parties.

3. Waste Accepted at Facility. Customer warrants that the Waste described in the Waste Characterization Profile that is delivered to Company at its Facility hereunder will not contain any quantity of hazardous materials or substances, radioactive materials or substances or toxic wastes

or substances as defined by applicable federal, state and/or local laws or regulations. Any waste which does not meet this requirement shall hereinafter be referred to as "Unacceptable Waste." The Customer shall in all matters relating to the collection, transportation and disposal of the Waste hereunder, comply with all applicable federal, state and local laws, regulations, rules and orders regarding the same. The word "Facility" shall mean the Company's disposal facility located at 27140 Princeton Ave., Inkster, MI 48141.

4. Industrial Waste. Customer warrants that the Waste delivered to Company hereunder will not contain any waste that is not specifically described on the Waste Characterization Profile which is incorporated herein and which is subsequently approved by the Company and will meet the material description as set forth in the application and otherwise in all significant respects. The parties may incorporate additional Industrial Waste as part of this Agreement if prior to delivery of such Waste to Company, Customer has provided a Waste Characterization Profile Application for such Waste and Company has approved disposal of such Waste within the limitations and conditions contained in Company's written notice of approval of Industrial Waste disposal. Title to all Waste handled or disposed of by Company shall at all times remain with Customer.

5. Rights of Refusal/Rejection. Company has the right to reuse or reject after acceptance any load of wastes delivered to the facility if the Company believes the Customer has breached (or is breaching) its warranties or agreements hereunder. If Customer delivers wastes in breach of any warranty or agreements herein, Company may in its sole discretion, either remove and dispose of that waste and charge Customer for the costs or require Customer to promptly remove the waste.

6. Charges and Payment. Customer agrees to pay the Company's rates as written in the Proposal and Approval Notification Letter, which may be modified from time to time upon thirty (30) days written notice to the Customer. Payment shall be made by Customer within thirty (30) days after receipt of invoice from Company. In the event that any amount is overdue, the Company may terminate this Agreement. Customer agrees to pay service charge of 1.5% per month, or the maximum interest rate permitted by law whichever is less.

7. Term. This Agreement shall continue in effect until terminated by Company or Customer, with or without cause, upon prior notice by either party and representations and warranties regarding the waste delivered and the indemnities set forth herein shall survive termination of this Agreement.

8. Indemnity. Customer agrees to indemnify, save harmless, and defend Company, its Corporate affiliates, employees, officers and directors from and against any and all liabilities, claims, penalties, forfeitures, suits and the costs and expenses incident thereto (including costs of defense, settlement, and reasonable attorney's fees), which it may hereafter incur, become responsible for, or pay out as a result of death or bodily injuries to any person, destruction or damage to any property, contamination of or adverse effects on the environment, of any violation of governmental laws, regulations, or orders caused, in whole or in part by the Customer's breach of any warranty, term or provision of this Agreement, or any act, omission, willful misconduct or negligence of the Customer, its employees, or subcontractors in the performance of this Agreement.

9. Default. The occurrence of any of the following events shall also constitute an event of default by the Customer and shall give the Company the right to immediately terminate this Agreement. (a) A petition for reorganization or bankruptcy filed by or against the Customer; (b) Failure by Customer to pay any amount due to Company (c) Any breach by Customer of any of its obligations pursuant to the Agreement. The parties covenant and agree that the Company's removal and acceptance of the Customer's Waste constitutes work on and an improvement to the Customer's real property. Accordingly, Customer grants to Company the right to file any and all documents permitted by law or otherwise on Customer's real property to secure the monies owed to Company by Customer for services performed.

10. Attorneys' Fee. In the event of a breach by Customer of the Agreement, the Customer shall pay all attorneys' fee, collection fees and costs of Company incident to any action brought to enforce the Agreement.

11. Assignment. Customer may not assign, transfer or otherwise vest in any other company, entity or person, any of its rights or obligations under the Agreement without the prior written consent of Company.

12. Miscellaneous. The Agreement shall be governed by and constructed in accordance with the laws of the state of Michigan in which the Facility is located. The price and terms of this proposal are confidential and are not to be disclosed to any other persons or entities. Customer agrees to take all precautions to insure that its officers, employees and agents maintain the confidentiality of this information and do not disclose the price and terms of this proposal. Service Provider is defined as any company working on behalf of a Generator.

13. Notices. All notices herein shall be considered as having been given upon being placed in the mail, certified, postage prepaid, addressed to the Company or Customer at the address set forth in the Waste Characterization Profile.

SECTION 8 GENERATOR CERTIFICATION and WASTE SERVICE AGREEMENT

I certify that I am authorized to sign below and all information is complete, factual (including attached information), is an accurate representation of the known and suspected hazards and of waste generator regulations pertaining to the waste described herein and agree to the terms and conditions of waste services in Section 7. Based on our knowledge of the

SAFETY DATA SHEET

Issuing Date 30-Jul-2014 **Revision Date** 01-May-2015 **Revision Number** 1

1. Product and Company Identification

GHS product identifier

Product Name: Kolene® Recover® 5000 Stripper

Other means of identification

UN Number: UN1760

Recommended use of the chemical and restrictions on use

Recommended Use: Stripping organic coatings from metallic substrates

Uses advised against: Do not mix with strong oxidizing agents

Supplier's details

Kolene Corporation
12890 Westwood St.
Detroit, MI
TEL: 313 273-9220

Emergency telephone number

Emergency Telephone Numbers: CHEMTREC: 1-800-424-9300 (24 hour response)
Kolene Corporation: 313 273-9220

2. HAZARDS IDENTIFICATION

Classification

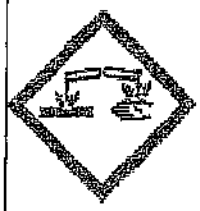
This chemical is considered hazardous according to the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200)

Skin Corrosion/Irritation	Category 1
Serious Eye Damage / Eye Irritation	Category 1

Emergency Overview

Signal Word: WARNING

Hazard Statements:
Causes serious eye damage / eye irritation
Causes skin irritation



Appearance: transparent, off-white **Physical State:** slightly viscous liquid **Odor:** no information available

2. HAZARDS IDENTIFICATION - continued

Precautionary Statements

Prevention	• Do not breathe dust/fume/gas/mist/vapors/spray. • Wash face, hands and any exposed skin thoroughly after handling. • Wear protective gloves/protective clothing/eye protection/face protection.
General Advice	• Immediately call a POISON CENTER or doctor/physician. • Specific treatment (see supplemental first aid instructions on this label)
Eyes	• IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. • Immediately call a POISON CENTER or doctor/physician.
Skin	• IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. • Wash contaminated clothing before reuse.
Inhalation	• IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Ingestion	• IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
Storage	• Store locked up
Disposal	• Dispose of contents/container to an approved waste disposal plant

Hazard Not Otherwise Classified (HNOC) • Not applicable

Other information Harmful to aquatic life with long lasting effects
0% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %	Trade secret
Potassium hydroxide	1310-58-3	0.25 - 2	*

**The exact percentage (concentration) of composition has been withheld as a trade secret.*

4. FIRST AID MEASURES

Description of necessary first-aid measures

Eye Contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Seek immediate medical attention and advice.
Skin Contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If symptoms persist, call a physician.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. If symptoms persist, call a physician.
Ingestion	Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

Most important symptoms/effects, acute and delayed

Most Important Symptoms/Effects	No information available.

4. FIRST AID MEASURES continued

Indication of immediate medical attention and special treatment needed, if necessary

Notes to Physician	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Carbon dioxide (CO_2). Dry chemical.
Unsuitable Extinguishing Media	CAUTION: Use of water spray when fighting fire may be inefficient and cause spread of fire and splash-back
Specific Hazards Arising from the Chemical	No information available.
Explosion Data	
Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.
Protective Equipment and Precautions for Firefighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions	Evacuate personnel to safe areas. Ensure adequate ventilation. In case of insufficient ventilation wear suitable respiratory equipment. Avoid contact with skin, eyes and clothing. Use personal protective equipment.

Environmental Precautions

Environmental Precautions	Avoid release to the environment. Dispose of contents/container to an approved waste disposal plant. See Section 12 for additional Ecological Information.

Methods and materials for containment and cleaning up

Methods for Containment	Prevent further leakage or spillage if safe to do so.
Methods for Cleaning Up	Pick-up spillage using a high efficiency vacuum cleaner. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling	Handle in accordance with good industrial hygiene and safety practice. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Do not eat, drink or smoke when using this product. Do not take internally. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep from freezing. Keep at temperatures above 45 °F
Incompatible Products	Oxidizing agents. Reducing agents. Mineral acids. Nitrites or other nitrosating agents

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Potassium hydroxide 1310-58-3	Ceiling: 2 mg/m³	(vacated) Ceiling: 2 mg/m³	Ceiling: 2 mg/m³

Appropriate engineering controls

Engineering Measures	• Showers • Eyewash stations • Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection	Face-shield. Goggles.
Skin and Body Protection	Manufacturer recommended gloves for handling corrosive materials should be worn. Impervious clothing. Safety shoes. Rubber boots.
Respiratory Protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Slightly viscous liquid	Appearance	clear straw color
Odor	No information available	Odor Threshold	No information

Property	Values	Remarks/ - Method
pH	~ 10.5 - 14	None known
Melting Point/Range	No data available	None known
Boiling Point/Boiling Range	> 315.56 °C / 600 °F	None known
Flash Point	204.44 °C / ~ 400 °F	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limits in Air		
upper flammability limit	No data available	
lower flammability limit	No data available	
Vapor Pressure	< 0.01 mm HG @ 20° C	None known
Vapor Density	Not applicable	None known
Specific Gravity	~ 1.12	None known
Water Solubility	Completely soluble	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition Temperature	> 315.56 °C / 600 °F	None known

9. PHYSICAL AND CHEMICAL PROPERTIES continued

Decomposition Temperature	No data available	None known
Viscosity	No data available	None known
Flammable Properties	Not flammable	
Explosive Properties	No data available	
Oxidizing Properties	No data available	

Other Information

VOC Content (%)	No data available

10. STABILITY AND REACTIVITY

Reactivity	• No data available.
Chemical stability	• Stable under recommended storage conditions.
Possibility of hazardous reactions	• None under normal processing.
Hazardous Polymerization	• Hazardous polymerization does not occur.
Conditions to avoid	• Incompatible products.
Incompatible materials	• Strong oxidizing agents. Nitrites or other nitrosating agents
Hazardous decomposition products	• none known based on information supplied

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	May cause irritation of respiratory tract.
Eye Contact	Causes serious eye damage. Corrosive to the eyes and may cause severe damage including blindness.
Skin Contact	Causes severe skin burns.
Ingestion	Can burn mouth, throat, and stomach.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Potassium hydroxide	= 214 mg/kg (Rat)		

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms	No information available.

Delayed and immediate effects and also chronic effects from short and long term exposure

Sensitization	No information available.
Mutagenic Effects	No information available.
Carcinogenicity	Contains no ingredients above reportable quantities listed as a carcinogen.
Reproductive Toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration Hazard	No information available.

Numerical measures of toxicity - Product

The following values are calculated based on chapter 3.1 of the GHS document:

LD50 Oral	7243 mg/kg; Acute toxicity estimate
LD50 Dermal	11218 mg/kg; Acute toxicity estimate

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life with long lasting effects.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Potassium hydroxide 1310-58-3		LC50 96 h: = 80 mg/L static (Gambusia affinis)		

Persistence and Degradability No information available.

Bioaccumulation

Chemical Name	Log Pow
Potassium hydroxide	0.83

Other Adverse Effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods	Dispose of in accordance with federal, state, and local regulations
Contaminated Packaging	Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT

UN-Number	UN1760
Proper shipping name	Corrosive liquid, n.o.s.
Hazard Class	8
Packing Group	II
Description	UN1760, Corrosive liquid, n.o.s. (Potassium hydroxide), 8, II
Emergency Response Guide Number	154

TDG

UN-Number	UN1760
Proper Shipping Name	Corrosive liquid, n.o.s.
Hazard Class	8
Packing Group	II
Description	UN1760, Corrosive liquid, n.o.s. (Potassium hydroxide), 8, II

MEX

UN-Number	UN1760
Proper Shipping Name	Corrosive liquid, n.o.s.
Hazard Class	8
Packing Group	II
Description	UN1760, Corrosive liquid, n.o.s. (Potassium hydroxide), 8, II

ICAO

UN-Number	UN1760
Proper shipping name	Corrosive liquid, n.o.s.
Hazard Class	8
Packing Group	II
Description	UN1760, Corrosive liquid, n.o.s. (Potassium hydroxide), 8, II

IATA

UN-Number	UN1760
Proper Shipping Name	Corrosive liquid, n.o.s.
Hazard Class	8
Packing Group	II
ERG Code	8L
Description	UN1760, Corrosive liquid, n.o.s. (Potassium hydroxide), 8, II

IMDG/IMO

UN-Number	UN1760
Proper Shipping Name	Corrosive liquid, n.o.s.
Hazard Class	8
Packing Group	II
EmS No.	F-A, S-B
Description	UN1760, Corrosive liquid, n.o.s. (Potassium hydroxide), 8, II

RID

UN-Number	UN1760
Proper Shipping Name	Corrosive liquid, n.o.s.
Hazard Class	8
Packing Group	II
Classification Code	C9
Description	UN1760, Corrosive liquid, n.o.s. (Potassium hydroxide), 8, II

14. TRANSPORT INFORMATION continued

ADR

UN-Number	UN1760
Proper Shipping Name	Corrosive liquid, n.o.s.
Hazard Class	8
Packing Group	II
Classification Code	C9
Tunnel Restriction Code	(E)
Description	UN1760, Corrosive liquid, n.o.s. (Potassium hydroxide), 8, II, (E)

ADN

Proper Shipping Name	Corrosive liquid, n.o.s.
Hazard Class	8
Packing Group	II
Classification Code	C9
Special Provisions	274
Description	UN1760, Corrosive liquid, n.o.s. (Potassium hydroxide), 8, II
Limited Quantity	1 L

15. REGULATORY INFORMATION

International Inventories

DSL	Complies

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA).
This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Potassium hydroxide	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Illinois	Rhode Island
Potassium hydroxide	X	X	X		X

16. OTHER INFORMATION

NFPA	Health Hazard 3	Flammability 1	Instability 0	Physical and Chemical Hazards X
HMIS	Health Hazard 3	Flammability 1	Physical Hazard 0	Personal Protection X

Prepared By	Product Stewardship | 23 British American Blvd. | Latham, NY 12110 | 1-800-572-6501
Issuing Date	30-Jul-2014
Revision Date	01-May-2015
Revision Note	Reformatted SDS. Revised by James C Malloy VP-CTO Kolene Corporation

General Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet

Calculation of Average Injection Rate

CURRENT REPORTING YEAR 2017

CURRENT REPORTING MONTH June

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

Nov 2013

We're not sure whether this page was included in last month's report, so here it is again. 083117

CURRENT MONTH (all volumes in gallons)

	Injected Waste	Injected Non-Waste	Total injected
MI-163-1W-C010, Well #1-12			
Current Month	597,308	0	597,308
Since facility first injected			10,821,197
MI-163-1W-C011, Well #2-12			
Current Month	27,831	0	27,831
Since facility first injected			4,648,736
		Lifetime Combined	15,469,933

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 43

43 lifetime number of months of injection × 43,830 minutes/month
= 1,884,690 minutes of injection

Lifetime combined injected volume 15,469,933 ÷ 1,884,690 minutes of injection
= 8.2 gpm average injection rate