Michigan Department of Environmental Quality Analytical Testing Report
Work Order: 1604159
Report Date: 5/10/16
Client: MDEQ-RRD-GRAND RAPIDS
Attention: Paul J. Knoerr
Project Name: ELECTROLX-BELDING
Project Number: 34000083

Sample Number								1604159-01	1604159-02	1604159-03	1604159-04	1604159-05	1604159-06	1604159-07	1604159-08	1604159-09	1604159-10	1604159-11	1604159-12	1604159-13	1604159-14
Sample ID					Groundwater			MW-1	MW-2	MW-2D	MW-3	MW-4S	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13	MW-4D
Sample Depth				Groundwater Surface Water Interface	Volatilization to																
Date Collected			Target	Drinking Water		Indoor Air	Final	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016
Date Received			Detection Limit (TDL)	Criteria (DWC)	Criteria (GSIC)	Inhalation Criteria (GVIIC)	Rule 57 Acute Value (FAV)	4/21/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016
Analyte	Units	Method			Organics-Volatiles																
1,1,1,2-Tetrachloroethane	ug/L	8260	1	77	ID	15,000	ID	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	ug/L	8260	1	200	89	660,000	1,600	**15**	<1.0	<1.0	<1.0	**110**	**4.6**	<1.0	**1.8**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	ug/L	8260	1	9	78	12,000	1,800	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	ug/L	8260	1	5	330	17,000	6,400	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	ug/L	8260	1	880	740	1,000,000	13,000	**6.0**	**2.2**	<1.0	<1.0	**25**	<1.0	<1.0	**67**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethylene	ug/L	8260	1	7	130	200	2,300	**1.0**	<1.0	<1.0	<1.0	**3.1**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,3-Trichlorobenzene	ug/L	8260	NA	NA	NA	NA	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2,3-Trichloropropane	ug/L	8260	1	42	NA	8,300	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,3-Trimethylbenzene	ug/L	8260	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trichlorobenzene	ug/L	8260	5	70	99	300,000	850	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2,4-Trimethylbenzene	ug/L	8260	1	63	17	56,000	310	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibromo-3-chloropropane	ug/L	8260	NA	NA	NA	NA	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dibromoethane	ug/L	8260	0	0	6	2,400	280	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	ug/L	8260	1	600	13	160,000	240	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	ug/L	8260	1	5	360	9,600	16,000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	ug/L	8260	1	5	230	16,000	4,000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	ug/L	8260	1	72	45	61,000	810	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-Dichlorobenzene	ug/L	8260	1	7	28	18,000	200	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	ug/L	8260	1	75	17	16,000	210	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	ug/L	8260	25	13,000	2,200	240,000,000	40,000	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-Hexanone	ug/L	8260	50	1,000	ID	4,200,000	ID	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-Methylnaphthalene	ug/L	8260	5	260	19	25,000	340	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-Propanone (acetone)	ug/L	8260	50	730	1,700	1,000,000,000	30,000	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
4-Methyl-2-pentanone (MIBK)	ug/L	8260	50	1,800	ID	20,000,000	ID	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acrylonitrile	ug/L	8260	2	3	2	34,000	1,200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	ug/L	8260	1	5	200	5,600	1,900	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromobenzene	ug/L	8260	1	18	NA	180,000	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromochloromethane	ug/L	8260	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	ug/L	8260	1	80	ID	4,800	ID	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	ug/L	8260	1	80	ID	470,000	ID	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	ug/L	8260	5	10	35	4,000	640	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Carbon disulfide	ug/L	8260	5	800	ID	250,000	ID	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon tetrachloride	ug/L	8260	1	5	45	370	1,400	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	ug/L	8260	1	100	25	210,000	450	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	ug/L	8260	5	430	1,100	5,700,000	20,000	<5.0	<5.0	<5.0	**32**	**7.9**	<5.0	<5.0	**24**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Chloroform	ug/L	8260	1	80	350	28,000	11,000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	ug/L	8260	5	260	ID	8,600	ID	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
cis-1,2-Dichloroethylene	ug/L	8260	1	70	620	93,000	11,000	**50**	**19**	<1.0	<1.0	**200**	**65**	<1.0	**7.8**	<1.0	**1.8**	<1.0	<1.0	**73**	<1.0
cis-1,3-Dichloropropylene	ug/L	8260	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cyclohexane	ug/L	8260	NA	NA	NA	NA	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dibromochloromethane	ug/L	8260	5	80	ID	14,000	ID	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromomethane	ug/L	8260	5	80	NA	ID	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichlorodifluoromethane	ug/L	8260	5	1,700	ID	220,000	ID	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Diethyl ether	ug/L	8260	10	10	ID	61,000,000	ID	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Diisopropyl Ether	ug/L	8260	5	30	ID	8,000	ID	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	ug/L	8260	1	74	18	110,000	320	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethyltertiarybutylether	ug/L	8260	5	49	ID	2,900,000	ID	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Hexachloroethane	ug/L	8260	5	7	7	27,000	210	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Isopropylbenzene	ug/L	8260	5	800	28	56,000	500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m & p - Xylene	ug/L	8260	NA	NA	NA	NA	NA	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Methyl iodide	ug/L	8260	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methylene chloride	ug/L	8260	5	5	1,500	220,000	17,000	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyltertiarybutylether	ug/L	8260	5	40	7,100	47,000,000	420,000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	ug/L	8260	5	520	11	31,000	200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
n-Butylbenzene	ug/L	8260	1	80	ID	ID	ID	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

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Sample ID					Groundwater			MW-1	MW-2	MW-2D	MW-3	MW-4S	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13	MW-4D
Sample Depth				Groundwater Surface Water Interface	Volatilization to	Final															
Date Collected			Target Detection Limit (TDL)	Drinking Water	Indoor Air	Rule 57		4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016
Date Received				Criteria (DWC)	Inhalation Criteria (GVIIC)	Acute Value (FAV)	Criteria (GSIC)	4/21/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016
Analyte	Units	Method	Organics-Volatiles																		
n-Propylbenzene	ug/L	8260	1	80	ID	ID	ID	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
o-Xylene	ug/L	8260	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
p-Isopropyl toluene	ug/L	8260	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
sec-Butylbenzene	ug/L	8260	1	80	ID	ID	ID	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Styrene	ug/L	8260	1	100	80	170,000	2,900	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
tert-Butylbenzene	ug/L	8260	1	80	ID	ID	ID	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
tertiary Butyl Alcohol	ug/L	8260	50	3,900	NA	1,000,000,000	NA	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
tertiaryAmylmethylether	ug/L	8260	5	190	NA	260,000	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Tetrachloroethylene	ug/L	8260	1	5	60	25,000	2,900	<1.0	<1.0	<1.0	<1.0	<1.0	**8.4**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrahydrofuran	ug/L	8260	90	95	11,000	6,900,000	150,000	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Toluene	ug/L	8260	1	790	270	530,000	2,600	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethylene	ug/L	8260	1	100	1,500	85,000	28,000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.6**	<1.0	<1.0	<1.0	<1.0	**1.5**	<1.0
trans-1,3-Dichloropropylene	ug/L	8260	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,4-Dichloro-2-butene	ug/L	8260	NA	NA	NA	NA	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Trichloroethylene	ug/L	8260	1	5	200	2,200	3,500	**1.3**	<1.0	<1.0	<1.0	**1.9**	**1,700**	<1.0	**2.3**	<1.0	<1.0	<1.0	**11**	**2.7**	<1.0
Trichlorofluoromethane	ug/L	8260	1	2,600	NA	1,100,000	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	ug/L	8260	1	2	13	1,100	17,000	**110**	**25**	<1.0	<1.0	**300**	<1.0	<1.0	**8.8**	<1.0	**2.3**	<1.0	<1.0	**2.3**	<1.0

Grey indicates contaminant was detected.
Yellow indicates contaminant exceeds DWC.
Blue indicates contaminant exceeds GSIC.
Green indicates contaminant exceeds both DWC and GSIC.
Orange indicates contaminant exceeds one or more criteria; GVIIC and/or FAV.
"ID" means insufficient data to develop criterion.
"NA" means a criterion or value is not available or, in the case of background, not applicable.
"NLV" means hazardous substance is not likely to volatilize under most conditions.
Letters in criteria columns refer to Footnotes of the Criteria/RBSLs tables.