RESOLUTION CONSULTANTS

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Subject: **2017 Long Term Monitoring Remedial Process Optimization – Navy-Owned Wells, NWIRP Bethpage**

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INTRODUCTION

This memorandum documents a review and analysis of the Groundwater Long Term Monitoring (LTM) Program being performed jointly by the Navy and Northrop Grumman (NG) for Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage. The purpose of this review is to execute a Remedial Process Optimization (RPO) evaluation of the LTM program, which includes analysis of the LTM results obtained to date, and provision of recommendations to optimize the LTM program. The RPO evaluation consisted of three elements: an analysis of the data and trends, an analysis of the first-order change rates in concentrations and finally, development of recommendations. This evaluation was conducted on 121 Navy-owned wells currently included in the groundwater LTM program. The following provides procedural documentation and results of the RPO evaluation.

ANALYSIS OF LTM DATA AND TRENDS IN THE DATA

There are 121 Navy-owned wells under analysis for the current LTM report; these are shown in Figure 1. Prior reports included wells BPOW4-1 and BPOW4-2, however these wells were decommissioned in 2014 due to compromised well integrity and replaced with BPOW4-1R and BPOW4-2R. Documentation of the integrity testing, attempted rehabilitation, and decommissioning of BPOW4-1 and BPOW4-2 and subsequent installation of replacement wells BPOW4-1R and

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BPOW4-2R is provided in *2014 OU2 Groundwater Investigation BPOW4-1R, BPOW4-2R Installation Report, Bethpage, NY* (Resolution Consultants, 2015).

Of the 121 wells evaluated herein, trend and first-order change rate analysis was completed on 69 wells, summarized in Table 1, Appendix A and Appendix B. Trend analysis was not conducted on 52 wells with exclusively or primarily non–detect (ND) values or fewer than four data points. These wells are listed in Table 2.

The full historical data record for these 69 wells evaluated in Table 1 is included in Appendix A. LTM began as early as 1999-2000 for some wells, with others being added to the program as they were installed. Monitoring frequencies have ranged from quarterly to bi-annually for each well. Results from some of the Navy-owned wells have historically been included with NG–owned wells in monitoring reports prepared and submitted to the New York State Department of Environmental Conservation (NYSDEC) by NG. The remainder of the Navy-owned wells have been sampled by Resolution and are included in the quarterly sampling reports submitted to NYSDEC.

The primary parameter of concern being monitored in the LTM program, in terms of frequency and magnitude of detection, is trichloroethene (TCE). Other parameters of concern that are being monitored above NYSDEC standards include tetrachloroethylene (PCE), Freon 113, 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,1-dichloroethane, 1,2-dichloroethene total, and cis-1,2-dichloroethene. Because of its importance as the primary parameter of concern, the RPO evaluation focused on TCE. The TCE data for each well, as presented in Appendix A, was fully evaluated with respect to completeness prior to arranging it for subsequent trend analyses.

Significant trends in the data were determined by performing a full Mann–Kendall (MK) analysis (Gilbert, Richard O., 1987, *Statistical Methods for Environmental Pollution Monitoring*) of each dataset from each well. The MK test is a non-parametric statistical test for trends in the data record for a given well over time. The MK statistic (S) provides an indication of whether a trend exists and whether the trend is positive or negative at a given confidence level. The MK statistic is calculated by iteratively comparing a data value to all others prior to and subsequent to that data value. Data values greater than that data value are assigned a score of +1, values less than that are assigned a score of -1, and identical values are assigned a score of 0. The resulting matrix of scores is summed to calculate the S statistic. The presence of a trend is determined based on the absolute value of the S statistic, the number of samples, and a critical probability value representing the confidence level. A positive value for S indicates an increasing trend in the data over time, whereas a negative value indicates a decreasing trend. A value of S near 0 suggests there is no significant

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upward or downward trend. The magnitude of S is therefore an indication of the strength of the trend. For the purposes of this RPO evaluation, the presence of a significant trend was tested at both an 80% (the acceptance or rejection of the null hypothesis is correct 80% of the time) and 90% (the acceptance or rejection of the null hypothesis is correct 90% of the time) confidence level. Precedence for use of these confidence levels can be found in the Wisconsin Department of Natural Resources (WDNR), 2003, *Guidance on Natural Attenuation for Petroleum Releases*. The statistical software for this RPO evaluation was originally developed by the WDNR; the original version has been expanded to test up to 18 sampling events.

In the event that a statistically significant trend could not be identified, the data were tested for stability by calculating the coefficient of variation (CV; the ratio of the standard deviation to the mean, a measure of the scatter of the data). If the CV is less than or equal to 1, the well concentrations are considered stable; if it is greater than 1, they are considered not stable.

Even though the MK test is non-parametric and therefore is not sensitive to the distribution of the data, it is clearly sensitive to the relative differences in magnitude between data values for a given well. This can be a critical concern when detected values are low and are close in magnitude to the detection limit and when intra-well detection limits are variable. To account for this potential bias, all NDs for a given well were assigned one-half of the lowest reported ND limit for that well.

In addition to all of the historical data for each well, Appendix A identifies the dataset used for the MK testing of each well (labeled as "MK Dataset" for each well), consisting of a maximum of the most recent 18 sampling events with the ND values corrected as described above. The results of the MK testing are provided in Appendix B.

Table 1 provides a summary of the results of the MK testing performed for each well at both 80% and 90% confidence. In addition, for wells that were tested that did not exhibit a statistically significant trend, the results of the stability test is provided. Note that a total of 39 wells were not MK tested primarily because they have exhibited NDs for a significant time (a test would have simply trended a flat line and resulted in a "stable" determination, or it would simply be a trending of the detection limits if they were variable), or the well had less than four sampling events. These wells are thus omitted from Table 1 and the rationale for a well not being tested is provided in Table 2.

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FIRST-ORDER CHANGE RATES IN CONCENTRATION

The use of the first-order change in a temporal dataset is a predictive tool that can be applied to concentration over time (Newell, Charles J., et al., *Calculation and Use of First-Order Rate Constants for Monitored Natural Attenuation Studies*, [EPA/540/S-02/500] November 2002). This is useful to determine the efficacy of a remediation system, to determine if natural attenuation is operating effectively, to screen potential remedial alternatives, and to estimate future concentrations under both passive and active remediation scenarios. The basis of the technique utilizes the regression of a dependent variable (concentration) over an independent variable (time). Typically, a linear regression technique is applied (although non-linear techniques can be applied as well), and a least squares fit regression line (the line that has the smallest sum of the squares of the residuals of the data relative to the line) is used to calculate the first-order equation for the change rate.

The results of the MK analysis are included in Appendix B: these include the determination of a trend, the calculated change rate, stability test and plots of the least-squares linear regression line for each well. In addition, natural log concentration plots are presented for wells showing a decreasing trend.

Once the slope in the first-order equation is known, it can be utilized to predict future concentrations (assuming no change in conditions, such as implementation of a different remedy, or introduction of another source mass). A decreasing slope indicates an exponential loss of mass, and the first-order slope is calculated with the concentration data transformed to lognormal (this allows the first-order change rate to be solved with a linear equation, which is applied over the time of concern to calculate future concentrations). An increasing slope indicates an increase in mass, and the increase is assumed to be linear (a constant introduction of mass per day) unless the data suggest otherwise (the data exhibit large residual values to the linear regression line). In the case of an increasing slope, a source term is calculated using the change in concentration over the time span in the data record and this is applied linearly, multiplied by the first-order change rate per day, to calculate future concentrations. The projected concentration for an increasing trend, assuming a linear increase in mass, can also be solved using the first-order change rate and ratio relationships.

Table 1 provides important information regarding the first-order concentration rate change analyses (for wells with a minimum 80% confidence of the presence of a statistical trend), including the change rate, the dates in the test record dataset, the number of days in the test record, the initial

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concentration in the test record, the most recent concentration in the test record, the highest concentration and its date of detection, the projected concentration in 2021, and the time to reach the Maximum Concentration Levels (MCL) of 5 ppb for TCE. Figure 2 and Figure 3 depict wells with increasing and decreasing trends, respectively.

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RECOMMENDATIONS

The current sampling frequency for each of the 69 Navy-owned wells (for which trend and first-order change rate analysis was completed) and recommendations for changes in frequency or status quo are provided in Table 1. Of the 69 wells listed in Table 1, 43 are sampled on a frequency determined by other programs (e.g., BPOWs per the Public Water Supply Contingency Plan requirements; RE108 hot spot wells), thus no changes in sampling frequency are recommended here. The sampling frequency of the remaining 26 wells was programmatically set (ranging from quarterly to semi-annually) as they were installed. This report evaluates the future sampling frequency of these 26 wells.

Recommended changes in sampling frequency do not imply changes to ongoing water level measurement schedules including the quarterly synoptic water level rounds completed as part of the Navy's quarterly sampling program. The following general decision rules were applied to the 26 wells described above to guide recommended changes in sampling frequency. Note that there are multiple rules that are not applied in Table 1 at this time, but are listed here as they may be invoked in the future.

1. No Trend; stable; most recent result below MCL = bi-annual
2. No Trend; stable; most recent result above MCL = annual or semi-annual
3. No Trend; not stable; most recent result above MCL = semi-annual
4. No Trend; not stable; most recent result below MCL = bi-annual
5. Increasing Trend; change rate >0.001/day; most recent result below MCL = annual
6. Increasing Trend; change rate <0.001/day; most recent result below MCL = bi-annual
7. Increasing Trend; most recent result above MCL = annual or semi-annual
8. Decreasing Trend; most recent result below MCL; highest historical detection below MCL = no further sampling, eliminate from LTM
9. Decreasing Trend; most recent result below MCL; highest historical detection above MCL = annual, bi-annual or eliminate
10. Decreasing Trend; most recent result above MCL = annual or semi-annual
11. Not MK Tested; >75% NDs in last 3 years = no further sampling, eliminate from LTM
12. Not MK Tested; >75% ND; < 3 years of sample data = annual

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13. Not MK Tested; all NDs; > 3 years of sample data = no further sampling, eliminate from LTM
14. Not MK Tested; all NDs; < 3 years of sample data = annual
15. No longer sampled; = no further sampling, eliminate from LTM

An additional recommendation is to perform the LTM/RPO on the Navy-owned wells every two years.

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REFERENCES

Gilbert, Richard O., 1987*, Statistical Methods for Environmental Pollution Monitoring*, v. 1, 321 p.

Newell, Charles J., et al., 2002, *Calculation and Use of First-Order Rate Constants for Monitored Natural Attenuation Studies,* USEPA Ground Water Issue, EPA/540/S-02/500, 1-25 p.

Resolution Consultants, 2015. *2014 OU2 Groundwater Investigation BPOW4-1R, BPOW4-2R Installation Report, NWIRP Bethpage, NY*, July.

Wisconsin Department of Natural Resources (WDNR), 2003, *Guidance on Natural Attenuation for Petroleum Releases, Bureau for Remediation and Redevelopment*, v. 1, 9-12 p.

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Tables

Table 1
2017 Long Term Monitoring Trend Analysis
Trichloroethene (TCE) of NWIRP Bethpage, Navy Owned Wells

Well	MK 80% Result	MK 90% Result	Stable?	Change Rate/day (ppb/day)	Dates in Test Record	Days in Test Record	Initial Concentration (ppb)	Most Recent Concentration (ppb)	Highest Detection in ppb (Date)[1]	Concentration in 5 years from last date (ppb)	Time to Reach MCL (yrs)	Current Monitoring Frequency	Recommended Monitoring Frequency	Applied Decision Rule[2]
BPOW1-1	Increasing	Increasing	na	0.00012	5/1/12 – 6/19/17	1875	1.1	1	4 (4/30/04)	0.9	na	Quarterly	Quarterly	*
BPOW1-2	Increasing	Increasing	na	0.00027	8/20/12 - 6/13/17	1758	0.3	0.88	0.85 (6/7/16)	1.5	na	Quarterly	Quarterly	*
BPOW3-4	Increasing	Increasing	na	0.01305	5/6/12 - 6/14/17	1865	51	77.3	80.7 (12/11/15)	103	na	Quarterly	Quarterly	*
BPOW4-1R	NT	NT	Y	na	12/15/14 – 5/26/17	893	0.84	0.84	1.1 (5/31/16)	na	na	Semi-Annual	Semi-Annual	*
BPOW4-2R	NT	NT	Y	na	12/15/14 – 6/20/17	918	0.73	0.6	1.9 (6/1/16)	na	na	Semi-Annual	Semi-Annual	*
FW-03	Decreasing	Decreasing	na	-0.0002	3/14/06 - 4/20/17	4055	4	0.71	5.6 (3/6/2007)	0.5	na	Annual	Bi-annual	9
GM-15D	Decreasing	Decreasing	na	-0.00035	2/27/09 - 6/28/17	2913	1.5	0.5 (ND)	13 (1/30/2001)	0.3	na	Semi-Annual	Eliminate	9
GM-15D2	Decreasing	Decreasing	na	-0.00006	2/27/09 – 6/28/17	3043	11	10	17 (3/28/02)	9	31.65	Semi-Annual	Semi-Annual	10
GM-16SR	Increasing	NT	na	0.00209	7/24/03 - 4/10/06	991	2.5 (ND)	4	5 (9/7/2005)	6.8	na	Not Sampled	Eliminate	15
GM-17D	NT	NT	Y	na	3/7/08 – 5/2/17	3343	2.5	0.83	1 (9/1/2005)	na	na	Semi-Annual	Bi-annual	1
GM-17I	Increasing	Increasing	na	0.00027	3/7/08 – 5/2/17	3343	0.5 (ND)	0.5 (ND)	1.7 (4/22/15)	0.5	na	Semi-Annual	Bi-annual	6
GM-17SR	NT	NT	Y	na	3/29/04 - 3/15/06	737	2.5 (ND)	2.5 (ND)	0.7 (9/7/2015)	na	na	Not Sampled	Eliminate	15
GM-18D	Decreasing	Decreasing	na	-0.00047	3/21/08 – 4/21/17	3318	2.5	0.52	12 (4/11/06)	0.2	na	Semi-Annual	Eliminate	9
GM-21D	Increasing	NT	na	0.00043	5/17/09 – 5/3/17	2908	0.74	1.5	3 (7/17/03)	2	na	Annual	Bi-annual	6
GM-39DA	Decreasing	Decreasing	na	-0.00053	3/18/08 - 5/3/17	3333	19	1.6	19 (3/18/08)	0	na	Semi-Annual	Bi-annual	9
GM-39DB	Decreasing	Decreasing	na	-0.0002	3/18/08 – 5/3/17	3333	46	34	94 (5/9/11)	23.6	26.26	Semi-Annual	Semi-Annual	10
GM-73D	NT	NT	N	na	3/18/08 - 6/15/17	3376	6.4	4.4	780 (10/18/02)	na	na	Semi-Annual	Semi-Annual	3
GM-73D2	Decreasing	Decreasing	na	-0.00018	3/17/08 – 4/14/17	3315	58	35.7	1200 (11/22/02)	25.8	30.32	Semi-Annual	Semi-Annual	10
GM-74D	Decreasing	Decreasing	na	-0.00031	3/17/08 – 5/2/17	3333	2.5 (ND)	1.3	81 (2/5/01)	0.7	na	Semi-Annual	Eliminate	9
GM-74D2	NT	NT	Y	na	3/17/08 – 4/14/17	3315	7.3	7.8	12 (3/20/06)	na	na	Semi-Annual	Semi-Annual	2
GM-74I	Decreasing	Decreasing	na	-0.00057	3/17/08 – 5/2/17	3333	2.5 (ND)	0.6	0.79 (12/9/13)	0.2	na	Semi-Annual	Eliminate	8
GM-75D2	Decreasing	Decreasing	na	-0.00056	2/3/10 – 6/12/17	2686	82	26.4	1500 (10/3/02)	9.5	8.14	Semi-Annual	Semi-Annual	10
GM-78I	NT	NT	Y	na	3/15/06 - 5/5/17	4069	0.9	0.44	7 (1/9/02)	na	na	Annual	Bi-annual	1
GM-78S	NT	NT	Y	na	3/15/06 - 6/22/17	4117	0.3	0.43	1.1 (2/8/2007)	na	na	Annual	Bi-annual	1
GM-79D	NT	NT	Y	na	4/13/10 – 6/28/17	2631	34	46.9	110 (4/7/03)	na	na	Semi-Annual	Semi-Annual	2
GM-79I	NT	NT	N	na	1/22/10 - 6/28/17	2714	0.25 (ND)	0.45	30 (2/14/12)	na	na	Semi-Annual	Bi-annual	4
HN-24I	NT	NT	Y	na	4/12/05 - 4/20/17	4391	0.25 (ND)	11.2	290 (10/15/2002)	na	na	Annual	Semi-Annual	2
HN-29D	Decreasing	Decreasing	na	-0.00032	9/27/00 - 3/14/06	1994	1	2.5 (ND)	2 (12/20/02)	1.4	na	Not Sampled	Eliminate	15
HN-29I	Decreasing	Decreasing	na	-0.00027	1/3/02 - 11/14/12	3968	2	0.26	2 (1/7/04)	0.2	na	As Needed Site 1	Eliminate	8
HN-40I	Increasing	Increasing	na	0.00229	9/27/06 - 4/19/17	3857	0.5	0.5 (ND)	35 (12/22/03)	0.5	na	Annual	Annual	5
HN-42I	Decreasing	Decreasing	na	-0.00103	9/24/07 - 4/19/17	3495	12	0.42	20 (7/8/09)	0.1	na	Annual	Annual	9
RE103D1	Decreasing	Decreasing	na	-0.00024	3/11/14 – 12/13/17	1373	1000	720	1300 (12/10/14)	462.6	56.18	Quarterly	Quarterly	*
RE103D2	Decreasing	Decreasing	na	-0.00035	3/11/14 – 12/13/17	1373	750	530	1300 (9/23/14)	279.8	36.5	Quarterly	Quarterly	*
RE103D3	Decreasing	Decreasing	na	-0.00026	3/11/14 – 12/13/17	1373	430	390	600 (12/10/14)	242.7	45.91	Quarterly	Quarterly	*
RE104D1	Decreasing	Decreasing	na	-0.00062	3/12/14 – 12/5/17	1364	150	69	160 (6/12/14)	22.3	11.6	Quarterly	Quarterly	*
RE104D2	Increasing	Increasing	na	0.01321	3/12/14 – 12/5/17	1364	2.6	27	27 (12/5/2017)	5.6	na	Quarterly	Quarterly	*
RE105D1	Decreasing	Decreasing	na	-0.00022	3/11/14 – 12/5/17	1365	160	100	160 (3/11/14)	67.3	37.75	Quarterly	Quarterly	*
RE105D2	Increasing	Increasing	na	0.5172	3/11/14 – 12/5/17	1365	620	1900	1900 (12/5/17)	3611.4	na	Quarterly	Quarterly	*
RE107D1	NT	NT	Y	na	12/18/15 – 11/29/17	712	17	12.7	17 (12/18/15)	na	na	Quarterly	Quarterly	*
RE107D2	Increasing	Increasing	na	0.11332	12/18/15 – 11/29/17	712	140	226	226 (11/29/17)	446.4	na	Quarterly	Quarterly	*
RE107D3	NT	NT	Y	na	12/29/15 – 11/29/17	701	0.36	0.125	0.36 (12/29/15)	na	na	Quarterly	Quarterly	*
RE108D1	Decreasing	Decreasing	na	-0.00091	3/12/14 – 12/6/17	1365	130	51	140 (3/27/15)	9.7	6.99	Quarterly	Quarterly	*

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RE108D2	Decreasing	Decreasing	na	-0.00021	3/12/14 – 12/6/17	1365	4600	3100	4600 (3/12/14)	2113.1	83.881	Quarterly	Quarterly	*
RE114D1	NT	NT	Y	na	12/21/15 – 11/29/17	709	370	387	415 (6/1/17)	na	na	Quarterly	Quarterly	*
RE114D2	NT	NT	Y	na	12/16/15 – 12/20/17	736	70	84	84 (12/20/17)	na	na	Quarterly	Quarterly	*
RE114D3	NT	NT	Y	na	12/16/15 – 12/20/17	736	43	51.2	51.2 (12/20/17)	na	na	Quarterly	Quarterly	*
RE117D1	NT	NT	Y	na	6/1/15 – 12/13/17	926	7.8	13	21.3 (5/16/2016)	na	na	Quarterly	Quarterly	*
RE120D1	Decreasing	Decreasing	na	-0.00036	12/12/14 – 12/12/17	1095	1300	990	1400 (9/1/16)	513.2	40.24	Quarterly	Quarterly	*
RE120D2	Decreasing	Decreasing	na	-0.00023	12/12/14 – 12/12/17	1095	900	710	1000 (9/1/16)	466.6	59.03	Quarterly	Quarterly	*
RE120D3	NT	NT	Y	na	12/12/14 – 12/12/17	1096	3.4	28	120 (9/29/15)	na	na	Quarterly	Quarterly	*
RE121D1	Increasing	NT	na	0.01261	12/21/15 – 12/5/17	731	29	33.8	33.8 (12/5/17)	45.8	na	Quarterly	Quarterly	*
RE121D2	Increasing	NT	na	0.51229	12/21/15 – 12/5/17	731	480	754	789 (6/1/17)	1438.1	na	Quarterly	Quarterly	*
RE122D1	Decreasing	Decreasing	na	-0.00025	3/24/15 – 12/6/17	988	570	490	610 (6/22/16)	310.5	50.25	Quarterly	Quarterly	*
RE122D2	Decreasing	Decreasing	na	-0.00065	3/24/15 – 12/6/17	988	4600	3200	5500 (6/22/16)	977.2	27.23	Quarterly	Quarterly	*
RE122D3	NT	NT	Y	na	3/24/15 – 12/6/17	988	6.8	4.2	10 (9/30/15)	na	na	Quarterly	Quarterly	*
RE123D1	NT	NT	na	na	9/29/15 – 12/12/17	805	12	8.4	12 (9/29/15)	0.2	na	Quarterly	Quarterly	*
RE123D2	Increasing	Increasing	na	0.00067	9/29/15 – 12/12/17	805	1.4	2.1	2.1 (12/12/17)	3.7	na	Quarterly	Quarterly	*
RE125D1	Decreasing	NT	na	-0.0004	12/7/16 – 12/11/17	369	180	140	180 (6/2/17)	67.1	22.6	Quarterly	Quarterly	*
RE125D2	Decreasing	Decreasing	na	-0.00045	12/7/16 – 12/11/17	369	240	200	240 (12/7/16)	88.8	22.7	Quarterly	Quarterly	*
RE125D3	NT	NT	Y	na	12/7/16 – 12/11/17	369	150	150	150 (12/11/17)	na	na	Quarterly	Quarterly	*
RE126D1	Increasing	Increasing	na	0.10912	6/21/16 – 12/7/17	534	28	85	85 (12/7/17)	279.5	na	Quarterly	Quarterly	*
RE126D2	Decreasing	Decreasing	na	-0.00031	6/21/16 – 12/7/17	534	520	450	530 (12/6/16)	255.6	39.77	Quarterly	Quarterly	*
RE126D3	NT	NT	Y	na	6/21/16 – 12/7/17	534	4	4.3	4.3 (12/7/17)	na	na	Quarterly	Quarterly	*
RE131D1	Increasing	Increasing	na	0.08957	6/23/16 – 12/7/17	532	96	140	140 (12/7/17)	290.9	na	Quarterly	Quarterly	*
RE131D2	Increasing	NT	na	0.0423	6/23/16 – 12/7/17	532	46	67	67 (12/7/17)	139	na	Quarterly	Quarterly	*
RE131D3	Increasing	Increasing	na	0.00648	6/23/16 – 12/7/17	532	6.1	9.5	9.5 (12/7/17)	21.2	na	Quarterly	Quarterly	*
TT101D	Increasing	Increasing	na	0.00918	3/13/14 – 12/8/17	1366	52	66	74 (12/17/15)	84.7	na	Quarterly	Quarterly	**
TT101D1	Increasing	Increasing	na	0.03409	3/13/14 – 12/8/17	1366	170	170	220 (9/21/16)	170	na	Quarterly	Quarterly	**
TT101D2	Increasing	Increasing	na	0.30067	3/13/14 – 12/8/17	1366	250	840	840 (12/8/17)	1630	na	Quarterly	Quarterly	**

[1] If highest detection occurred on multiple dates, most recent date listed.

[2] Applied Decision Rule: pertains to recommended future sampling; numeric rules defined in text.

* Wells sampled on a frequency determined by other programs (e.g. Public Water Supply Contingency Plan);

** Due to the unique location of this well, it will be sampled annually for the next three years. A re-evaluation of the sampling frequency will be made at that time.

NT = No Trend

ND = Non-Detect Value; for MK analysis replaced ND with ½ the ND value

na = not applicable

Table 2. Wells not MK Tested for TCE
2017 Long Term Monitoring Analysis, NWIRP, Bethpage, NY

Well	Rationale for not MK testing	Applied Decision Rule
HN-40S	94% ND	11
HN-42S	89% ND	11
BPOW1-3	Has been ND since 12/8/10	*
BPOW1-4	100% ND	*
BPOW1-5	100% ND	*
BPOW1-6	100% ND	*
BPOW2-1	Has been ND since 6/14/11	*
BPOW2-2	Has been ND since 12/2/2011	*
BPOW2-3	84% ND	*
BPOW3-1	100% ND	*
BPOW3-2	100% ND	*
BPOW3-3	100% ND	*
BPOW5-1	100% ND	*
BPOW5-2	100% ND	*
BPOW5-3	100% ND	*
BPOW5-4	100% ND	*
BPOW5-5	100% ND	*
BPOW5-6	100% ND	*
BPOW5-7	100% ND	*
BPOW6-1	100% ND	*
BPOW6-2	100% ND	*
BPOW6-3	100% ND	*
BPOW6-4	100% ND	*
BPOW6-5	100% ND	*
BPOW6-6	100% ND	*
TT102D	100% ND	**
TT102D2	83% ND	**
RE104D3	90% ND	*
RE106D1	Less than 4 data points	*
RE106D2	Less than 4 data points	*
RE106D3	Less than 4 data points	*
RE109D1	Less than 4 data points	*
RE109D2	Less than 4 data points	*
RE109D3	Less than 4 data points	*
RE115D1	Less than 4 data points	*
RE115D2	Less than 4 data points	*
RE117D2	87% ND	*
RE118D1	100% ND	*
RE119D1	100% ND	*
RE123D3	100% ND	*
RE124D1	Less than 4 data points	*
RE124D2	Less than 4 data points	*
RE127D1	Less than 4 data points	*
RE127D2	Less than 4 data points	*
RE128D1	Less than 4 data points	*
RE128D2	Less than 4 data points	*

Table 2. Wells not MK Tested for TCE
2017 Long Term Monitoring Analysis, NWIRP, Bethpage, NY

Well	Rationale for not MK testing	Applied Decision Rule
RE129D1	100% ND	*
RE129D2	100% ND	*
RE130D1	Less than 4 data points	*
RE130D2	Less than 4 data points	*
RE133D1	100% ND	*
RE133D2	100% ND	*

Notes:

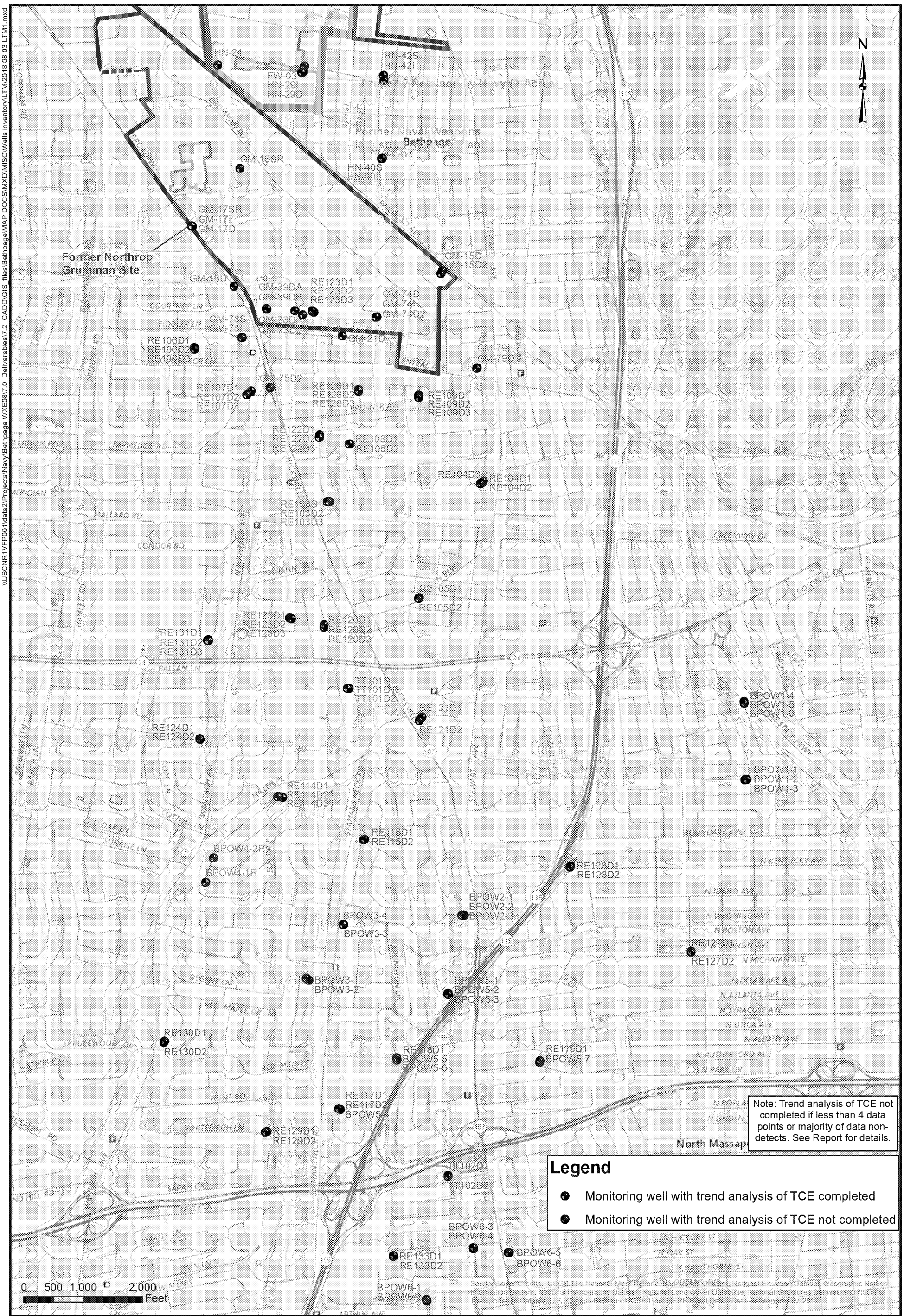
Applied Decision Rule: pertains to recommended future sampling; numeric rules defined in text.

* Wells sampled on a frequency determined by other programs (e.g. Public Water Supply Contingency Plan)

** Due to the unique location of this well, it will be sampled annually for the next three years. A re-evaluation of the sampling frequency will be made at that time.

ND = Non-detect

Figures

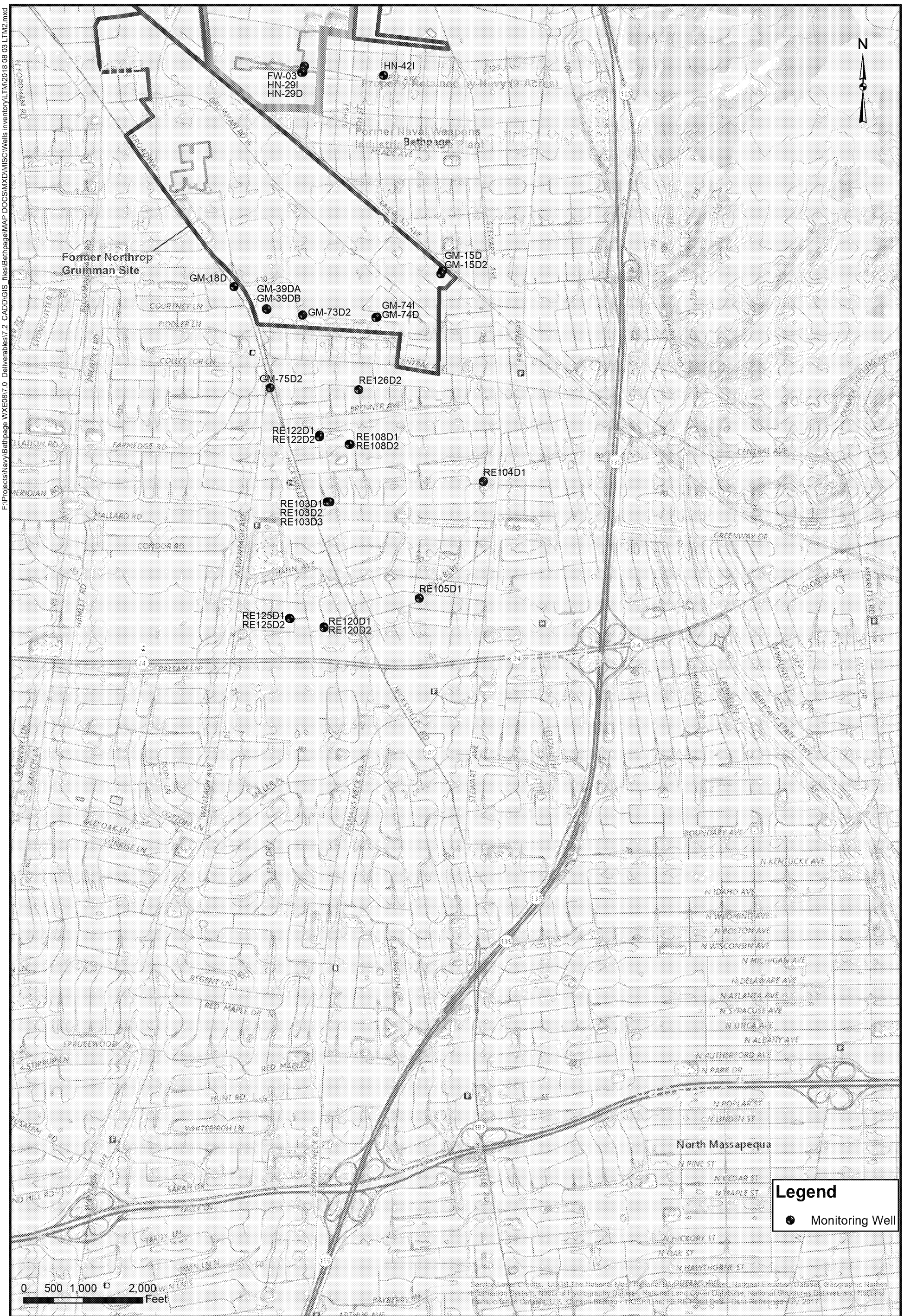


\\USCNR1VFP001\data2\Projects\Navy\Bethpage WXE0817.0 Deliverables\7.2 CADD\GIS_files\Bethpage\MAP DOCS\MXD\MISC\Wells inventory\LTM\2018 08 03 LTM1.mxd

NAVFAC

LOCATION MAP
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NEW YORK

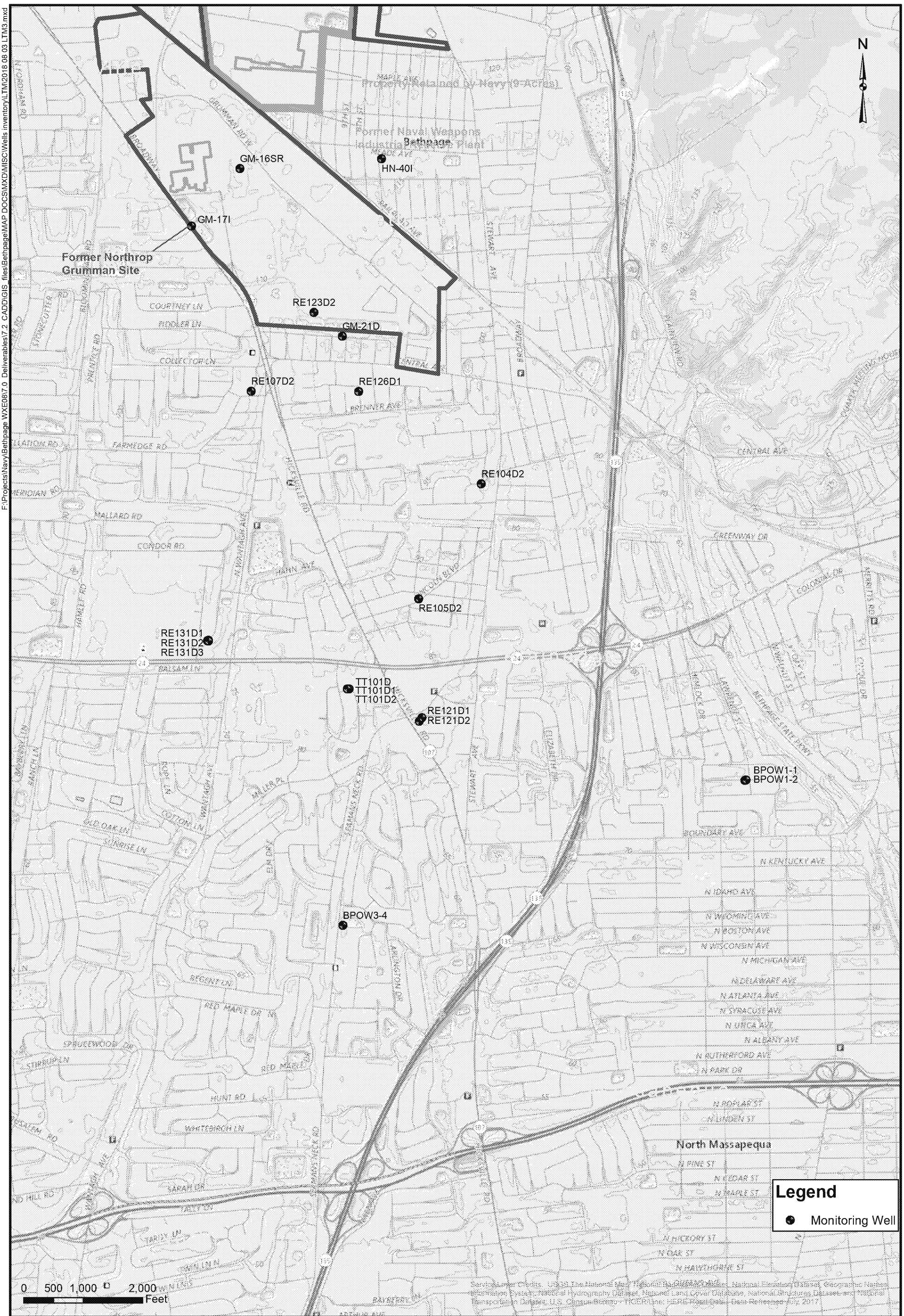
CONTRACT NUMBER	CTO NUMBER
N62470-11-D8013	WE15
APPROVED BY: PS	DATE: 8/3/2018
APPROVED BY: —	DATE: —
FIGURE NO. 1	REV 0



NAVFAC

WELLS WITH DECREASING TREND IN TCE CONCENTRATION
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NEW YORK

CONTRACT NUMBER	CTO NUMBER
N62470-11-D8013	WE15
APPROVED BY: PS	DATE: 8/3/2018
APPROVED BY: —	DATE: —
FIGURE NO. 2	REV 0



WELLS WITH INCREASING TREND IN TCE CONCENTRATION
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NEW YORK

CONTRACT NUMBER	CTO NUMBER
N62470-11-D8013	WE15
APPROVED BY: PS	DATE: 8/3/2018
APPROVED BY: —	DATE: —
FIGURE NO. 3	REV 0

Appendix A
Data Sets Used For Trends and Projections

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Database		
BPOW 1-1	4/23/2004	196	241	3.8	Y				
BPOW 1-1	4/30/2004	196	241	4	Y				
BPOW 1-1	5/6/2004	196	241	3.2	Y				
BPOW 1-1	6/29/2004	196	241	3.4	Y				
BPOW 1-1	11/11/2004	196	241	3.3	Y				
BPOW 1-1	1/4/2005	196	241	3.2	Y				
BPOW 1-1	4/5/2005	196	241	2.5	Y				
BPOW 1-1	6/14/2005	196	241	0.78	Y				
BPOW 1-1	9/13/2005	196	241	2.5	Y				
BPOW 1-1	1/17/2006	196	241	2.5	Y				
BPOW 1-1	3/28/2006	196	241	2	Y				
BPOW 1-1	7/10/2006	196	241	2.3	Y				
BPOW 1-1	10/6/2006	196	241	1.6	Y				
BPOW 1-1	12/1/2006	196	241	2	Y				
BPOW 1-1	3/7/2007	196	241	1.7	Y				
BPOW 1-1	6/18/2007	196	241	1.6	Y				
BPOW 1-1	9/21/2007	196	241	1.3	Y				
BPOW 1-1	12/10/2007	196	241	1.3	Y				
BPOW 1-1	3/31/2008	196	241	1.3	Y				
BPOW 1-1	6/27/2008	196	241	1.4	Y				
BPOW 1-1	8/5/2008	196	241	1.2	Y				
BPOW 1-1	12/18/2008	196	241	1.3	Y				
BPOW 1-1	3/3/2009	196	241	1.4	Y				
BPOW 1-1	5/19/2009	196	241	1.4	Y				
BPOW 1-1	8/6/2009	196	241	1.2	Y				
BPOW 1-1	11/11/2009	196	241	1.3	Y				
BPOW 1-1	1/21/2010	196	241	1.4	Y				
BPOW 1-1	4/6/2010	196	241	1.1	Y				
BPOW 1-1	7/20/2010	196	241	0.86	Y				
BPOW 1-1	12/16/2010	196	241	0.89	Y				
BPOW 1-1	2/9/2011	196	241	1.1	Y				
BPOW 1-1	5/23/2011	196	241	1.2	Y				
BPOW 1-1	8/5/2011	196	241	0.94	Y				
BPOW 1-1	11/30/2011	196	241	1.1	Y				
BPOW 1-1	2/21/2012	196	241	1.1	Y				
BPOW 1-1	5/1/2012	196	241	1.1	Y		5/1/2012	1.1	Y
BPOW 1-1	8/20/2012	196	241	0.95	Y		8/20/2012	0.95	Y
BPOW 1-1	11/29/2012	196	241	0.9	Y		11/29/2012	0.9	Y
BPOW 1-1	2/6/2013	196	241	0.88	Y		2/6/2013	0.88	Y
BPOW 1-1	5/14/2013	196	241	0.82	Y		5/14/2013	0.82	Y
BPOW 1-1	8/14/2013	196	241	0.86	Y		8/14/2013	0.86	Y
BPOW 1-1	11/25/2013	196	241	0.9	Y		11/25/2013	0.9	Y
BPOW 1-1	2/11/2014	196	241	0.9	Y		2/11/2014	0.9	Y
BPOW 1-1	4/17/2014	196	241	0.86	Y		4/17/2014	0.86	Y
BPOW 1-1	8/4/2014	196	241	0.84	Y		8/4/2014	0.84	Y
BPOW 1-1	12/9/2014	196	241	1.00	Y		12/9/2014	1.00	Y
BPOW 1-1	2/4/2015	196	241	1.1	Y		2/4/2015	1.1	Y
BPOW 1-1	5/27/2015	196	241	0.97	Y		5/27/2015	0.97	Y
BPOW 1-1	8/11/2015	196	241	1.10	Y		8/11/2015	1.10	Y
BPOW 1-1	11/2/2015	196	241	1.1	Y		11/2/2015	1.1	Y
BPOW 1-1	6/8/2016	196	241	1.1	Y		6/8/2016	1.1	Y
BPOW 1-1	12/1/2016	196	241	1.2	Y		12/1/2016	1.2	Y
BPOW 1-1	6/19/2017	196	241	1	Y		6/19/2017	1	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
BPOW 1-2	4/26/2004	310	335	0.5	N				
BPOW 1-2	6/29/2004	310	335	0.5	N				
BPOW 1-2	11/11/2004	310	335	0.5	N				
BPOW 1-2	1/4/2005	310	335	0.5	N				
BPOW 1-2	4/5/2005	310	335	0.5	N				
BPOW 1-2	6/14/2005	310	335	0.5	N				
BPOW 1-2	9/13/2005	310	335	0.5	N				
BPOW 1-2	1/16/2006	310	335	0.5	N				
BPOW 1-2	3/28/2006	310	335	0.5	N				
BPOW 1-2	7/10/2006	310	335	0.5	N				
BPOW 1-2	10/6/2006	310	335	0.5	N				
BPOW 1-2	12/1/2006	310	335	0.5	N				
BPOW 1-2	3/6/2007	310	335	0.5	N				
BPOW 1-2	6/19/2007	310	335	0.5	N				
BPOW 1-2	9/21/2007	310	335	0.5	N				
BPOW 1-2	12/10/2007	310	335	0.5	N				
BPOW 1-2	3/31/2008	310	335	0.5	N				
BPOW 1-2	6/27/2008	310	335	0.5	N				
BPOW 1-2	8/5/2008	310	335	0.5	N				
BPOW 1-2	12/18/2008	310	335	0.5	N				
BPOW 1-2	3/3/2009	310	335	0.5	N				
BPOW 1-2	5/19/2009	310	335	0.5	N				
BPOW 1-2	8/6/2009	310	335	0.5	N				
BPOW 1-2	11/11/2009	310	335	0.5	N				
BPOW 1-2	1/21/2010	310	335	0.5	N				
BPOW 1-2	4/6/2010	310	335	0.5	N				
BPOW 1-2	7/20/2010	310	335	0.5	N				
BPOW 1-2	12/16/2010	310	335	0.5	N				
BPOW 1-2	2/8/2011	310	335	0.5	N				
BPOW 1-2	5/23/2011	310	335	0.25	Y				
BPOW 1-2	8/5/2011	310	335	0.38	Y				
BPOW 1-2	11/30/2011	310	335	0.41	Y				
BPOW 1-2	2/20/2012	310	335	0.33	Y		2/20/2012	0.33	Y
BPOW 1-2	5/1/2012	310	335	0.33	Y		5/1/2012	0.33	Y
BPOW 1-2	8/20/2012	310	335	0.3	Y		8/20/2012	0.3	Y
BPOW 1-2	12/5/2012	310	335	0.4	Y		12/5/2012	0.4	Y
BPOW 1-2	12/11/2012	310	335	0.25	Y		12/11/2012	0.25	Y
BPOW 1-2	2/6/2013	310	335	0.63	Y		2/6/2013	0.63	Y
BPOW 1-2	5/14/2013	310	335	0.33	Y		5/14/2013	0.33	Y
BPOW 1-2	8/15/2013	310	335	0.5	N		8/15/2013	0.25	N
BPOW 1-2	11/22/2013	310	335	0.5	N		11/22/2013	0.25	N
BPOW 1-2	2/11/2014	310	335	0.55	Y		2/11/2014	0.55	Y
BPOW 1-2	4/17/2014	310	335	0.5	N		4/17/2014	0.25	N
BPOW 1-2	8/4/2014	310	335	0.5	N		8/4/2014	0.25	N
BPOW 1-2	12/8/2014	310	335	0.37	Y		12/8/2014	0.37	Y
BPOW 1-2	2/3/2015	310	335	0.62	Y		2/3/2015	0.62	Y
BPOW 1-2	5/27/2015	310	335	0.45	Y		5/27/2015	0.45	Y
BPOW 1-2	8/11/2015	310	335	0.3	Y		8/11/2015	0.3	Y
BPOW 1-2	11/2/2015	310	335	0.23	Y		11/2/2015	0.23	Y
BPOW 1-2	6/7/2016	310	335	0.85	Y		6/7/2016	0.85	Y
BPOW 1-2	12/1/2016	310	335	0.85	Y		12/1/2016	0.85	Y
BPOW 1-2	6/13/2017	310	335	0.88	Y		6/13/2017	0.88	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
BPOW 3-4	12/7/2011	640	690	46	Y		12/7/2011	46	Y
BPOW 3-4	3/8/2012	640	690	45	Y		3/8/2012	45	Y
BPOW 3-4	5/16/2012	640	690	51	Y		5/16/2012	51	Y
BPOW 3-4	9/4/2012	640	690	58	Y		9/4/2012	58	Y
BPOW 3-4	12/28/2012	640	690	59	Y		12/28/2012	59	Y
BPOW 3-4	2/19/2013	640	690	57	Y		2/19/2013	57	Y
BPOW 3-4	5/21/2013	640	690	53	Y		5/21/2013	53	Y
BPOW 3-4	8/26/2013	640	690	64	Y		8/26/2013	64	Y
BPOW 3-4	12/6/2013	640	690	49	Y		12/6/2013	49	Y
BPOW 3-4	2/25/2014	640	690	46	Y		2/25/2014	46	Y
BPOW 3-4	4/22/2014	640	690	50	Y		4/22/2014	50	Y
BPOW 3-4	8/12/2014	640	690	54	Y		8/12/2014	54	Y
BPOW 3-4	11/26/2014	640	690	74.6	Y		11/26/2014	74.6	Y
BPOW 3-4	3/31/2015	640	690	64.2	Y		3/31/2015	64.2	Y
BPOW 3-4	6/9/2015	640	690	52.9	Y		6/9/2015	52.9	Y
BPOW 3-4	8/25/2015	640	690	60.9	Y		8/25/2015	60.9	Y
BPOW 3-4	12/11/2015	640	690	80.7	Y		12/11/2015	80.7	Y
BPOW 3-4	6/22/2016	640	690	63	Y		6/22/2016	63	Y
BPOW 3-4	12/1/2016	640	690	78.8	Y		12/1/2016	78.8	Y
BPOW 3-4	6/14/2017	640	690	77.3	Y		6/14/2017	77.3	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
BPOW 4-1R	12/15/2014	652	692	0.84	Y		12/15/2014	0.84	Y
BPOW 4-1R	3/30/2015	652	692	0.79	Y		3/30/2015	0.79	Y
BPOW 4-1R	6/3/2015	652	692	0.58	Y		6/3/2015	0.58	Y
BPOW 4-1R	8/26/2015	652	692	0.92	Y		8/26/2015	0.92	Y
BPOW 4-1R	11/13/2015	652	692	1	Y		11/13/2015	1	Y
BPOW 4-1R	5/31/2016	652	692	1.1	Y		5/31/2016	1.1	Y
BPOW 4-1R	10/31/2016	652	692	0.57	Y		10/31/2016	0.57	Y
BPOW 4-1R	5/26/2017	652	692	0.84	Y		5/26/2017	0.84	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
BPOW 4-2R	12/15/2014	725	765	0.73	Y		12/15/2014	0.73	Y
BPOW 4-2R	3/27/2015	725	765	0.78	Y		3/27/2015	0.78	Y
BPOW 4-2R	6/3/2015	725	765	0.82	Y		6/3/2015	0.82	Y
BPOW 4-2R	8/24/2015	725	765	1.6	Y		8/24/2015	1.6	Y
BPOW 4-2R	11/12/2015	725	765	1.5	Y		11/12/2015	1.5	Y
BPOW 4-2R	6/1/2016	725	765	1.9	Y		6/1/2016	1.9	Y
BPOW 4-2R	11/3/2016	725	765	0.91	Y		11/3/2016	0.91	Y
BPOW 4-2R	6/20/2017	725	765	0.6	Y		6/20/2017	0.6	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
FW-03	6/28/2000	49	64	2	Y		6/28/2000	2	Y
FW-03	9/27/2000	49	64	3	Y		9/27/2000	3	Y
FW-03	2/1/2001	49	64	14	Y		2/1/2001	14	Y
FW-03	5/31/2001	49	64	28	Y		5/31/2001	28	Y
FW-03	10/4/2001	49	64	27	Y		10/4/2001	27	Y
FW-03	1/3/2002	49	64	33	Y		1/3/2002	33	Y
FW-03	4/11/2002	49	64	19	Y		4/11/2002	19	Y
FW-03	7/9/2002	49	64	16	Y		7/9/2002	16	Y
FW-03	3/20/2003	49	64	6	Y		3/20/2003	6	Y
FW-03	7/21/2003	49	64	2	Y		7/21/2003	2	Y
FW-03	10/14/2003	49	64	3	Y		10/14/2003	3	Y
FW-03	1/7/2004	49	64	1	Y		1/7/2004	1	Y
FW-03	10/6/2004	49	64	4	Y		10/6/2004	4	Y
FW-03	4/12/2005	49	64	3	Y		4/12/2005	3	Y
FW-03	9/20/2005	49	64	3	Y		9/20/2005	3	Y
FW-03	3/14/2006	49	64	4	Y		3/14/2006	4	Y
FW-03	10/5/2006	49	64	3	Y		10/5/2006	3	Y
FW-03	3/6/2007	49	64	5.6	Y		3/6/2007	5.6	Y
FW-03	9/11/2007	49	64	5	N		9/11/2007	2.5	N
FW-03	3/13/2008	49	64	5	Y		3/13/2008	5	Y
FW-03	9/5/2008	49	64	5	N		9/5/2008	2.5	N
FW-03	2/27/2009	49	64	3.4	Y		2/27/2009	3.4	Y
FW-03	8/25/2009	49	64	2.8	Y		8/25/2009	2.8	Y
FW-03	1/29/2010	49	64	2.5	Y		1/29/2010	2.5	Y
FW-03	8/6/2010	49	64	2.3	Y		8/6/2010	2.3	Y
FW-03	5/5/2011	49	64	3.1	Y		5/5/2011	3.1	Y
FW-03	12/28/2011	49	64	3.2	Y		12/28/2011	3.2	Y
FW-03	2/17/2012	49	64	3.4	Y		2/17/2012	3.4	Y
FW-03	6/10/2013	49	64	3.5	Y		6/10/2013	3.5	Y
FW-03	5/19/2014	49	64	4.5	Y		5/19/2014	4.5	Y
FW-03	6/2/2015	49	64	2.4	Y		6/2/2015	2.4	Y
FW-03	4/27/2016	49	64	2.2	Y		4/27/2016	2.2	Y
FW-03	4/20/2017	49	64	0.71	Y		4/20/2017	0.71	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
GM-15D	9/28/2000	332	342	9	Y				
GM-15D	1/30/2001	332	342	13	Y				
GM-15D	4/30/2001	332	342	12	Y				
GM-15D	10/8/2001	332	342	10	Y				
GM-15D	12/19/2001	332	342	11	Y				
GM-15D	3/28/2002	332	342	10	Y				
GM-15D	7/10/2002	332	342	8	Y				
GM-15D	10/8/2002	332	342	9	Y				
GM-15D	1/6/2003	332	342	8	Y				
GM-15D	3/21/2003	332	342	11	Y				
GM-15D	7/29/2003	332	342	6	Y				
GM-15D	10/2/2003	332	342	8	Y				
GM-15D	12/29/2003	332	342	10	Y				
GM-15D	3/17/2004	332	342	8	Y				
GM-15D	7/13/2004	332	342	6	Y				
GM-15D	10/4/2004	332	342	5	Y				
GM-15D	1/7/2005	332	342	4	Y				
GM-15D	3/16/2005	332	342	3	Y				
GM-15D	5/31/2005	332	342	3	Y				
GM-15D	8/19/2005	332	342	2	Y				
GM-15D	12/22/2005	332	342	1	Y				
GM-15D	3/13/2006	332	342	1	Y				
GM-15D	9/20/2006	332	342	1	Y				
GM-15D	2/20/2007	332	342	5	N				
GM-15D	9/12/2007	332	342	5	N				
GM-15D	3/11/2008	332	342	5	N		3/11/2008	0.5	N
GM-15D	8/13/2008	332	342	5	N		8/13/2008	0.5	N
GM-15D	2/27/2009	332	342	1.5	Y		2/27/2009	1.5	Y
GM-15D	7/7/2009	332	342	1.3	Y		7/7/2009	1.3	Y
GM-15D	8/14/2009	332	342	1.2	Y		8/14/2009	1.2	Y
GM-15D	10/23/2009	332	342	1.1	Y		10/23/2009	1.1	Y
GM-15D	1/21/2010	332	342	0.93	Y		1/21/2010	0.93	Y
GM-15D	7/13/2010	332	342	0.76	Y		7/13/2010	0.76	Y
GM-15D	5/6/2011	332	342	0.6	Y		5/6/2011	0.6	Y
GM-15D	12/10/2011	332	342	0.31	Y		12/10/2011	0.31	Y
GM-15D	2/8/2012	332	342	0.51	Y		2/8/2012	0.51	Y
GM-15D	9/12/2012	332	342	0.55	Y		9/12/2012	0.55	Y
GM-15D	5/24/2013	332	342	0.36	Y		5/24/2013	0.36	Y
GM-15D	12/12/2013	332	342	0.39	Y		12/12/2013	0.39	Y
GM-15D	6/4/2014	332	342	0.48	Y		6/4/2014	0.48	Y
GM-15D	10/20/2014	332	342	1	N		10/20/2014	0.5	N
GM-15D	5/7/2015	332	342	0.34	Y		5/7/2015	0.34	Y
GM-15D	6/30/2016	332	342	1	N		6/30/2016	0.5	N
GM-15D	10/26/2016	332	342	1	N		10/26/2016	0.5	N
GM-15D	6/28/2017	332	342	1	N		6/28/2017	0.5	N

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
GM-15D2	10/2/2000			9	Y		10/2/2000	9	Y
GM-15D2	1/30/2001			15	Y		1/30/2001	15	Y
GM-15D2	4/30/2001			13	Y		4/30/2001	13	Y
GM-15D2	10/8/2001			16	Y		10/8/2001	16	Y
GM-15D2	12/19/2001			16	Y		12/19/2001	16	Y
GM-15D2	3/28/2002			17	Y		3/28/2002	17	Y
GM-15D2	7/10/2002			12	Y		7/10/2002	12	Y
GM-15D2	10/2/2002			16	Y		10/2/2002	16	Y
GM-15D2	1/6/2003			13	Y		1/6/2003	13	Y
GM-15D2	3/21/2003			15	Y		3/21/2003	15	Y
GM-15D2	7/29/2003			12	Y		7/29/2003	12	Y
GM-15D2	10/2/2003			13	Y		10/2/2003	13	Y
GM-15D2	1/6/2004			13	Y		1/6/2004	13	Y
GM-15D2	3/17/2004			6	Y		3/17/2004	6	Y
GM-15D2	7/13/2004			12	Y		7/13/2004	12	Y
GM-15D2	10/4/2004			11	Y		10/4/2004	11	Y
GM-15D2	1/7/2005			11	Y		1/7/2005	11	Y
GM-15D2	3/16/2005			11	Y		3/16/2005	11	Y
GM-15D2	5/31/2005			13	Y		5/31/2005	13	Y
GM-15D2	8/19/2005			11	Y		8/19/2005	11	Y
GM-15D2	12/22/2005			12	Y		12/22/2005	12	Y
GM-15D2	3/13/2006			13	Y		3/13/2006	13	Y
GM-15D2	9/13/2006			13	Y		9/13/2006	13	Y
GM-15D2	2/20/2007			11	Y		2/20/2007	11	Y
GM-15D2	9/12/2007			10	Y		9/12/2007	10	Y
GM-15D2	3/11/2008			10	Y		3/11/2008	10	Y
GM-15D2	8/13/2008			10	Y		8/13/2008	10	Y
GM-15D2	2/27/2009			11	Y		2/27/2009	11	Y
GM-15D2	7/7/2009			10	Y		7/7/2009	10	Y
GM-15D2	8/14/2009			10	Y		8/14/2009	10	Y
GM-15D2	10/23/2009			11	Y		10/23/2009	11	Y
GM-15D2	1/21/2010			10	Y		1/21/2010	10	Y
GM-15D2	7/13/2010			10	Y		7/13/2010	10	Y
GM-15D2	5/6/2011			11	Y		5/6/2011	11	Y
GM-15D2	12/10/2011			9.6	Y		12/10/2011	9.6	Y
GM-15D2	2/8/2012			10	Y		2/8/2012	10	Y
GM-15D2	9/12/2012			10	Y		9/12/2012	10	Y
GM-15D2	5/24/2013			11	Y		5/24/2013	11	Y
GM-15D2	12/12/2013			10	Y		12/12/2013	10	Y
GM-15D2	6/4/2014			9.2	Y		6/4/2014	9.2	Y
GM-15D2	10/20/2014			9.5	Y		10/20/2014	9.5	Y
GM-15D2	5/7/2015			9.7	Y		5/7/2015	9.7	Y
GM-15D2	4/13/2016			8.8	Y		4/13/2016	8.8	Y
GM-15D2	10/26/2016			7.7	Y		10/26/2016	7.7	Y
GM-15D2	6/28/2017			10	Y		6/28/2017	10	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
GM-16SR	7/24/2003	60	70	5	N		7/24/2003	2.5	N
GM-16SR	10/8/2003	60	70	5	N		10/8/2003	2.5	N
GM-16SR	1/9/2004	60	70	5	N		1/9/2004	2.5	N
GM-16SR	3/29/2004	60	70	2	Y		3/29/2004	2	Y
GM-16SR	10/1/2004	60	70	5	N		10/1/2004	2.5	N
GM-16SR	4/11/2005	60	70	5	N		4/11/2005	2.5	N
GM-16SR	9/7/2005	60	70	5	Y		9/7/2005	5	Y
GM-16SR	4/10/2006	60	70	4	Y		4/10/2006	4	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
GM-17D	9/29/2000	278	298	10	N				
GM-17D	1/31/2001	278	298	10	N				
GM-17D	5/1/2001	278	298	10	N				
GM-17D	10/2/2001	278	298	10	N				
GM-17D	12/27/2001	278	298	5	N				
GM-17D	4/2/2002	278	298	5	N				
GM-17D	6/18/2002	278	298	5	N				
GM-17D	10/7/2002	278	298	5	N				
GM-17D	12/27/2002	278	298	5	N				
GM-17D	3/28/2003	278	298	5	N				
GM-17D	7/28/2003	278	298	5	N				
GM-17D	9/30/2003	278	298	5	N				
GM-17D	1/14/2004	278	298	5	N				
GM-17D	3/31/2004	278	298	5	N				
GM-17D	7/9/2004	278	298	5	N				
GM-17D	10/29/2004	278	298	5	N				
GM-17D	1/10/2005	278	298	5	N				
GM-17D	3/25/2005	278	298	5	N				
GM-17D	6/7/2005	278	298	5	N				
GM-17D	9/1/2005	278	298	1	Y				
GM-17D	12/20/2005	278	298	5	N				
GM-17D	3/8/2006	278	298	5	N				
GM-17D	9/13/2006	278	298	5	N				
GM-17D	2/9/2007	278	298	0.36	Y		2/9/2007	0.36	Y
GM-17D	9/13/2007	278	298	5	N		9/13/2007	2.5	N
GM-17D	3/7/2008	278	298	5	N		3/7/2008	2.5	N
GM-17D	8/11/2008	278	298	5	N		8/11/2008	2.5	N
GM-17D	2/17/2009	278	298	0.32	Y		2/17/2009	0.32	Y
GM-17D	8/12/2009	278	298	0.47	Y		8/12/2009	0.47	Y
GM-17D	2/17/2010	278	298	0.49	Y		2/17/2010	0.49	Y
GM-17D	7/29/2010	278	298	0.44	Y		7/29/2010	0.44	Y
GM-17D	5/11/2011	278	298	0.54	Y		5/11/2011	0.54	Y
GM-17D	12/21/2011	278	298	0.36	Y		12/21/2011	0.36	Y
GM-17D	2/9/2012	278	298	0.33	Y		2/9/2012	0.33	Y
GM-17D	9/10/2012	278	298	5	N		9/10/2012	2.5	N
GM-17D	6/11/2013	278	298	0.34	Y		6/11/2013	0.34	Y
GM-17D	12/19/2013	278	298	0.28	Y		12/19/2013	0.28	Y
GM-17D	5/5/2014	278	298	0.66	Y		5/5/2014	0.66	Y
GM-17D	10/23/2014	278	298	0.3	Y		10/23/2014	0.3	Y
GM-17D	4/22/2015	278	298	0.33	Y		4/22/2015	0.33	Y
GM-17D	5/2/2016	278	298	0.61	Y		5/2/2016	0.61	Y
GM-17D	10/21/2016	278	298	0.7	Y		10/21/2016	0.7	Y
GM-17D	5/2/2017	278	298	0.83	Y		5/2/2017	0.83	Y

Appendix A
Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK DATASET		
GM-17I	9/29/2000	99.5	119.5	10	N				
GM-17I	1/31/2001	99.5	119.5	10	N				
GM-17I	5/2/2001	99.5	119.5	10	N				
GM-17I	10/2/2001	99.5	119.5	10	N				
GM-17I	12/27/2001	99.5	119.5	5	N				
GM-17I	4/2/2002	99.5	119.5	5	N				
GM-17I	6/18/2002	99.5	119.5	5	N				
GM-17I	10/7/2002	99.5	119.5	5	N				
GM-17I	12/27/2002	99.5	119.5	5	N				
GM-17I	3/28/2003	99.5	119.5	2	Y				
GM-17I	7/28/2003	99.5	119.5	5	N				
GM-17I	9/30/2003	99.5	119.5	5	N				
GM-17I	12/30/2003	99.5	119.5	0.6	Y				
GM-17I	4/6/2004	99.5	119.5	5	N				
GM-17I	7/9/2004	99.5	119.5	5	N				
GM-17I	10/29/2004	99.5	119.5	5	N				
GM-17I	1/10/2005	99.5	119.5	5	N				
GM-17I	3/25/2005	99.5	119.5	5	N				
GM-17I	6/7/2005	99.5	119.5	5	N				
GM-17I	9/1/2005	99.5	119.5	2	Y				
GM-17I	12/20/2005	99.5	119.5	5	N				
GM-17I	3/8/2006	99.5	119.5	5	N				
GM-17I	9/15/2006	99.5	119.5	5	N				
GM-17I	2/9/2007	99.5	119.5	5	N				
GM-17I	9/13/2007	99.5	119.5	5	N				
GM-17I	3/7/2008	99.5	119.5	5	N		3/7/2008	0.50	N
GM-17I	8/11/2008	99.5	119.5	5	N		8/11/2008	0.50	N
GM-17I	2/17/2009	99.5	119.5	5	N		2/17/2009	0.50	N
GM-17I	8/12/2009	99.5	119.5	0.59	Y		8/12/2009	0.59	Y
GM-17I	2/16/2010	99.5	119.5	0.45	Y		2/16/2010	0.45	Y
GM-17I	7/29/2010	99.5	119.5	5	N		7/29/2010	0.50	N
GM-17I	5/11/2011	99.5	119.5	5	N		5/11/2011	0.50	N
GM-17I	12/21/2011	99.5	119.5	5	N		12/21/2011	0.50	N
GM-17I	2/15/2012	99.5	119.5	5	N		2/15/2012	0.50	N
GM-17I	9/10/2012	99.5	119.5	0.45	Y		9/10/2012	0.45	Y
GM-17I	6/11/2013	99.5	119.5	0.86	Y		6/11/2013	0.86	Y
GM-17I	12/19/2013	99.5	119.5	0.72	Y		12/19/2013	0.72	Y
GM-17I	5/5/2014	99.5	119.5	5	N		5/5/2014	0.50	N
GM-17I	10/23/2014	99.5	119.5	0.76	Y		10/23/2014	0.76	Y
GM-17I	4/22/2015	99.5	119.5	1.7	Y		4/22/2015	1.7	Y
GM-17I	5/2/2016	99.5	119.5	0.65	Y		5/2/2016	0.65	Y
GM-17I	10/21/2016	99.5	119.5	0.82	Y		10/21/2016	0.82	Y
GM-17I	5/2/2017	99.5	119.5	1	N		5/2/2017	0.50	N

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
GM-17SR	3/29/2004	60	70	5	N		3/29/2004	2.5	N
GM-17SR	7/2/2004	60	70	5	N		7/2/2004	2.5	N
GM-17SR	9/30/2004	60	70	5	N		9/30/2004	2.5	N
GM-17SR	6/3/2005	60	70	5	N		6/3/2005	2.5	N
GM-17SR	9/7/2005	60	70	0.7	Y		9/7/2005	0.7	Y
GM-17SR	1/23/2006	60	70	5	N		1/23/2006	2.5	N
GM-17SR	3/15/2006	60	70	2.5	N		3/15/2006	2.5	N

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
GM-18D	2/14/2001	290	300	0.7	Y				
GM-18D	6/4/2001	290	300	2	Y				
GM-18D	9/28/2001	290	300	2	Y				
GM-18D	1/10/2002	290	300	1	Y				
GM-18D	4/2/2002	290	300	0.9	Y				
GM-18D	6/21/2002	290	300	3	Y				
GM-18D	10/3/2002	290	300	6	Y				
GM-18D	12/27/2002	290	300	8	Y				
GM-18D	4/8/2003	290	300	11	Y				
GM-18D	7/25/2003	290	300	9	Y				
GM-18D	10/1/2003	290	300	6	Y				
GM-18D	1/14/2004	290	300	5	Y				
GM-18D	3/23/2004	290	300	3	Y				
GM-18D	7/9/2004	290	300	0.8	Y				
GM-18D	10/29/2004	290	300	5	N				
GM-18D	12/29/2004	290	300	6	Y				
GM-18D	3/18/2005	290	300	7	Y				
GM-18D	6/7/2005	290	300	9	Y				
GM-18D	9/26/2005	290	300	9	Y				
GM-18D	1/6/2006	290	300	9	Y				
GM-18D	3/8/2006	290	300	11	Y				
GM-18D	4/11/2006	290	300	12	Y				
GM-18D	9/15/2006	290	300	11	Y				
GM-18D	2/13/2007	290	300	7	Y		2/13/2007	7	Y
GM-18D	9/14/2007	290	300	6.4	Y		9/14/2007	6.4	Y
GM-18D	3/21/2008	290	300	5	N		3/21/2008	2.5	N
GM-18D	8/26/2008	290	300	5	N		8/26/2008	2.5	N
GM-18D	4/1/2009	290	300	1.5	Y		4/1/2009	1.5	Y
GM-18D	8/13/2009	290	300	1	Y		8/13/2009	1	Y
GM-18D	2/17/2010	290	300	3.2	Y		2/17/2010	3.2	Y
GM-18D	7/30/2010	290	300	2	Y		7/30/2010	2	Y
GM-18D	5/11/2011	290	300	1.7	Y		5/11/2011	1.7	Y
GM-18D	12/22/2011	290	300	0.83	Y		12/22/2011	0.83	Y
GM-18D	2/17/2012	290	300	1.1	Y		2/17/2012	1.1	Y
GM-18D	9/10/2012	290	300	1.4	Y		9/10/2012	1.4	Y
GM-18D	6/10/2013	290	300	0.92	Y		6/10/2013	0.92	Y
GM-18D	12/31/2013	290	300	1.3	Y		12/31/2013	1.3	Y
GM-18D	5/1/2014	290	300	1.6	Y		5/1/2014	1.6	Y
GM-18D	10/15/2014	290	300	0.75	Y		10/15/2014	0.75	Y
GM-18D	4/21/2015	290	300	0.87	Y		4/21/2015	0.87	Y
GM-18D	6/14/2016	290	300	0.39	Y		6/14/2016	0.39	Y
GM-18D	10/19/2016	290	300	0.45	Y		10/19/2016	0.45	Y
GM-18D	4/21/2017	290	300	0.52	Y		4/21/2017	0.52	Y

Appendix A
Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
GM-21D	1/10/2002	278	288	0.8	Y				
GM-21D	3/29/2002	278	288	5	N				
GM-21D	6/17/2002	278	288	2	Y				
GM-21D	10/8/2002	278	288	3	Y				
GM-21D	1/8/2003	278	288	2	Y				
GM-21D	3/24/2003	278	288	3	Y				
GM-21D	7/17/2003	278	288	3	Y				
GM-21D	10/2/2003	278	288	2	Y				
GM-21D	12/30/2003	278	288	2	Y				
GM-21D	3/24/2004	278	288	2	Y				
GM-21D	7/8/2004	278	288	1	Y				
GM-21D	10/5/2004	278	288	1	Y				
GM-21D	12/30/2004	278	288	0.8	Y				
GM-21D	3/17/2005	278	288	0.6	Y				
GM-21D	6/6/2005	278	288	2	Y				
GM-21D	8/29/2005	278	288	2	Y				
GM-21D	1/3/2006	278	288	2	Y				
GM-21D	3/7/2006	278	288	2	Y				
GM-21D	7/5/2006	278	288	1	Y				
GM-21D	9/18/2006	278	288	1	Y				
GM-21D	11/20/2006	278	288	2	Y				
GM-21D	2/13/2007	278	288	2.2	Y				
GM-21D	6/1/2007	278	288	5	N				
GM-21D	9/11/2007	278	288	5	N				
GM-21D	12/18/2007	278	288	5	N				
GM-21D	3/3/2008	278	288	5	N				
GM-21D	6/18/2008	278	288	5	N				
GM-21D	8/28/2008	278	288	5	N				
GM-21D	12/15/2008	278	288	5	N				
GM-21D	3/20/2009	278	288	0.69	Y		3/20/2009	0.69	Y
GM-21D	5/17/2009	278	288	0.74	Y		5/17/2009	0.74	Y
GM-21D	8/12/2009	278	288	0.53	Y		8/12/2009	0.53	Y
GM-21D	11/13/2009	278	288	0.67	Y		11/13/2009	0.67	Y
GM-21D	2/8/2010	278	288	0.89	Y		2/8/2010	0.89	Y
GM-21D	4/19/2010	278	288	0.87	Y		4/19/2010	0.87	Y
GM-21D	8/4/2010	278	288	1.2	Y		8/4/2010	1.2	Y
GM-21D	12/13/2010	278	288	1.7	Y		12/13/2010	1.7	Y
GM-21D	5/12/2011	278	288	0.55	Y		5/12/2011	0.55	Y
GM-21D	7/27/2011	278	288	0.5	Y		7/27/2011	0.5	Y
GM-21D	12/12/2011	278	288	0.43	Y		12/12/2011	0.43	Y
GM-21D	2/14/2012	278	288	0.36	Y		2/14/2012	0.36	Y
GM-21D	5/9/2012	278	288	0.43	Y		5/9/2012	0.43	Y
GM-21D	12/3/2012	278	288	2	Y		12/3/2012	2	Y
GM-21D	5/29/2013	278	288	1.8	Y		5/29/2013	1.8	Y
GM-21D	6/3/2014	278	288	0.97	Y		6/3/2014	0.97	Y
GM-21D	4/24/2015	278	288	2.6	Y		4/24/2015	2.6	Y
GM-21D	5/5/2016	278	288	1.7	Y		5/5/2016	1.7	Y
GM-21D	5/3/2017	278	288	1.5	Y		5/3/2017	1.5	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
GM-39DA	11/26/2002			23	Y				
GM-39DA	1/7/2003			21	Y				
GM-39DA	4/9/2003			18	Y				
GM-39DA	7/22/2003			19	Y				
GM-39DA	10/15/2003			21	Y				
GM-39DA	1/20/2004			29	Y				
GM-39DA	3/23/2004			42	Y				
GM-39DA	7/7/2004			25	Y				
GM-39DA	10/7/2004			13	Y				
GM-39DA	12/29/2004			9	Y				
GM-39DA	3/23/2005			9	Y				
GM-39DA	6/3/2005			7	Y				
GM-39DA	8/25/2005			9	Y				
GM-39DA	1/3/2006			10	Y				
GM-39DA	3/24/2006			10	Y				
GM-39DA	9/18/2006			17	Y				
GM-39DA	2/13/2007			17	Y		2/13/2007	17	Y
GM-39DA	9/6/2007			14	Y		9/6/2007	14	Y
GM-39DA	3/18/2008			19	Y		3/18/2008	19	Y
GM-39DA	8/20/2008			13	Y		8/20/2008	13	Y
GM-39DA	3/16/2009			5.1	Y		3/16/2009	5.1	Y
GM-39DA	8/10/2009			6.5	Y		8/10/2009	6.5	Y
GM-39DA	1/29/2010			10	Y		1/29/2010	10	Y
GM-39DA	7/30/2010			5.5	Y		7/30/2010	5.5	Y
GM-39DA	5/9/2011			1.2	Y		5/9/2011	1.2	Y
GM-39DA	12/15/2011			0.69	Y		12/15/2011	0.69	Y
GM-39DA	3/6/2012			0.74	Y		3/6/2012	0.74	Y
GM-39DA	8/28/2012			1.1	Y		8/28/2012	1.1	Y
GM-39DA	6/14/2013			2.8	Y		6/14/2013	2.8	Y
GM-39DA	12/11/2013			3.7	Y		12/11/2013	3.7	Y
GM-39DA	5/9/2014			1.2	Y		5/9/2014	1.2	Y
GM-39DA	10/15/2014			0.66	Y		10/15/2014	0.66	Y
GM-39DA	4/23/2015			1	Y		4/23/2015	1	Y
GM-39DA	5/3/2016			6.1	Y		5/3/2016	6.1	Y
GM-39DA	10/21/2016			3.4	Y		10/21/2016	3.4	Y
GM-39DA	5/3/2017			1.6	Y		5/3/2017	1.6	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
GM-39DB	11/25/2002			110	Y				
GM-39DB	1/7/2003			110	Y				
GM-39DB	4/9/2003			61	Y				
GM-39DB	7/22/2003			41	Y				
GM-39DB	10/15/2003			44	Y				
GM-39DB	1/20/2004			85	Y				
GM-39DB	3/23/2004			75	Y				
GM-39DB	7/7/2004			49	Y				
GM-39DB	10/7/2004			35	Y				
GM-39DB	12/29/2004			46	Y				
GM-39DB	3/25/2005			28	Y				
GM-39DB	6/7/2005			23	Y				
GM-39DB	8/25/2005			21	Y				
GM-39DB	1/6/2006			50	Y				
GM-39DB	3/24/2006			42	Y				
GM-39DB	9/18/2006			63	Y				
GM-39DB	2/28/2007			43	Y		2/28/2007	43	Y
GM-39DB	9/14/2007			27	Y		9/14/2007	27	Y
GM-39DB	3/18/2008			46	Y		3/18/2008	46	Y
GM-39DB	8/20/2008			62	Y		8/20/2008	62	Y
GM-39DB	3/16/2009			68	Y		3/16/2009	68	Y
GM-39DB	8/10/2009			52	Y		8/10/2009	52	Y
GM-39DB	1/29/2010			34	Y		1/29/2010	34	Y
GM-39DB	7/30/2010			66	Y		7/30/2010	66	Y
GM-39DB	5/9/2011			94	Y		5/9/2011	94	Y
GM-39DB	12/15/2011			62	Y		12/15/2011	62	Y
GM-39DB	3/5/2012			64	Y		3/5/2012	64	Y
GM-39DB	8/28/2012			56	Y		8/28/2012	56	Y
GM-39DB	6/14/2013			80	Y		6/14/2013	80	Y
GM-39DB	12/11/2013			70	Y		12/11/2013	70	Y
GM-39DB	5/9/2014			52	Y		5/9/2014	52	Y
GM-39DB	10/15/2014			52.7	Y		10/15/2014	52.7	Y
GM-39DB	4/23/2015			43.9	Y		4/23/2015	43.9	Y
GM-39DB	5/3/2016			21	Y		5/3/2016	21	Y
GM-39DB	10/21/2016			22.5	Y		10/21/2016	22.5	Y
GM-39DB	5/3/2017			34	Y		5/3/2017	34	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
GM-73D	10/18/2002	401	411	780	Y				
GM-73D	11/25/2002	401	411	510	Y				
GM-73D	1/15/2003	401	411	680	Y				
GM-73D	3/25/2003	401	411	520	Y				
GM-73D	7/23/2003	401	411	430	Y				
GM-73D	10/15/2003	401	411	310	Y				
GM-73D	1/15/2004	401	411	260	Y				
GM-73D	3/22/2004	401	411	250	Y				
GM-73D	7/7/2004	401	411	110	Y				
GM-73D	11/8/2004	401	411	86	Y				
GM-73D	1/13/2005	401	411	84	Y				
GM-73D	3/22/2005	401	411	82	Y				
GM-73D	6/2/2005	401	411	74	Y				
GM-73D	8/18/2005	401	411	38	Y				
GM-73D	12/21/2005	401	411	23	Y				
GM-73D	3/20/2006	401	411	26	Y				
GM-73D	9/14/2006	401	411	14	Y				
GM-73D	2/28/2007	401	411	13	Y		2/28/2007	13	Y
GM-73D	9/7/2007	401	411	10	Y		9/7/2007	10	Y
GM-73D	3/18/2008	401	411	6.4	Y		3/18/2008	6.4	Y
GM-73D	8/21/2008	401	411	7.6	Y		8/21/2008	7.6	Y
GM-73D	2/17/2009	401	411	16	Y		2/17/2009	16	Y
GM-73D	8/10/2009	401	411	4.6	Y		8/10/2009	4.6	Y
GM-73D	1/28/2010	401	411	3.3	Y		1/28/2010	3.3	Y
GM-73D	8/3/2010	401	411	5.6	Y		8/3/2010	5.6	Y
GM-73D	5/4/2011	401	411	58	Y		5/4/2011	58	Y
GM-73D	12/17/2011	401	411	59	Y		12/17/2011	59	Y
GM-73D	2/10/2012	401	411	68	Y		2/10/2012	68	Y
GM-73D	8/27/2012	401	411	8.9	Y		8/27/2012	8.9	Y
GM-73D	5/23/2013	401	411	23	Y		5/23/2013	23	Y
GM-73D	12/11/2013	401	411	19	Y		12/11/2013	19	Y
GM-73D	5/9/2014	401	411	11	Y		5/9/2014	11	Y
GM-73D	10/17/2014	401	411	14.2	Y		10/17/2014	14.2	Y
GM-73D	4/17/2015	401	411	11.1	Y		4/17/2015	11.1	Y
GM-73D	6/29/2016	401	411	7.9	Y		6/29/2016	7.9	Y
GM-73D	10/25/2016	401	411	4.1	Y		10/25/2016	4.1	Y
GM-73D	6/15/2017	401	411	4.4	Y		6/15/2017	4.4	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
GM-73D2	10/4/2000	532	552	960	Y				
GM-73D2	2/8/2001	532	552	630	Y				
GM-73D2	6/5/2001	532	552	830	Y				
GM-73D2	10/9/2001	532	552	1100	Y				
GM-73D2	1/4/2002	532	552	940	Y				
GM-73D2	4/4/2002	532	552	830	Y				
GM-73D2	6/19/2002	532	552	840	Y				
GM-73D2	11/22/2002	532	552	1200	Y				
GM-73D2	1/13/2003	532	552	1100	Y				
GM-73D2	3/25/2003	532	552	880	Y				
GM-73D2	7/23/2003	532	552	1100	Y				
GM-73D2	9/29/2003	532	552	830	Y				
GM-73D2	1/13/2004	532	552	1100	Y				
GM-73D2	3/22/2004	532	552	720	Y				
GM-73D2	7/7/2004	532	552	610	Y				
GM-73D2	11/8/2004	532	552	360	Y				
GM-73D2	1/13/2005	532	552	340	Y				
GM-73D2	3/22/2005	532	552	320	Y				
GM-73D2	6/3/2005	532	552	260	Y				
GM-73D2	8/26/2005	532	552	150	Y				
GM-73D2	12/21/2005	532	552	140	Y				
GM-73D2	3/24/2006	532	552	140	Y				
GM-73D2	9/14/2006	532	552	96	Y				
GM-73D2	2/28/2007	532	552	67	Y		2/28/2007	67	Y
GM-73D2	9/7/2007	532	552	72	Y		9/7/2007	72	Y
GM-73D2	3/17/2008	532	552	58	Y		3/17/2008	58	Y
GM-73D2	8/21/2008	532	552	44	Y		8/21/2008	44	Y
GM-73D2	2/17/2009	532	552	40	Y		2/17/2009	40	Y
GM-73D2	8/10/2009	532	552	69	Y		8/10/2009	69	Y
GM-73D2	1/28/2010	532	552	47	Y		1/28/2010	47	Y
GM-73D2	8/3/2010	532	552	53	Y		8/3/2010	53	Y
GM-73D2	5/4/2011	532	552	110	Y		5/4/2011	110	Y
GM-73D2	12/17/2011	532	552	94	Y		12/17/2011	94	Y
GM-73D2	2/10/2012	532	552	93	Y		2/10/2012	93	Y
GM-73D2	8/27/2012	532	552	60	Y		8/27/2012	60	Y
GM-73D2	5/23/2013	532	552	44	Y		5/23/2013	44	Y
GM-73D2	12/11/2013	532	552	29	Y		12/11/2013	29	Y
GM-73D2	5/8/2014	532	552	25	Y		5/8/2014	25	Y
GM-73D2	10/17/2014	532	552	40	Y		10/17/2014	40	Y
GM-73D2	4/17/2015	532	552	46.7	Y		4/17/2015	46.7	Y
GM-73D2	5/6/2016	532	552	33.2	Y		5/6/2016	33.2	Y
GM-73D2	10/25/2016	532	552	37	Y		10/25/2016	37	Y
GM-73D2	4/14/2017	532	552	35.7	Y		4/14/2017	35.7	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
GM-74D	10/6/2000	295	305	64	Y				
GM-74D	2/5/2001	295	305	81	Y				
GM-74D	6/5/2001	295	305	63	Y				
GM-74D	10/9/2001	295	305	35	Y				
GM-74D	1/4/2002	295	305	32	Y				
GM-74D	4/4/2002	295	305	17	Y				
GM-74D	6/19/2002	295	305	15	Y				
GM-74D	10/9/2002	295	305	10	Y				
GM-74D	1/13/2003	295	305	9	Y				
GM-74D	3/25/2003	295	305	7	Y				
GM-74D	7/24/2003	295	305	4	Y				
GM-74D	9/29/2003	295	305	5	Y				
GM-74D	1/13/2004	295	305	4	Y				
GM-74D	3/22/2004	295	305	4	Y				
GM-74D	7/6/2004	295	305	4	Y				
GM-74D	11/1/2004	295	305	3	Y				
GM-74D	1/13/2005	295	305	3	Y				
GM-74D	3/22/2005	295	305	3	Y				
GM-74D	6/2/2005	295	305	4	Y				
GM-74D	8/18/2005	295	305	3	Y				
GM-74D	12/21/2005	295	305	2	Y				
GM-74D	3/20/2006	295	305	3	Y				
GM-74D	9/14/2006	295	305	3	Y				
GM-74D	2/27/2007	295	305	5	N		2/27/2007	2.5	N
GM-74D	9/7/2007	295	305	5	N		9/7/2007	2.5	N
GM-74D	3/17/2008	295	305	5	N		3/17/2008	2.5	N
GM-74D	8/18/2008	295	305	5	N		8/18/2008	2.5	Y
GM-74D	2/17/2009	295	305	2.5	Y		2/17/2009	2.5	Y
GM-74D	8/10/2009	295	305	3.3	Y		8/10/2009	3.3	Y
GM-74D	1/28/2010	295	305	2.6	Y		1/28/2010	2.6	Y
GM-74D	7/14/2010	295	305	2.3	Y		7/14/2010	2.3	Y
GM-74D	5/4/2011	295	305	1.8	Y		5/4/2011	1.8	Y
GM-74D	12/16/2011	295	305	1.7	Y		12/16/2011	1.7	Y
GM-74D	2/10/2012	295	305	1.7	Y		2/10/2012	1.7	Y
GM-74D	8/28/2012	295	305	1.4	Y		8/28/2012	1.4	Y
GM-74D	5/23/2013	295	305	1.6	Y		5/23/2013	1.6	Y
GM-74D	12/9/2013	295	305	1.5	Y		12/9/2013	1.5	Y
GM-74D	5/8/2014	295	305	1	Y		5/8/2014	1	Y
GM-74D	10/17/2014	295	305	0.99	Y		10/17/2014	0.99	Y
GM-74D	4/23/2015	295	305	1	Y		4/23/2015	1	Y
GM-74D	4/13/2016	295	305	1.2	Y		4/13/2016	1.2	Y
GM-74D	10/19/2016	295	305	1.2	Y		10/19/2016	1.2	Y
GM-74D	5/2/2017	295	305	1.3	Y		5/2/2017	1.3	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
GM-74D2	10/5/2000	542	562	5	Y				
GM-74D2	2/8/2001	542	562	4	Y				
GM-74D2	6/5/2001	542	562	4	Y				
GM-74D2	10/9/2001	542	562	3	Y				
GM-74D2	1/4/2002	542	562	3	Y				
GM-74D2	4/4/2002	542	562	2	Y				
GM-74D2	6/19/2002	542	562	4	Y				
GM-74D2	10/9/2002	542	562	8	Y				
GM-74D2	1/13/2003	542	562	8	Y				
GM-74D2	3/25/2003	542	562	8	Y				
GM-74D2	7/24/2003	542	562	8	Y				
GM-74D2	9/29/2003	542	562	10	Y				
GM-74D2	1/13/2004	542	562	8	Y				
GM-74D2	3/22/2004	542	562	8	Y				
GM-74D2	7/6/2004	542	562	9	Y				
GM-74D2	11/1/2004	542	562	9	Y				
GM-74D2	1/13/2005	542	562	8	Y				
GM-74D2	3/22/2005	542	562	8	Y				
GM-74D2	6/2/2005	542	562	9	Y				
GM-74D2	8/18/2005	542	562	9	Y				
GM-74D2	12/21/2005	542	562	9	Y				
GM-74D2	3/20/2006	542	562	12	Y				
GM-74D2	9/15/2006	542	562	9	Y				
GM-74D2	2/27/2007	542	562	7.4	Y		2/27/2007	7.4	Y
GM-74D2	9/7/2007	542	562	7	Y		9/7/2007	7	Y
GM-74D2	3/17/2008	542	562	7.3	Y		3/17/2008	7.3	Y
GM-74D2	8/18/2008	542	562	6.4	Y		8/18/2008	6.4	Y
GM-74D2	2/17/2009	542	562	8.6	Y		2/17/2009	8.6	Y
GM-74D2	8/10/2009	542	562	7.3	Y		8/10/2009	7.3	Y
GM-74D2	1/28/2010	542	562	6.4	Y		1/28/2010	6.4	Y
GM-74D2	7/14/2010	542	562	6.6	Y		7/14/2010	6.6	Y
GM-74D2	5/4/2011	542	562	8.8	Y		5/4/2011	8.8	Y
GM-74D2	12/16/2011	542	562	6.9	Y		12/16/2011	6.9	Y
GM-74D2	2/10/2012	542	562	6.4	Y		2/10/2012	6.4	Y
GM-74D2	8/28/2012	542	562	6.3	Y		8/28/2012	6.3	Y
GM-74D2	5/23/2013	542	562	8.2	Y		5/23/2013	8.2	Y
GM-74D2	12/9/2013	542	562	7	Y		12/9/2013	7	Y
GM-74D2	5/8/2014	542	562	6.3	Y		5/8/2014	6.3	Y
GM-74D2	10/17/2014	542	562	7.2	Y		10/17/2014	7.2	Y
GM-74D2	4/23/2015	542	562	7.2	Y		4/23/2015	7.2	Y
GM-74D2	5/5/2016	542	562	7.2	Y		5/5/2016	7.2	Y
GM-74D2	10/25/2016	542	562	6.9	Y		10/25/2016	6.9	Y
GM-74D2	4/14/2017	542	562	7.8	Y		4/14/2017	7.8	Y

Appendix A
Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK DATASET		
GM-74I	10/5/2000	94	114	10	N				
GM-74I	2/5/2001	94	114	10	N				
GM-74I	6/5/2001	94	114	10	N				
GM-74I	10/9/2001	94	114	10	N				
GM-74I	1/4/2002	94	114	5	N				
GM-74I	4/4/2002	94	114	5	N				
GM-74I	6/19/2002	94	114	5	N				
GM-74I	10/9/2002	94	114	5	N				
GM-74I	1/13/2003	94	114	5	N				
GM-74I	3/25/2003	94	114	5	N				
GM-74I	7/24/2003	94	114	5	N				
GM-74I	9/29/2003	94	114	0.4	Y				
GM-74I	1/13/2004	94	114	5	N				
GM-74I	3/22/2004	94	114	5	N				
GM-74I	7/6/2004	94	114	5	N				
GM-74I	11/1/2004	94	114	5	N				
GM-74I	1/12/2005	94	114	5	N				
GM-74I	3/22/2005	94	114	5	N				
GM-74I	6/2/2005	94	114	5	N				
GM-74I	8/18/2005	94	114	5	N				
GM-74I	12/21/2005	94	114	5	N				
GM-74I	3/20/2006	94	114	5	N				
GM-74I	9/14/2006	94	114	5	N				
GM-74I	2/27/2007	94	114	5	N				
GM-74I	9/7/2007	94	114	5	N				
GM-74I	3/17/2008	94	114	5	N		3/17/2008	2.5	N
GM-74I	8/18/2008	94	114	5	N		8/18/2008	2.5	N
GM-74I	2/17/2009	94	114	5	N		2/17/2009	2.5	N
GM-74I	8/10/2009	94	114	5	N		8/10/2009	2.5	N
GM-74I	1/28/2010	94	114	5	N		1/28/2010	2.5	N
GM-74I	7/14/2010	94	114	5	N		7/14/2010	2.5	N
GM-74I	5/4/2011	94	114	5	N		5/4/2011	2.5	N
GM-74I	12/16/2011	94	114	0.28	Y		12/16/2011	0.28	Y
GM-74I	2/10/2012	94	114	5	N		2/10/2012	2.5	N
GM-74I	8/28/2012	94	114	0.34	Y		8/28/2012	0.34	Y
GM-74I	5/23/2013	94	114	0.35	Y		5/23/2013	0.35	Y
GM-74I	12/9/2013	94	114	0.79	Y		12/9/2013	0.79	Y
GM-74I	5/8/2014	94	114	0.3	Y		5/8/2014	0.3	Y
GM-74I	10/17/2014	94	114	0.63	Y		10/17/2014	0.63	Y
GM-74I	4/21/2015	94	114	0.76	Y		4/21/2015	0.76	Y
GM-74I	4/13/2016	94	114	0.62	Y		4/13/2016	0.62	Y
GM-74I	10/24/2016	94	114	0.73	Y		10/24/2016	0.73	Y
GM-74I	5/2/2017	94	114	0.6	Y		5/2/2017	0.6	Y

Appendix A
Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
GM-75D2	6/6/2001	505	525	1100	Y				
GM-75D2	10/10/2001	505	525	1400	Y				
GM-75D2	12/26/2001	505	525	1300	Y				
GM-75D2	4/10/2002	505	525	1000	Y				
GM-75D2	7/11/2002	505	525	1400	Y				
GM-75D2	10/3/2002	505	525	1500	Y				
GM-75D2	1/9/2003	505	525	980	Y				
GM-75D2	3/24/2003	505	525	960	Y				
GM-75D2	8/1/2003	505	525	1100	Y				
GM-75D2	9/30/2003	505	525	890	Y				
GM-75D2	1/30/2004	505	525	880	Y				
GM-75D2	3/30/2004	505	525	890	Y				
GM-75D2	7/16/2004	505	525	730	Y				
GM-75D2	11/15/2004	505	525	550	Y				
GM-75D2	1/11/2005	505	525	410	Y				
GM-75D2	4/16/2005	505	525	330	Y				
GM-75D2	6/9/2005	505	525	320	Y				
GM-75D2	9/9/2005	505	525	380	Y				
GM-75D2	1/12/2006	505	525	190	Y				
GM-75D2	3/16/2006	505	525	200	Y				
GM-75D2	9/22/2006	505	525	360	Y				
GM-75D2	11/27/2006	505	525	380	Y				
GM-75D2	3/1/2007	505	525	280	Y				
GM-75D2	6/8/2007	505	525	240	Y				
GM-75D2	9/27/2007	505	525	250	Y				
GM-75D2	12/20/2007	505	525	220	Y				
GM-75D2	3/14/2008	505	525	200	Y				
GM-75D2	6/25/2008	505	525	180	Y				
GM-75D2	8/19/2008	505	525	190	Y				
GM-75D2	12/17/2008	505	525	190	Y				
GM-75D2	3/17/2009	505	525	140	Y				
GM-75D2	5/18/2009	505	525	130	Y				
GM-75D2	8/21/2009	505	525	120	Y		8/21/2009	120	Y
GM-75D2	11/6/2009	505	525	110	Y		11/6/2009	110	Y
GM-75D2	2/3/2010	505	525	82	Y		2/3/2010	82	Y
GM-75D2	4/15/2010	505	525	86	Y		4/15/2010	86	Y
GM-75D2	8/10/2010	505	525	120	Y		8/10/2010	120	Y
GM-75D2	12/15/2010	505	525	130	Y		12/15/2010	130	Y
GM-75D2	5/18/2011	505	525	87	Y		5/18/2011	87	Y
GM-75D2	7/27/2011	505	525	67	Y		7/27/2011	67	Y
GM-75D2	12/23/2011	505	525	44	Y		12/23/2011	44	Y
GM-75D2	3/9/2012	505	525	35	Y		3/9/2012	35	Y
GM-75D2	5/16/2012	505	525	37	Y		5/16/2012	37	Y
GM-75D2	9/6/2012	505	525	35	Y		9/6/2012	35	Y
GM-75D2	12/14/2012	505	525	28	Y		12/14/2012	28	Y
GM-75D2	6/12/2013	505	525	39	Y		6/12/2013	39	Y
GM-75D2	12/19/2013	505	525	38	Y		12/19/2013	38	Y
GM-75D2	6/2/2014	505	525	36	Y		6/2/2014	36	Y
GM-75D2	6/4/2015	505	525	23.9	Y		6/4/2015	23.9	Y
GM-75D2	5/10/2016	505	525	18.8	Y		5/10/2016	18.8	Y
GM-75D2	12/5/2016	505	525	31.4	Y		12/5/2016	31.4	Y
GM-75D2	6/12/2017	505	525	26.4	Y		6/12/2017	26.4	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK DATASET		
GM-78I	6/4/2001	89	109	0.8	Y				
GM-78I	9/27/2001	89	109	3	Y				
GM-78I	1/9/2002	89	109	7	Y				
GM-78I	4/9/2002	89	109	5	Y				
GM-78I	6/18/2002	89	109	4	Y				
GM-78I	10/10/2002	89	109	5	Y				
GM-78I	12/19/2002	89	109	4	Y				
GM-78I	3/19/2003	89	109	4	Y				
GM-78I	7/15/2003	89	109	3	Y				
GM-78I	10/16/2003	89	109	2	Y				
GM-78I	1/8/2004	89	109	0.8	Y				
GM-78I	3/19/2004	89	109	5	N				
GM-78I	7/2/2004	89	109	5	N				
GM-78I	9/30/2004	89	109	0.6	Y				
GM-78I	1/12/2005	89	109	2	Y				
GM-78I	4/13/2005	89	109	1	Y				
GM-78I	6/1/2005	89	109	2	Y				
GM-78I	9/7/2005	89	109	2	Y				
GM-78I	12/23/2005	89	109	0.7	Y				
GM-78I	3/15/2006	89	109	0.9	Y		3/15/2006	0.9	Y
GM-78I	9/26/2006	89	109	0.6	Y		9/26/2006	0.6	Y
GM-78I	2/8/2007	89	109	0.69	Y		2/8/2007	0.69	Y
GM-78I	9/25/2007	89	109	5	N		9/25/2007	2.5	N
GM-78I	3/12/2008	89	109	5	N		3/12/2008	2.5	N
GM-78I	8/14/2008	89	109	5	N		8/14/2008	2.5	N
GM-78I	2/24/2009	89	109	5	N		2/24/2009	2.5	N
GM-78I	8/17/2009	89	109	5	N		8/17/2009	2.5	N
GM-78I	1/29/2010	89	109	5	N		1/29/2010	2.5	N
GM-78I	7/16/2010	89	109	5	N		7/16/2010	2.5	N
GM-78I	5/5/2011	89	109	5	N		5/5/2011	2.5	N
GM-78I	12/9/2011	89	109	5	N		12/9/2011	2.5	N
GM-78I	2/16/2012	89	109	5	N		2/16/2012	2.5	N
GM-78I	5/29/2013	89	109	0.31	Y		5/29/2013	0.31	Y
GM-78I	5/15/2014	89	109	0.58	Y		5/15/2014	0.58	Y
GM-78I	6/1/2015	89	109	0.39	Y		6/1/2015	0.39	Y
GM-78I	4/28/2016	89	109	0.38	Y		4/28/2016	0.38	Y
GM-78I	5/5/2017	89	109	0.44	Y		5/5/2017	0.44	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
GM-78S	6/4/2001			1					
GM-78S	9/27/2001			2					
GM-78S	1/8/2002			6					
GM-78S	4/9/2002			7					
GM-78S	6/18/2002			8					
GM-78S	10/10/2002			6					
GM-78S	12/19/2002			5					
GM-78S	3/19/2003			3					
GM-78S	7/15/2003			3					
GM-78S	10/16/2003			1					
GM-78S	1/8/2004			5	N				
GM-78S	3/19/2004			5	N				
GM-78S	7/2/2004			5	N				
GM-78S	9/30/2004			0.7	Y				
GM-78S	12/28/2004			0.7	Y				
GM-78S	4/13/2005			0.9	Y				
GM-78S	6/1/2005			1	Y				
GM-78S	9/7/2005			5	N				
GM-78S	12/23/2005			5	N				
GM-78S	3/15/2006			0.3	Y		3/15/2006	0.3	Y
GM-78S	9/26/2006			0.9	Y		9/26/2006	0.9	Y
GM-78S	2/8/2007			1.1	Y		2/8/2007	1.1	Y
GM-78S	9/25/2007			5	N		9/25/2007	2.5	N
GM-78S	3/12/2008			5	N		3/12/2008	2.5	N
GM-78S	8/14/2008			5	N		8/14/2008	2.5	N
GM-78S	2/24/2009			5	N		2/24/2009	2.5	N
GM-78S	8/17/2009			5	N		8/17/2009	2.5	N
GM-78S	1/29/2010			0.28	Y		1/29/2010	0.28	Y
GM-78S	7/16/2010			0.33	Y		7/16/2010	0.33	Y
GM-78S	5/5/2011			5	N		5/5/2011	2.5	N
GM-78S	12/9/2011			5	N		12/9/2011	2.5	N
GM-78S	2/16/2012			5	N		2/16/2012	2.5	N
GM-78S	5/29/2013			5	N		5/29/2013	2.5	N
GM-78S	5/15/2014			5	N		5/15/2014	2.5	N
GM-78S	6/1/2015			0.57	Y		6/1/2015	0.57	Y
GM-78S	4/28/2016			0.45	Y		4/28/2016	0.45	Y
GM-78S	6/22/2017			0.43	Y		6/22/2017	0.43	Y

Appendix A
Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
GM-79D	2/14/2001	280	290	48	Y				
GM-79D	5/3/2001	280	290	49	Y				
GM-79D	10/11/2001	280	290	63	Y				
GM-79D	1/9/2002	280	290	80	Y				
GM-79D	4/9/2002	280	290	64	Y				
GM-79D	7/11/2002	280	290	91	Y				
GM-79D	10/4/2002	280	290	96	Y				
GM-79D	1/14/2003	280	290	110	Y				
GM-79D	4/7/2003	280	290	110	Y				
GM-79D	8/1/2003	280	290	97	Y				
GM-79D	10/3/2003	280	290	92	Y				
GM-79D	12/30/2003	280	290	75	Y				
GM-79D	4/6/2004	280	290	76	Y				
GM-79D	7/8/2004	280	290	65	Y				
GM-79D	10/8/2004	280	290	31	Y				
GM-79D	12/28/2004	280	290	62	Y				
GM-79D	3/23/2005	280	290	68	Y				
GM-79D	6/7/2005	280	290	79	Y				
GM-79D	9/1/2005	280	290	54	Y				
GM-79D	1/6/2006	280	290	58	Y				
GM-79D	3/7/2006	280	290	57	Y				
GM-79D	7/6/2006	280	290	44	Y				
GM-79D	9/12/2006	280	290	55	Y				
GM-79D	11/21/2006	280	290	47	Y				
GM-79D	2/12/2007	280	290	38	Y				
GM-79D	6/5/2007	280	290	38	Y				
GM-79D	9/6/2007	280	290	33	Y				
GM-79D	12/18/2007	280	290	34	Y				
GM-79D	3/21/2008	280	290	39	Y				
GM-79D	6/18/2008	280	290	47	Y				
GM-79D	8/22/2008	280	290	46	Y				
GM-79D	12/15/2008	280	290	48	Y				
GM-79D	3/20/2009	280	290	48	Y				
GM-79D	5/14/2009	280	290	37	Y				
GM-79D	8/17/2009	280	290	38	Y				
GM-79D	11/5/2009	280	290	33	Y		11/5/2009	33	Y
GM-79D	1/22/2010	280	290	37	Y		1/22/2010	37	Y
GM-79D	4/13/2010	280	290	34	Y		4/13/2010	34	Y
GM-79D	7/16/2010	280	290	35	Y		7/16/2010	35	Y
GM-79D	12/13/2010	280	290	31	Y		12/13/2010	31	Y
GM-79D	5/3/2011	280	290	5	N		5/3/2011	2.5	N
GM-79D	7/26/2011	280	290	26	Y		7/26/2011	26	Y
GM-79D	12/26/2011	280	290	26	Y		12/26/2011	26	Y
GM-79D	2/14/2012	280	290	5	N		2/14/2012	2.5	N
GM-79D	5/18/2012	280	290	26	Y		5/18/2012	26	Y
GM-79D	9/5/2012	280	290	18	Y		9/5/2012	18	Y
GM-79D	12/31/2012	280	290	27	Y		12/31/2012	27	Y
GM-79D	5/28/2013	280	290	19	Y		5/28/2013	19	Y
GM-79D	12/17/2013	280	290	13	Y		12/17/2013	13	Y
GM-79D	5/14/2014	280	290	18	Y		5/14/2014	18	Y
GM-79D	10/24/2014	280	290	15.5	Y		10/24/2014	15.5	Y
GM-79D	6/13/2015	280	290	18	Y		6/13/2015	18	Y
GM-79D	4/13/2016	280	290	25.9	Y		4/13/2016	25.9	Y
GM-79D	12/9/2016	280	290	35.7	Y		12/9/2016	35.7	Y
GM-79D	6/28/2017	280	290	46.9	Y		6/28/2017	46.9	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK DATASET		
GM-79I	2/14/2001	170	180	6	Y				
GM-79I	5/7/2001	170	180	3	Y				
GM-79I	10/11/2001	170	180	2	Y				
GM-79I	1/9/2002	170	180	1	Y				
GM-79I	4/9/2002	170	180	1	Y				
GM-79I	7/12/2002	170	180	1	Y				
GM-79I	10/4/2002	170	180	1	Y				
GM-79I	1/14/2003	170	180	3	Y				
GM-79I	4/7/2003	170	180	1	Y				
GM-79I	8/1/2003	170	180	5	N				
GM-79I	10/3/2003	170	180	5	N				
GM-79I	12/30/2003	170	180	0.4	Y				
GM-79I	4/6/2004	170	180	5	N				
GM-79I	7/8/2004	170	180	2	Y				
GM-79I	10/8/2004	170	180	5	N				
GM-79I	12/28/2004	170	180	5	N				
GM-79I	3/23/2005	170	180	5	N				
GM-79I	6/7/2005	170	180	5	N				
GM-79I	9/1/2005	170	180	0.5	Y				
GM-79I	1/6/2006	170	180	5	N				
GM-79I	3/7/2006	170	180	5	N				
GM-79I	7/6/2006	170	180	5	N				
GM-79I	9/12/2006	170	180	5	N				
GM-79I	11/21/2006	170	180	5	N				
GM-79I	2/12/2007	170	180	5	N				
GM-79I	6/5/2007	170	180	5	N				
GM-79I	9/6/2007	170	180	5	N				
GM-79I	12/18/2007	170	180	5	N				
GM-79I	3/21/2008	170	180	5	N				
GM-79I	6/18/2008	170	180	5	N				
GM-79I	8/22/2008	170	180	5	N				
GM-79I	12/15/2008	170	180	5	N				
GM-79I	3/20/2009	170	180	5	N				
GM-79I	5/14/2009	170	180	5	N				
GM-79I	8/17/2009	170	180	5	N				
GM-79I	11/5/2009	170	180	5	N		11/5/2009	0.5	N
GM-79I	1/22/2010	170	180	5	N		1/22/2010	0.5	N
GM-79I	4/13/2010	170	180	5	N		4/13/2010	0.5	N
GM-79I	7/16/2010	170	180	5	N		7/16/2010	0.5	N
GM-79I	12/13/2010	170	180	5	N		12/13/2010	0.5	N
GM-79I	5/3/2011	170	180	28	Y		5/3/2011	28	Y
GM-79I	7/26/2011	170	180	5	N		7/26/2011	0.5	N
GM-79I	12/26/2011	170	180	5	N		12/26/2011	0.5	N
GM-79I	2/14/2012	170	180	30	Y		2/14/2012	30	Y
GM-79I	5/12/2012	170	180	5	N		5/12/2012	0.5	N
GM-79I	9/5/2012	170	180	5	N		9/5/2012	0.5	N
GM-79I	12/31/2012	170	180	5	N		12/31/2012	0.5	N
GM-79I	5/28/2013	170	180	0.23	Y		5/28/2013	0.23	Y
GM-79I	12/17/2013	170	180	0.33	Y		12/17/2013	0.33	Y
GM-79I	5/14/2014	170	180	0.31	Y		5/14/2014	0.31	Y
GM-79I	10/24/2014	170	180	1	N		10/24/2014	0.5	N
GM-79I	4/22/2015	170	180	1	N		4/22/2015	0.5	N
GM-79I	4/13/2016	170	180	1	N		4/13/2016	0.5	N
GM-79I	6/28/2017	170	180	0.45	Y		6/28/2017	0.45	Y

Appendix A
Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK dataset		
HN-24I	4/22/1999	148	158	190	Y				
HN-24I	12/2/1999	148	158	230	Y				
HN-24I	3/22/2000	148	158	270	Y				
HN-24I	6/28/2000	148	158	180	Y				
HN-24I	9/27/2000	148	158	180	Y				
HN-24I	2/1/2001	148	158	200	Y				
HN-24I	5/31/2001	148	158	180	Y				
HN-24I	10/4/2001	148	158	160	Y				
HN-24I	1/3/2002	148	158	160	Y				
HN-24I	4/11/2002	148	158	210	Y				
HN-24I	7/9/2002	148	158	160	Y				
HN-24I	10/15/2002	148	158	290	Y				
HN-24I	12/20/2002	148	158	190	Y				
HN-24I	3/20/2003	148	158	170	Y				
HN-24I	7/21/2003	148	158	110	Y				
HN-24I	10/14/2003	148	158	100	Y				
HN-24I	1/7/2004	148	158	62	Y				
HN-24I	3/18/2004	148	158	62	Y				
HN-24I	10/6/2004	148	158	36	Y		10/6/2004	36	Y
HN-24I	4/12/2005	148	158	5	N		4/12/2005	2.5	N
HN-24I	9/20/2005	148	158	22	Y		9/20/2005	22	Y
HN-24I	3/14/2006	148	158	37	Y		3/14/2006	37	Y
HN-24I	9/29/2006	148	158	15	Y		9/29/2006	15	Y
HN-24I	2/12/2007	148	158	11	Y		2/12/2007	11	Y
HN-24I	3/13/2008	148	158	15	Y		3/13/2008	15	Y
HN-24I	9/5/2008	148	158	19	Y		9/5/2008	19	Y
HN-24I	2/27/2009	148	158	21	Y		2/27/2009	21	Y
HN-24I	8/25/2009	148	158	22	Y		8/25/2009	22	Y
HN-24I	8/6/2010	148	158	32	Y		8/6/2010	32	Y
HN-24I	5/17/2011	148	158	35	Y		5/17/2011	35	Y
HN-24I	12/28/2011	148	158	28	Y		12/28/2011	28	Y
HN-24I	2/17/2012	148	158	27	Y		2/17/2012	27	Y
HN-24I	6/10/2013	148	158	16	Y		6/10/2013	16	Y
HN-24I	5/19/2014	148	158	18	Y		5/19/2014	18	Y
HN-24I	6/2/2015	148	158	18.9	Y		6/2/2015	18.9	Y
HN-24I	4/28/2016	148	158	15	Y		4/28/2016	15	Y
HN-24I	4/20/2017	148	158	11.2	Y		4/20/2017	11.2	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
HN-29D	12/2/1999	210	220	1	Y				
HN-29D	3/22/2000	210	220	10	N				
HN-29D	7/6/2000	210	220	0.9	Y				
HN-29D	9/27/2000	210	220	1	Y		9/27/2000	1	Y
HN-29D	2/1/2001	210	220	10	N		2/1/2001	2.5	N
HN-29D	5/31/2001	210	220	10	N		5/31/2001	2.5	N
HN-29D	10/4/2001	210	220	2	Y		10/4/2001	2	Y
HN-29D	1/3/2002	210	220	1	Y		1/3/2002	1	Y
HN-29D	4/11/2002	210	220	1	Y		4/11/2002	1	Y
HN-29D	7/9/2002	210	220	1	Y		7/9/2002	1	Y
HN-29D	10/15/2002	210	220	1	Y		10/15/2002	1	Y
HN-29D	12/20/2002	210	220	2	Y		12/20/2002	2	Y
HN-29D	3/20/2003	210	220	1	Y		3/20/2003	1	Y
HN-29D	7/21/2003	210	220	1	Y		7/21/2003	1	Y
HN-29D	10/14/2003	210	220	0.9	Y		10/14/2003	0.9	Y
HN-29D	1/7/2004	210	220	1	Y		1/7/2004	1	Y
HN-29D	3/18/2004	210	220	0.6	Y		3/18/2004	0.6	Y
HN-29D	10/6/2004	210	220	0.8	Y		10/6/2004	0.8	Y
HN-29D	4/14/2005	210	220	0.7	Y		4/14/2005	0.7	Y
HN-29D	9/20/2005	210	220	0.6	Y		9/20/2005	0.6	Y
HN-29D	3/14/2006	210	220	5	N		3/14/2006	2.5	N

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
HN-29I	6/28/2000	120	130	2	Y				
HN-29I	9/27/2000	120	130	2	Y		9/27/2000	2	Y
HN-29I	2/1/2001	120	130	2	Y		2/1/2001	2	Y
HN-29I	5/31/2001	120	130	10	N		5/31/2001	2.5	N
HN-29I	10/4/2001	120	130	1	Y		10/4/2001	1	Y
HN-29I	1/3/2002	120	130	2	Y		1/3/2002	2	Y
HN-29I	4/11/2002	120	130	1	Y		4/11/2002	1	Y
HN-29I	7/9/2002	120	130	1	Y		7/9/2002	1	Y
HN-29I	10/15/2002	120	130	5	N		10/15/2002	2.5	N
HN-29I	12/20/2002	120	130	5	N		12/20/2002	2.5	N
HN-29I	3/20/2003	120	130	0.7	Y		3/20/2003	0.7	Y
HN-29I	7/21/2003	120	130	5	N		7/21/2003	2.5	N
HN-29I	10/14/2003	120	130	1	Y		10/14/2003	1	Y
HN-29I	1/7/2004	120	130	2	Y		1/7/2004	2	Y
HN-29I	3/18/2004	120	130	1	Y		3/18/2004	1	Y
HN-29I	10/6/2004	120	130	0.6	Y		10/6/2004	0.6	Y
HN-29I	4/12/2005	120	130	5	N		4/12/2005	2.5	N
HN-29I	9/20/2005	120	130	1	Y		9/20/2005	1	Y
HN-29I	3/14/2006	120	130	0.9	Y		3/14/2006	0.9	Y
HN-29I	12/1/2010	120	130	0.57	Y		12/1/2010	0.57	Y
HN-29I	3/2/2011	120	130	0.4	Y		3/2/2011	0.4	Y
HN-29I	1/19/2012	120	130	5	N		1/19/2012	2.5	N
HN-29I	11/14/2012	120	130	0.26	Y		11/14/2012	0.26	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
HN-40I	2/13/2001	108	118	2	Y				
HN-40I	5/4/2001	108	118	4	Y				
HN-40I	10/5/2001	108	118	4	Y				
HN-40I	1/7/2002	108	118	5	Y				
HN-40I	3/25/2002	108	118	5	Y				
HN-40I	6/13/2002	108	118	6	Y				
HN-40I	10/14/2002	108	118	7	Y				
HN-40I	12/18/2002	108	118	8	Y				
HN-40I	3/18/2003	108	118	11	Y				
HN-40I	7/14/2003	108	118	10	Y				
HN-40I	10/13/2003	108	118	35	Y				
HN-40I	12/22/2003	108	118	35	Y				
HN-40I	3/16/2004	108	118	34	Y				
HN-40I	9/28/2004	108	118	20	Y				
HN-40I	3/14/2005	108	118	4	Y				
HN-40I	9/21/2005	108	118	4	Y				
HN-40I	3/17/2006	108	118	8	Y				
HN-40I	4/13/2006	108	118	3	Y		4/13/2006	3	Y
HN-40I	9/27/2006	108	118	0.5	Y		9/27/2006	0.5	Y
HN-40I	2/7/2007	108	118	5	N		2/7/2007	0.5	N
HN-40I	9/24/2007	108	118	5	N		9/24/2007	0.5	N
HN-40I	8/12/2008	108	118	5	N		8/12/2008	0.5	N
HN-40I	2/23/2009	108	118	5	N		2/23/2009	0.5	N
HN-40I	7/14/2009	108	118	5	N		7/14/2009	0.5	N
HN-40I	8/24/2009	108	118	5	N		8/24/2009	0.5	N
HN-40I	10/22/2009	108	118	5	N		10/22/2009	0.5	N
HN-40I	1/28/2010	108	118	5	N		1/28/2010	0.5	N
HN-40I	7/15/2010	108	118	1.2	Y		7/15/2010	1.2	Y
HN-40I	5/3/2011	108	118	2.3	Y		5/3/2011	2.3	Y
HN-40I	12/19/2011	108	118	8.7	Y		12/19/2011	8.7	Y
HN-40I	2/7/2012	108	118	11	Y		2/7/2012	11	Y
HN-40I	5/28/2013	108	118	22	Y		5/28/2013	22	Y
HN-40I	5/12/2014	108	118	22	Y		5/12/2014	22	Y
HN-40I	4/20/2015	108	118	5	N		4/20/2015	0.5	N
HN-40I	4/13/2016	108	118	1	N		4/13/2016	0.5	N
HN-40I	4/19/2017	108	118	1	N		4/19/2017	0.5	N

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Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
HN-42I	2/9/2001	100	110	1	Y				
HN-42I	5/4/2001	100	110	0.9	Y				
HN-42I	10/5/2001	100	110	0.9	Y				
HN-42I	1/7/2002	100	110	1	Y				
HN-42I	3/26/2002	100	110	5	N				
HN-42I	6/13/2002	100	110	5	N				
HN-42I	10/14/2002	100	110	5	N				
HN-42I	12/18/2002	100	110	0.4	Y				
HN-42I	3/18/2003	100	110	0.5	Y				
HN-42I	7/14/2003	100	110	5	N				
HN-42I	10/13/2003	100	110	5	N				
HN-42I	12/22/2003	100	110	0.6	Y				
HN-42I	3/16/2004	100	110	5	N				
HN-42I	9/28/2004	100	110	5	N				
HN-42I	3/14/2005	100	110	5	N				
HN-42I	9/21/2005	100	110	0.4	Y				
HN-42I	3/17/2006	100	110	5	N				
HN-42I	4/13/2006	100	110	5	N				
HN-42I	9/27/2006	100	110	2	Y				
HN-42I	2/7/2007	100	110	10	Y		2/7/2007	10	Y
HN-42I	9/24/2007	100	110	12	Y		9/24/2007	12	Y
HN-42I	3/12/2008	100	110	15	Y		3/12/2008	15	Y
HN-42I	3/13/2008	100	110	5	N		3/13/2008	2.5	N
HN-42I	8/12/2008	100	110	17	Y		8/12/2008	17	Y
HN-42I	2/23/2009	100	110	18	Y		2/23/2009	18	Y
HN-42I	7/8/2009	100	110	20	Y		7/8/2009	20	Y
HN-42I	8/20/2009	100	110	19	Y		8/20/2009	19	Y
HN-42I	10/21/2009	100	110	17	Y		10/21/2009	17	Y
HN-42I	1/28/2010	100	110	12	Y		1/28/2010	12	Y
HN-42I	7/15/2010	100	110	7.3	Y		7/15/2010	7.3	Y
HN-42I	5/2/2011	100	110	8.1	Y		5/2/2011	8.1	Y
HN-42I	12/17/2011	100	110	4.3	Y		12/17/2011	4.3	Y
HN-42I	2/6/2012	100	110	3.9	Y		2/6/2012	3.9	Y
HN-42I	5/28/2013	100	110	3	Y		5/28/2013	3	Y
HN-42I	5/12/2014	100	110	5	N		5/12/2014	2.5	N
HN-42I	4/27/2015	100	110	0.56	Y		4/27/2015	0.56	Y
HN-42I	4/26/2016	100	110	0.71	Y		4/26/2016	0.71	Y
HN-42I	4/19/2017	100	110	0.42	Y		4/19/2017	0.42	Y

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Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE103D1	3/11/2014			1000	Y		3/11/2014	1000	Y
RE103D1	6/11/2014			1200	Y		6/11/2014	1200	Y
RE103D1	9/23/2014			850	Y		9/23/2014	850	Y
RE103D1	12/10/2014			1300	Y		12/10/2014	1300	Y
RE103D1	3/23/2015			900	Y		3/23/2015	900	Y
RE103D1	6/22/2015			810	Y		6/22/2015	810	Y
RE103D1	9/30/2015			860	Y		9/30/2015	860	Y
RE103D1	12/14/2015			930	Y		12/14/2015	930	Y
RE103D1	3/14/2016			1200	Y		3/14/2016	1200	Y
RE103D1	6/23/2016			930	Y		6/23/2016	930	Y
RE103D1	9/1/2016			860	Y		9/1/2016	860	Y
RE103D1	12/1/2016			940	Y		12/1/2016	940	Y
RE103D1	3/1/2017			740	Y		3/1/2017	740	Y
RE103D1	6/1/2017			910	Y		6/1/2017	910	Y
RE103D1	9/26/2017			720	Y		9/26/2017	720	Y
RE103D1	12/13/2017			720	Y		12/13/2017	720	y

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Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE103D2	3/11/2014			750	Y		3/11/2014	750	Y
RE103D2	6/11/2014			670	Y		6/11/2014	670	Y
RE103D2	9/23/2014			1300	Y		9/23/2014	1300	Y
RE103D2	12/10/2014			930	Y		12/10/2014	930	Y
RE103D2	3/23/2015			940	Y		3/23/2015	940	Y
RE103D2	6/22/2015			770	Y		6/22/2015	770	Y
RE103D2	9/30/2015			830	Y		9/30/2015	830	Y
RE103D2	12/14/2015			620	Y		12/14/2015	620	Y
RE103D2	3/14/2016			860	Y		3/14/2016	860	Y
RE103D2	6/23/2016			890	Y		6/23/2016	890	Y
RE103D2	9/1/2016			810	Y		9/1/2016	810	Y
RE103D2	12/1/2016			780	Y		12/1/2016	780	Y
RE103D2	3/1/2017			700	Y		3/1/2017	700	Y
RE103D2	6/1/2017			560	Y		6/1/2017	560	Y
RE103D2	9/26/2017			480	Y		9/26/2017	480	Y
RE103D2	12/13/2017			530	Y		12/13/2017	530	Y

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Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE103D3	3/11/2014			430	Y		3/11/2014	430	Y
RE103D3	6/11/2014			510	Y		6/11/2014	510	Y
RE103D3	9/23/2014			460	Y		9/23/2014	460	Y
RE103D3	12/10/2014			600	Y		12/10/2014	600	Y
RE103D3	3/23/2015			570	Y		3/23/2015	570	Y
RE103D3	6/22/2015			420	Y		6/22/2015	420	Y
RE103D3	9/30/2015			470	Y		9/30/2015	470	Y
RE103D3	12/14/2015			510	Y		12/14/2015	510	Y
RE103D3	3/14/2016			520	Y		3/14/2016	520	Y
RE103D3	6/23/2016			500	Y		6/23/2016	500	Y
RE103D3	9/1/2016			490	Y		9/1/2016	490	Y
RE103D3	12/1/2016			500	Y		12/1/2016	500	Y
RE103D3	3/1/2017			420	Y		3/1/2017	420	Y
RE103D3	6/1/2017			400	Y		6/1/2017	400	Y
RE103D3	9/26/2017			240	Y		9/26/2017	240	Y
RE103D3	12/13/2017			390	Y		12/13/2017	390	Y

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Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE104D1	3/12/2014			150	Y		3/12/2014	150	Y
RE104D1	6/12/2014			160	Y		6/12/2014	160	Y
RE104D1	9/24/2014			140	Y		9/24/2014	140	Y
RE104D1	12/11/2014			140	Y		12/11/2014	140	Y
RE104D1	3/23/2015			110	Y		3/23/2015	110	Y
RE104D1	6/23/2015			100	Y		6/23/2015	100	Y
RE104D1	9/25/2015			110	Y		9/25/2015	110	Y
RE104D1	12/15/2015			110	Y		12/15/2015	110	Y
RE104D1	3/15/2016			100	Y		3/15/2016	100	Y
RE104D1	6/21/2016			92	Y		6/21/2016	92	Y
RE104D1	9/1/2016			93	Y		9/1/2016	93	Y
RE104D1	12/1/2016			84	Y		12/1/2016	84	Y
RE104D1	3/1/2017			79	Y		3/1/2017	79	Y
RE104D1	6/1/2017			77	Y		6/1/2017	77	Y
RE104D1	9/19/2017			65	Y		9/19/2017	65	Y
RE104D1	12/5/2017			69	Y		12/5/2017	69	Y

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Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE104D2	3/12/2014			2.6	Y		3/12/2014	2.6	Y
RE104D2	6/12/2014			1.8	Y		6/12/2014	1.8	Y
RE104D2	9/24/2014			2.3	Y		9/24/2014	2.3	Y
RE104D2	12/11/2014			3.4	Y		12/11/2014	3.4	Y
RE104D2	3/23/2015			3	Y		3/23/2015	3	Y
RE104D2	6/23/2015			4.3	Y		6/23/2015	4.3	Y
RE104D2	9/25/2015			4.2	Y		9/25/2015	4.2	Y
RE104D2	12/15/2015			6.8	Y		12/15/2015	6.8	Y
RE104D2	3/15/2016			8.4	Y		3/15/2016	8.4	Y
RE104D2	6/21/2016			9	Y		6/21/2016	9	Y
RE104D2	9/1/2016			12	Y		9/1/2016	12	Y
RE104D2	12/1/2016			10	Y		12/1/2016	10	Y
RE104D2	3/1/2017			10	Y		3/1/2017	10	Y
RE104D2	6/1/2017			15	Y		6/1/2017	15	Y
RE104D2	9/19/2017			13	Y		9/19/2017	13	Y
RE104D2	12/5/2017			27	Y		12/5/2017	27	Y

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Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE105D1	3/11/2014			160	Y		3/11/2014	160	Y
RE105D1	6/11/2014			130	Y		6/11/2014	130	Y
RE105D1	9/26/2014			92	Y		9/26/2014	92	Y
RE105D1	12/11/2014			120	Y		12/11/2014	120	Y
RE105D1	3/25/2015			120	Y		3/25/2015	120	Y
RE105D1	6/23/2015			120	Y		6/23/2015	120	Y
RE105D1	9/28/2015			94	Y		9/28/2015	94	Y
RE105D1	12/17/2015			120	Y		12/17/2015	120	Y
RE105D1	3/17/2016			130	Y		3/17/2016	130	Y
RE105D1	6/27/2016			110	Y		6/27/2016	110	Y
RE105D1	9/1/2016			100	Y		9/1/2016	100	Y
RE105D1	12/1/2016			110	Y		12/1/2016	110	Y
RE105D1	3/1/2017			120	Y		3/1/2017	120	Y
RE105D1	6/1/2017			86	Y		6/1/2017	86	Y
RE105D1	9/18/2017			92	Y		9/18/2017	92	Y
RE105D1	12/5/2017			100	Y		12/5/2017	100	Y

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Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE105D2	3/11/2014			620	Y		3/11/2014	620	Y
RE105D2	6/11/2014			1500	Y		6/11/2014	1500	Y
RE105D2	9/26/2014			1500	Y		9/26/2014	1500	Y
RE105D2	12/11/2014			1700	Y		12/11/2014	1700	Y
RE105D2	3/25/2015			1600	Y		3/25/2015	1600	Y
RE105D2	6/23/2015			1400	Y		6/23/2015	1400	Y
RE105D2	9/28/2015			1900	Y		9/28/2015	1900	Y
RE105D2	12/17/2015			1800	Y		12/17/2015	1800	Y
RE105D2	3/17/2016			1800	Y		3/17/2016	1800	Y
RE105D2	6/27/2016			1800	Y		6/27/2016	1800	Y
RE105D2	9/1/2016			2000	Y		9/1/2016	2000	Y
RE105D2	12/1/2016			1800	Y		12/1/2016	1800	Y
RE105D2	3/1/2017			1800	Y		3/1/2017	1800	Y
RE105D2	6/1/2017			1700	Y		6/1/2017	1700	Y
RE105D2	9/18/2017			1900	Y		9/18/2017	1900	Y
RE105D2	12/5/2017			1900	Y		12/5/2017	1900	Y

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Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE107D1	12/18/2015			17	Y		12/18/2015	17	Y
RE107D1	5/23/2016			11.6	Y		5/23/2016	11.6	Y
RE107D1	12/1/2016			11.8	Y		12/1/2016	11.8	Y
RE107D1	6/1/2017			15.2	Y		6/1/2017	15.2	Y
RE107D1	11/29/2017			12.7	Y		11/29/2017	12.7	Y

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Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE107D2	12/18/2015			140	Y		12/18/2015	140	Y
RE107D2	5/23/2016			162	Y		5/23/2016	162	Y
RE107D2	12/1/2016			174	Y		12/1/2016	174	Y
RE107D2	6/1/2017			194	Y		6/1/2017	194	Y
RE107D2	11/29/2017			226	Y		11/29/2017	226	Y

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Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE107D3	12/29/2015			0.36	Y		12/29/2015	0.36	Y
RE107D3	5/24/2016			1	N		5/24/2016	0.125	N
RE107D3	12/1/2016			0.26	Y		12/1/2016	0.26	Y
RE107D3	6/1/2017			0.27	Y		6/1/2017	0.27	Y
RE107D3	12/1/2017			1	N		12/1/2017	0.125	N

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Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE108D1	3/12/2014			130	Y		3/12/2014	130	Y
RE108D1	6/10/2014			82	Y		6/10/2014	82	Y
RE108D1	9/24/2014			140	Y		9/24/2014	140	Y
RE108D1	12/12/2014			140	Y		12/12/2014	140	Y
RE108D1	3/27/2015			140	Y		3/27/2015	140	Y
RE108D1	6/24/2015			110	Y		6/24/2015	110	Y
RE108D1	9/28/2015			98	Y		9/28/2015	98	Y
RE108D1	12/22/2015			110	Y		12/22/2015	110	Y
RE108D1	3/14/2016			120	Y		3/14/2016	120	Y
RE108D1	6/27/2016			82	Y		6/27/2016	82	Y
RE108D1	9/1/2016			50	Y		9/1/2016	50	Y
RE108D1	12/1/2016			56	Y		12/1/2016	56	Y
RE108D1	3/1/2017			61	Y		3/1/2017	61	Y
RE108D1	6/1/2017			38	Y		6/1/2017	38	Y
RE108D1	9/18/2017			39	Y		9/18/2017	39	Y
RE108D1	12/6/2017			51	Y		12/6/2017	51	Y

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Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE108D2	3/12/2014			4600	Y		3/12/2014	4600	Y
RE108D2	6/10/2014			3400	Y		6/10/2014	3400	Y
RE108D2	9/24/2014			3700	Y		9/24/2014	3700	Y
RE108D2	12/12/2014			3100	Y		12/12/2014	3100	Y
RE108D2	3/27/2015			3300	Y		3/27/2015	3300	Y
RE108D2	6/24/2015			3900	Y		6/24/2015	3900	Y
RE108D2	9/28/2015			3400	Y		9/28/2015	3400	Y
RE108D2	12/22/2015			2900	Y		12/22/2015	2900	Y
RE108D2	3/14/2016			3800	Y		3/14/2016	3800	Y
RE108D2	6/27/2016			3000	Y		6/27/2016	3000	Y
RE108D2	9/1/2016			3000	Y		9/1/2016	3000	Y
RE108D2	12/1/2016			2900	Y		12/1/2016	2900	Y
RE108D2	3/1/2017			2900	Y		3/1/2017	2900	Y
RE108D2	6/1/2017			3000	Y		6/1/2017	3000	Y
RE108D2	9/18/2017			2900	Y		9/18/2017	2900	Y
RE108D2	12/6/2017			3100	Y		12/6/2017	3100	Y

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Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE114D1	12/21/2015			370	Y		12/21/2015	370	Y
RE114D1	5/26/2016			353	Y		5/26/2016	353	Y
RE114D1	12/1/2016			399	Y		12/1/2016	399	Y
RE114D1	6/1/2017			415	Y		6/1/2017	415	Y
RE114D1	11/29/2017			387	Y		11/29/2017	387	Y

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Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE114D2	12/16/2015			70	Y		12/16/2015	70	Y
RE114D2	5/26/2016			52.3	Y		5/26/2016	52.3	Y
RE114D2	12/1/2016			68.2	Y		12/1/2016	68.2	Y
RE114D2	6/1/2017			67	Y		6/1/2017	67	Y
RE114D2	12/20/2017			84	y		12/20/2017	84	y

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Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE114D3	12/16/2015			43	Y		12/16/2015	43	Y
RE114D3	5/26/2016			34	Y		5/26/2016	34	Y
RE114D3	12/1/2016			47	Y		12/1/2016	47	Y
RE114D3	6/1/2017			42.6	Y		6/1/2017	42.6	Y
RE114D3	12/20/2017			51.2	y		12/20/2017	51.2	y

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Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE117D1	6/1/2015			7.8	Y		6/1/2015	7.8	Y
RE117D1	12/1/2015			9.4	Y		12/1/2015	9.4	Y
RE117D1	5/16/2016			21.3	Y		5/16/2016	21.3	Y
RE117D1	10/31/2016			16	Y		10/31/2016	16	Y
RE117D1	12/1/2016			17	Y		12/1/2016	17	Y
RE117D1	3/1/2017			14	Y		3/1/2017	14	Y
RE117D1	6/1/2017			15	Y		6/1/2017	15	Y
RE117D1	9/25/2017			14	Y		9/25/2017	14	Y
RE117D1	12/13/2017			13	Y		12/13/2017	13	Y

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Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE120D1	12/12/2014			1300	Y		12/12/2014	1300	Y
RE120D1	3/25/2015			1300	Y		3/25/2015	1300	Y
RE120D1	9/29/2015			1300	Y		9/29/2015	1300	Y
RE120D1	12/18/2015			1300	Y		12/18/2015	1300	Y
RE120D1	3/16/2016			1200	Y		3/16/2016	1200	Y
RE120D1	6/22/2016			1200	Y		6/22/2016	1200	Y
RE120D1	9/1/2016			1400	Y		9/1/2016	1400	Y
RE120D1	12/1/2016			1000	Y		12/1/2016	1000	Y
RE120D1	3/1/2017			1000	Y		3/1/2017	1000	Y
RE120D1	6/1/2017			870	Y		6/1/2017	870	Y
RE120D1	9/20/2017			970	Y		9/20/2017	970	Y
RE120D1	12/12/2017			990	Y		12/12/2017	990	Y

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Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE120D2	12/12/2014			900	Y		12/12/2014	900	Y
RE120D2	3/25/2015			830	Y		3/25/2015	930	Y
RE120D2	9/29/2015			760	Y		9/29/2015	760	Y
RE120D2	12/29/2015			680	Y		12/29/2015	680	Y
RE120D2	3/16/2016			780	Y		3/16/2016	780	Y
RE120D2	6/22/2016			720	Y		6/22/2016	720	Y
RE120D2	9/1/2016			1000	Y		9/1/2016	1000	Y
RE120D2	12/1/2016			670	Y		12/1/2016	670	Y
RE120D2	3/1/2017			610	Y		3/1/2017	610	Y
RE120D2	6/1/2017			640	Y		6/1/2017	640	Y
RE120D2	9/20/2017			690	Y		9/20/2017	690	Y
RE120D2	12/12/2017			710	Y		12/12/2017	710	Y

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Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE120D3	12/12/2014			3.4	Y		12/12/2014	3.4	Y
RE120D3	3/25/2015			0.74	Y		3/25/2015	0.74	Y
RE120D3	9/29/2015			120	Y		9/29/2015	120	Y
RE120D3	12/29/2015			29	Y		12/29/2015	29	Y
RE120D3	3/16/2016			55	Y		3/16/2016	55	Y
RE120D3	6/22/2016			46	Y		6/22/2016	46	Y
RE120D2	9/1/2016			57	Y		9/1/2016	57	Y
RE120D2	12/1/2016			41	Y		12/1/2016	41	Y
RE120D2	3/1/2017			31	Y		3/1/2017	31	Y
RE120D2	6/1/2017			37	Y		6/1/2017	37	Y
RE120D2	9/20/2017			44	Y		9/20/2017	44	Y
RE120D2	12/12/2017			28	Y		12/12/2017	28	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE121D1	12/21/2015			29	Y		12/21/2015	29	Y
RE121D1	6/1/2016			18.9	Y		6/1/2016	18.9	Y
RE121D1	12/1/2016			25.8	Y		12/1/2016	25.8	Y
RE121D1	6/1/2017			31.3	Y		6/1/2017	31.3	Y
RE121D1	12/5/2017			33.8	Y		12/5/2017	33.8	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE121D2	12/21/2015			480	Y		12/21/2015	480	Y
RE121D2	6/1/2016			422	Y		6/1/2016	422	Y
RE121D2	12/1/2016			591	Y		12/1/2016	591	Y
RE121D2	6/1/2017			789	Y		6/1/2017	789	Y
RE121D2	12/5/2017			754	Y		12/5/2017	754	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE122D1	3/24/2015			570	Y		3/24/2015	570	Y
RE122D1	9/30/2015			600	Y		9/30/2015	600	Y
RE122D1	12/15/2015			600	Y		12/15/2015	600	Y
RE122D1	3/15/2016			610	Y		3/15/2016	610	Y
RE122D1	6/22/2016			610	Y		6/22/2016	610	Y
RE122D1	9/1/2016			510	Y		9/1/2016	510	Y
RE122D1	12/1/2016			520	Y		12/1/2016	520	Y
RE122D1	3/1/2017			540	Y		3/1/2017	540	Y
RE122D1	6/1/2017			450	Y		6/1/2017	450	Y
RE122D1	9/21/2017			510	Y		9/21/2017	510	Y
RE122D1	12/6/2017			490	Y		12/6/2017	490	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE122D2	3/24/2015			4600	Y		3/24/2015	4600	Y
RE122D2	9/30/2015			5200	Y		9/30/2015	5200	Y
RE122D2	12/15/2015			4700	Y		12/15/2015	4700	Y
RE122D2	3/15/2016			5300	Y		3/15/2016	5300	Y
RE122D2	6/22/2016			5500	Y		6/22/2016	5500	Y
RE122D2	9/1/2016			4600	Y		9/1/2016	4600	Y
RE122D2	12/1/2016			5300	Y		12/1/2016	5300	Y
RE122D2	3/1/2017			4700	Y		3/1/2017	4700	Y
RE122D2	6/1/2017			3000	Y		6/1/2017	3000	Y
RE122D2	9/21/2017			2200	Y		9/21/2017	2200	Y
RE122D2	12/6/2017			3200	Y		12/6/2017	3200	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE122D3	3/24/2015			6.8	Y		3/24/2015	6.8	Y
RE122D3	9/30/2015			10	Y		9/30/2015	10	Y
RE122D3	12/15/2015			2.5	Y		12/15/2015	2.5	Y
RE122D3	3/15/2016			2.1	Y		3/15/2016	2.1	Y
RE122D3	6/22/2016			7.4	Y		6/22/2016	7.4	Y
RE122D3	9/1/2016			3.8	Y		9/1/2016	3.8	Y
RE122D3	12/1/2016			5.1	Y		12/1/2016	5.1	Y
RE122D3	3/1/2017			6.2	Y		3/1/2017	6.2	Y
RE122D3	6/1/2017			6.7	Y		6/1/2017	6.7	Y
RE122D3	9/21/2017			7.2	Y		9/21/2017	7.2	Y
RE122D3	12/6/2017			4.2	Y		12/6/2017	4.2	Y

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Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE123D1	9/29/2015			12	Y		9/29/2015	12	Y
RE123D1	12/21/2015			6.1	Y		12/21/2015	6.1	Y
RE123D1	3/17/2016			6.6	Y		3/17/2016	6.6	Y
RE123D1	6/20/2016			7.4	Y		6/20/2016	7.4	Y
RE123D1	9/1/2016			9.6	Y		9/1/1916	9.6	Y
RE123D1	12/1/1916			7.3	Y		12/1/1916	7.3	Y
RE123D1	3/1/2017			4.8	Y		3/1/1917	4.8	Y
RE123D1	6/1/2017			4.9	Y		6/1/1917	4.9	Y
RE123D1	9/22/2017			8	Y		9/22/2017	8	Y
RE123D1	12/12/2017			8.4	Y		12/12/2017	8.4	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE123D2	9/29/2015			1.4	Y		9/29/2015	1.4	Y
RE123D2	12/21/2015			1.5	Y		12/21/2015	1.5	Y
RE123D2	3/17/2016			1.9	Y		3/17/2016	1.9	Y
RE123D2	6/20/2016			1.5	Y		6/20/2016	1.5	Y
RE123D2	9/1/2016			2.1	Y		9/1/1916	2.1	Y
RE123D2	12/1/2016			1.8	Y		12/1/1916	1.8	Y
RE123D2	3/1/2017			1.6	Y		3/1/1917	1.6	Y
RE123D2	6/1/2017			1.8	Y		6/1/1917	1.8	Y
RE123D2	9/22/2017			2.1	Y		9/22/2017	2.1	Y
RE123D2	12/12/2017			2.1	Y		12/12/2017	2.1	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE125D1	12/7/2016			180	Y		12/1/2016	180	Y
RE125D1	3/13/2017			150	Y		3/1/2017	150	Y
RE125D1	6/2/2017			180	Y		6/1/2017	180	Y
RE125D1	9/25/2017			170	Y		9/25/2017	170	Y
RE125D1	12/11/2017			140	Y		12/11/2017	140	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE125D2	12/7/2016			240	Y		12/1/2016	240	Y
RE125D2	3/13/2017			220	Y		3/1/2017	220	Y
RE125D2	6/2/2017			230	Y		6/1/2017	230	Y
RE125D2	9/25/2017			210	Y		9/25/2017	210	Y
RE125D2	12/11/2017			200	Y		12/11/2017	200	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE125D3	12/7/2016			150	Y		12/1/2016	150	Y
RE125D3	3/13/2017			140	Y		3/1/2017	140	Y
RE125D3	6/2/2017			140	Y		6/1/2017	140	Y
RE125D3	9/25/2017			140	Y		9/25/2017	140	Y
RE125D3	12/11/2017			150	Y		12/11/2017	150	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE126D1	6/21/2016			28	Y		6/21/2016	28	Y
RE126D1	9/23/2016			23	Y		9/1/2016	23	Y
RE126D1	12/6/2016			26	Y		12/1/2016	26	Y
RE126D1	3/10/2017			34	Y		3/1/2017	34	Y
RE126D1	6/5/2017			43	Y		6/1/2017	43	Y
RE126D1	9/22/2017			65	Y		9/22/2017	65	Y
RE126D1	12/7/2017			85	Y		12/7/2017	85	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE126D2	6/21/2016			520	Y		6/21/2016	520	Y
RE126D2	9/23/2016			520	Y		9/1/2016	520	Y
RE126D2	12/6/2016			530	Y		12/1/2016	530	Y
RE126D2	3/10/2017			400	Y		3/1/2017	400	Y
RE126D2	6/9/2017			480	Y		6/1/2017	480	Y
RE126D2	9/22/2017			460	Y		9/22/2017	460	Y
RE126D2	12/7/2017			450	Y		12/7/2017	450	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE126D3	6/21/2016			4	Y		6/21/2016	4	Y
RE126D3	9/23/2016			3.9	Y		9/1/2016	3.9	Y
RE126D3	12/6/2016			3.3	Y		12/1/2016	3.3	Y
RE126D3	3/10/2017			2	Y		3/1/2017	2	Y
RE126D3	6/9/2017			2.5	Y		6/1/2017	2.5	Y
RE126D3	9/22/2017			3.7	Y		9/22/2017	3.7	Y
RE126D3	12/7/2017			4.3	Y		12/7/2017	4.3	Y

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Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE131D1	6/23/2016			96	Y		6/23/2016	96	Y
RE131D1	9/22/2016			110	Y		9/1/2016	110	Y
RE131D1	12/6/2016			100	Y		12/1/2016	100	Y
RE131D1	3/10/2017			110	Y		3/1/2017	110	Y
RE131D1	6/2/2017			130	Y		6/1/2017	130	Y
RE131D1	9/20/2017			140	Y		9/20/2017	140	Y
RE131D1	12/7/2017			140	Y		12/7/2017	140	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE131D2	6/23/2016			46	Y		6/23/2016	46	Y
RE131D2	9/22/2016			42	Y		9/1/2016	42	Y
RE131D2	12/6/2016			54	Y		12/1/2016	54	Y
RE131D2	3/10/2017			45	Y		3/1/2017	45	Y
RE131D2	6/2/2017			45	Y		6/1/2017	45	Y
RE131D2	9/20/2017			67	Y		9/20/2017	67	Y
RE131D2	12/7/2017			67	Y		12/7/2017	67	Y

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Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
RE131D3	6/23/2016			6.1	Y		6/23/2016	6.1	Y
RE131D3	9/22/2016			6.1	Y		9/1/2016	6.1	Y
RE131D3	12/6/2016			6.6	Y		12/1/2016	6.6	Y
RE131D3	3/10/2017			6.3	Y		3/1/2017	6.3	Y
RE131D3	6/2/2017			6.3	Y		6/1/2017	6.3	Y
RE131D3	9/20/2017			9.1	Y		9/20/2017	9.1	Y
RE131D3	12/7/2017			9.5	Y		12/7/2017	9.5	Y

Appendix A
Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
TT101D	3/13/2014			52	Y		3/13/2014	52	Y
TT101D	5/27/2014			57	Y		5/27/2014	57	Y
TT101D	9/25/2014			66	Y		9/25/2014	66	Y
TT101D	12/9/2014			67	Y		12/9/2014	67	Y
TT101D	3/24/2015			61	Y		3/24/2015	61	Y
TT101D	6/22/2015			66	Y		6/22/2015	66	Y
TT101D	9/29/2015			67	Y		9/29/2015	67	Y
TT101D	12/17/2015			74	Y		12/17/2015	74	Y
TT101D	3/16/2016			67	Y		3/16/2016	67	Y
TT101D	6/21/2016			73	Y		6/21/2016	73	Y
TT101D	9/26/2016			69	Y		9/26/2016	69	Y
TT101D	12/1/2016			68	Y		12/1/2016	68	Y
TT101D	3/1/2017			70	Y		3/1/2017	70	Y
TT101D	6/1/2017			85	Y		6/1/2017	85	Y
TT101D	9/19/2017			62	Y		9/19/2017	62	Y
TT101D	12/8/2017			66	Y		12/8/2017	66	Y

Appendix A

Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
TT101D1	3/13/2014			170	Y		3/13/2014	170	Y
TT101D1	5/27/2014			93	Y		5/27/2014	93	Y
TT101D1	9/25/2014			160	Y		9/25/2014	160	Y
TT101D1	12/9/2014			160	Y		12/9/2014	160	Y
TT101D1	3/24/2015			170	Y		3/24/2015	170	Y
TT101D1	6/22/2015			180	Y		6/22/2015	180	Y
TT101D1	9/29/2015			170	Y		9/29/2015	170	Y
TT101D1	12/17/2015			200	Y		12/17/2015	200	Y
TT101D1	3/16/2016			180	Y		3/16/2016	180	Y
TT101D1	6/21/2016			190	Y		6/21/2016	190	Y
TT101D1	9/21/2016			220	Y		9/21/2016	220	Y
TT101D1	12/1/2016			190	Y		12/1/2016	190	Y
TT101D1	3/1/2017			190	Y		3/1/2017	190	Y
TT101D1	6/1/2017			200	Y		6/1/2017	200	Y
TT101D1	9/19/2017			170	Y		9/19/2017	170	Y
TT101D1	12/8/2017			170	Y		12/8/2017	170	Y

Appendix A
Data Sets Used for Trends and Projections

Well	Date	Top screen	Bottom Screen	TCE Result	Detect?		MK Dataset		
TT101D2	3/13/2014			250	Y		3/13/2014	250	Y
TT101D2	5/27/2014			300	Y		5/27/2014	300	Y
TT101D2	9/25/2014			560	Y		9/25/2014	560	Y
TT101D2	12/9/2014			520	Y		12/9/2014	520	Y
TT101D2	3/24/2015			480	Y		3/24/2015	480	Y
TT101D2	6/22/2015			620	Y		6/22/2015	620	Y
TT101D2	9/29/2015			640	Y		9/29/2015	640	Y
TT101D2	12/17/2015			510	Y		12/17/2015	510	Y
TT101D2	3/16/2016			590	Y		3/16/2016	590	Y
TT101D2	6/21/2016			690	Y		6/21/2016	690	Y
TT101D2	9/26/2016			680	Y		9/26/2016	680	Y
TT101D2	12/1/2016			740	Y		12/1/2016	740	Y
TT101D2	3/1/2017			780	Y		3/1/2017	780	Y
TT101D2	6/1/2017			670	Y		6/1/2017	670	Y
TT101D2	9/19/2017			630	Y		9/19/2017	630	Y
TT101D2	12/8/2017			840	Y		12/8/2017	840	Y

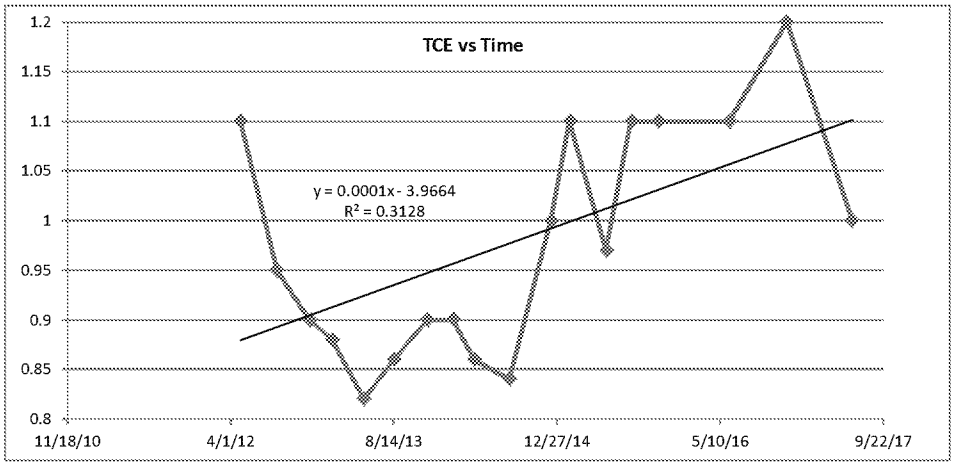
Appendix B
Mann-Kendall Results and First-Order Change Rates

Mann-Kendall Statistical Test and First Order Change Rate

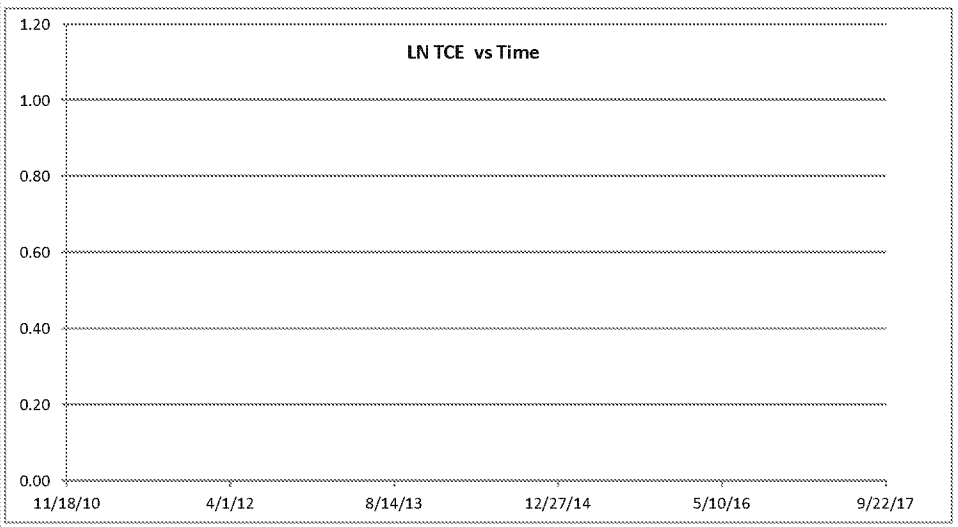
Site Name = Bethpage | **Well Number** = BPOW1-1

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	5/1/2012	1.1		1.1
2	8/20/2012	0.95		0.95
3	11/29/2012	0.9		0.9
4	2/6/2013	0.88		0.88
5	5/14/2013	0.82		0.82
6	8/14/2013	0.86		0.86
7	11/25/2013	0.9		0.9
8	2/11/2014	0.9		0.9
9	4/17/2014	0.86		0.86
10	8/4/2014	0.84		0.84
11	12/9/2014	1		1
12	2/4/2015	1.1		1.1
13	5/27/2015	0.97		0.97
14	8/11/2015	1.1		1.1
15	11/2/2015	1.1		1.1
16	6/8/2016	1.10		1.1
17	12/1/2016	1.2		1.2
18	6/19/2017	1		1
	Mann Kendall Statistic (S) =	54.0		0.00012
	Number of Rounds (n) =	18		
	Average =	0.98		
	Standard Deviation =	0.115		
	Coefficient of Variation(CV)=	0.118		
Error Check, Blank if No Errors Detected				
Trend ≥ 80% Confidence Level		INCREASING		
Trend ≥ 90% Confidence Level		INCREASING		
Stability Test, If No Trend Exists at 80% Confidence Level		NA		
	Data Entry By =	BC	Date =	Mar 5 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = BPOW1-2

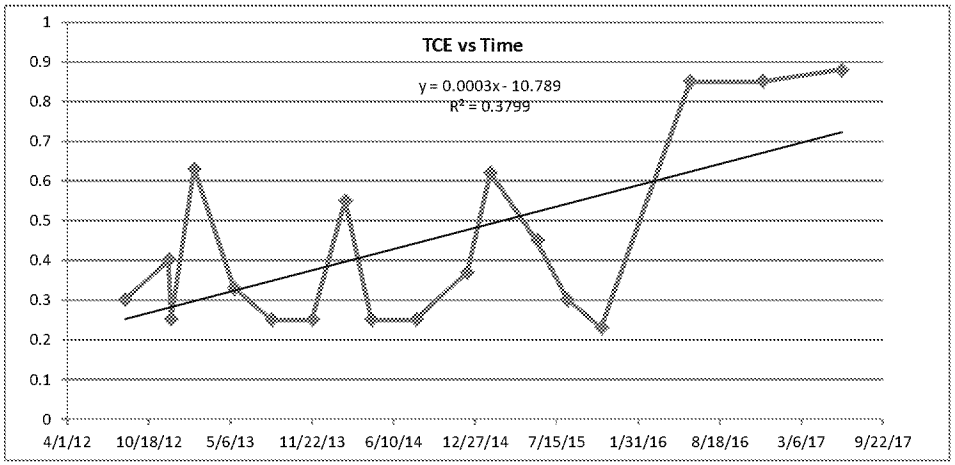
Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	8/20/2012	0.3		0.3
2	12/5/2012	0.4		0.4
3	12/11/2012	0.25		0.25
4	2/6/2013	0.63		0.63
5	5/14/2013	0.33		0.33
6	8/15/2013	0.25		0.25
7	11/22/2013	0.25		0.25
8	2/11/2014	0.55		0.55
9	4/17/2014	0.25		0.25
10	8/4/2014	0.25		0.25
11	12/8/2014	0.37		0.37
12	2/3/2015	0.62		0.62
13	5/27/2015	0.45		0.45
14	8/11/2015	0.3		0.3
15	11/2/2015	0.23		0.23
16	6/7/2016	0.85		0.85
17	12/1/2016	0.85		0.85
18	6/13/2017	0.88		0.88
	Mann Kendall Statistic (S) =	39.0		0.00027
	Number of Rounds (n) =	18		
	Average =	0.45		
	Standard Deviation =	0.229		
	Coefficient of Variation(CV)=	0.515		

Error Check, Blank if No Errors Detected

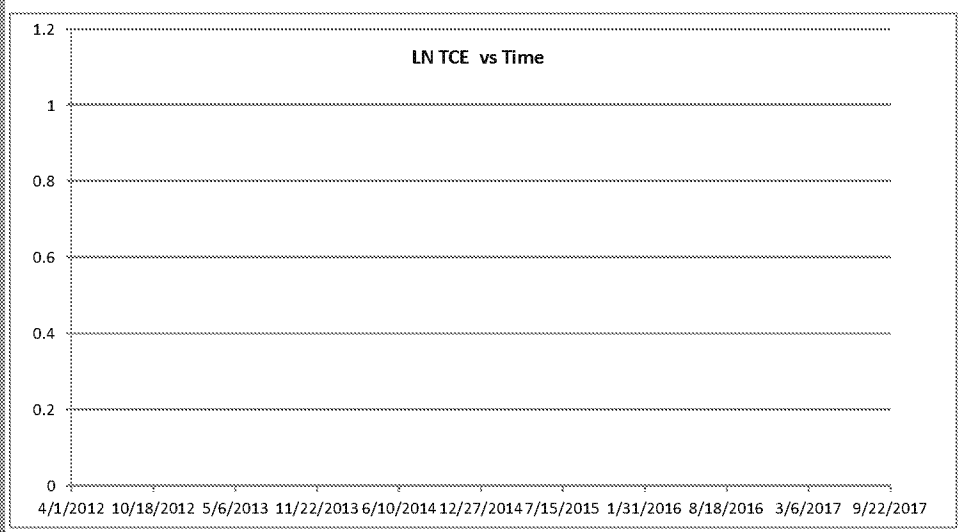
Trend ≥ 80% Confidence Level	INCREASING		
Trend ≥ 90% Confidence Level	INCREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By = BC **Date =** Mar 5 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = BPOW3-4

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	5/16/2012	51		51
2	9/4/2012	58		58
3	12/28/2012	59		59
4	2/19/2013	57		57
5	5/21/2013	53		53
6	8/26/2013	64		64
7	12/6/2013	49		49
8	2/25/2014	46		46
9	4/22/2014	50		50
10	8/12/2014	54		54
11	11/26/2014	74.6		74.6
12	3/31/2015	64.2		64.2
13	6/9/2015	52.9		52.9
14	8/25/2015	60.9		60.9
15	12/11/2015	80.7		80.7
16	6/22/2016	63		63
17	12/1/2016	78.8		78.8
18	6/14/2017	77.3		77.3

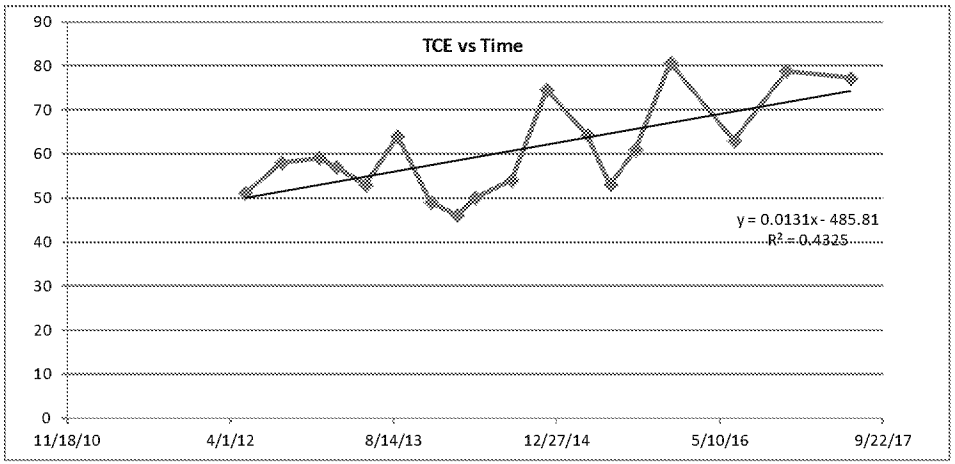
Mann Kendall Statistic (S) =	59.0		0.01305
Number of Rounds (n) =	18		
Average =	60.74		
Standard Deviation =	10.779		
Coefficient of Variation(CV)=	0.177		

Error Check, Blank if No Errors Detected

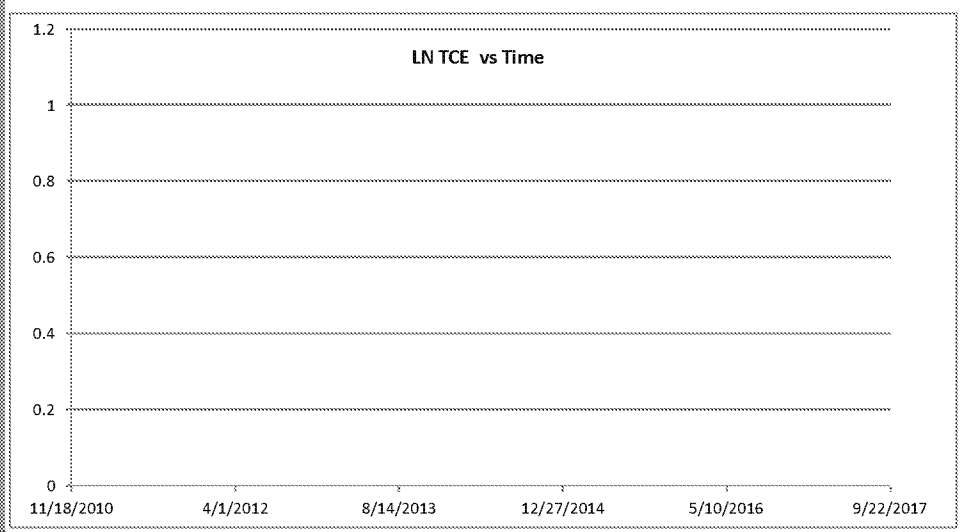
Trend ≥ 80% Confidence Level	INCREASING		
Trend ≥ 90% Confidence Level	INCREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By = BC **Date =** Mar 6 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = BPOW4-1R

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	12/15/2014	0.84		
2	3/30/2015	0.79		
3	6/3/2015	0.58		
4	8/26/2015	0.92		
5	11/13/2015	1		
6	5/31/2016	1.1		
7	10/31/2016	0.57		
8	5/26/2017	0.84		
9				
10				
11				
12				
13				
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15				
16				
17				
18				

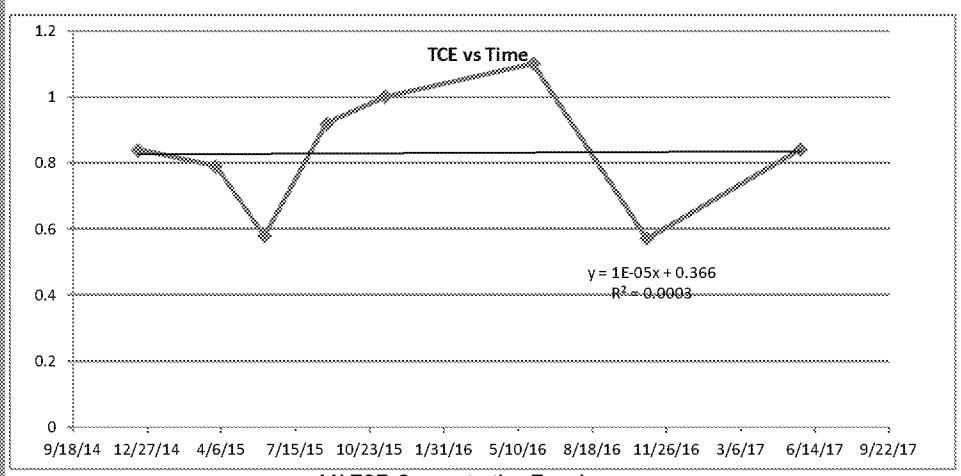
Mann Kendall Statistic (S) =	3.0		#DIV/0!
Number of Rounds (n) =	8		
Average =	0.83		
Standard Deviation =	0.186		
Coefficient of Variation(CV)=	0.224		

Error Check, Blank if No Errors Detected

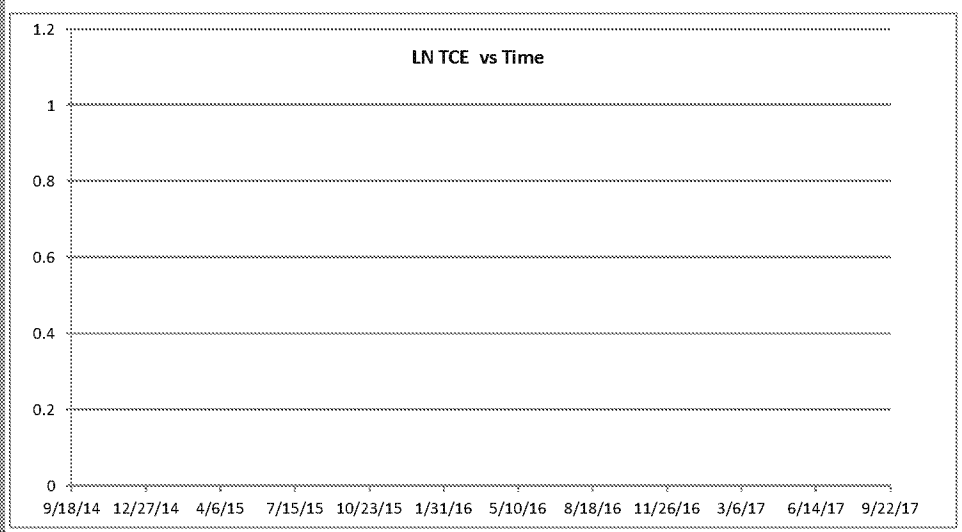
Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	CV <= 1 STABLE		

Data Entry By =	BC	Date =	Mar 6 2016

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = BPOW4-2R

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	12/15/2014	0.73		
2	3/27/2015	0.78		
3	6/3/2015	0.82		
4	8/24/2015	1.6		
5	11/12/2015	1.5		
6	6/1/2016	1.9		
7	11/3/2016	0.91		
8	6/20/2017	0.6		
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

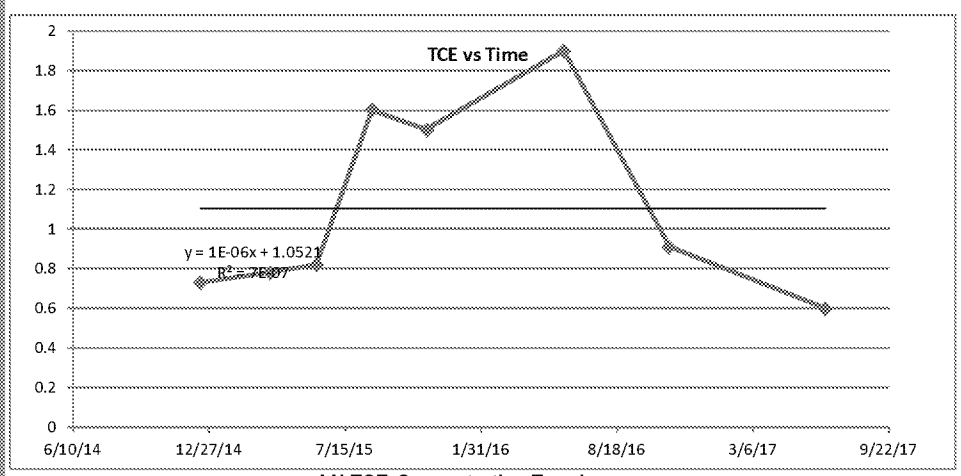
Mann Kendall Statistic (S) =	6.0		#DIV/0!
Number of Rounds (n) =	8		
Average =	1.11		
Standard Deviation =	0.486		
Coefficient of Variation(CV)=	0.440		

Error Check, Blank if No Errors Detected

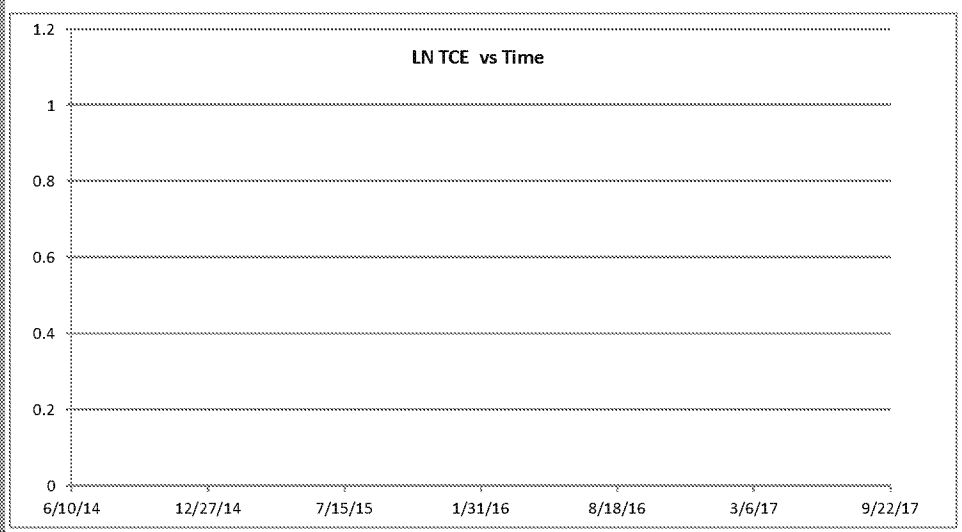
Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	CV <= 1 STABLE		

Data Entry By =	BC	Date =	Mar 6 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

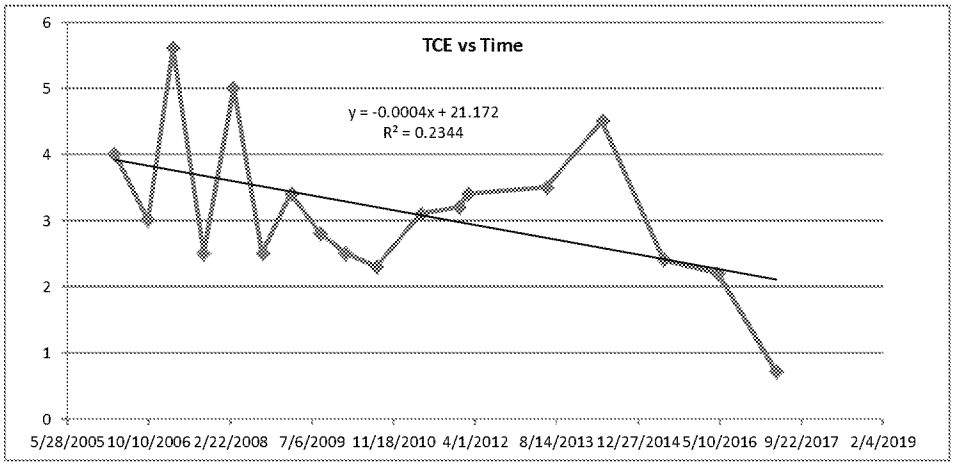
Site Name = Bethpage | **Well Number** = FW-03

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/14/2006	4	1.39	
2	10/5/2006	3	1.10	
3	3/6/2007	5.6	1.72	
4	9/11/2007	2.5	0.92	
5	3/13/2008	5	1.61	
6	9/5/2008	2.5	0.92	
7	2/27/2009	3.4	1.22	
8	8/25/2009	2.8	1.03	
9	1/29/2010	2.5	0.92	
10	8/6/2010	2.3	0.83	
11	5/5/2011	3.1	1.13	
12	12/28/2011	3.2	1.16	
13	2/17/2012	3.4	1.22	
14	6/10/2013	3.5	1.25	
15	5/19/2014	4.5	1.50	
16	6/2/2015	2.4	0.88	
17	4/27/2016	2.2	0.79	
18	4/20/2017	0.71	-0.34	
	Mann Kendall Statistic (S) =	-41.0	-0.00020	
	Number of Rounds (n) =	18		
	Average =	3.15		
	Standard Deviation =	1.132		
	Coefficient of Variation(CV)=	0.360		

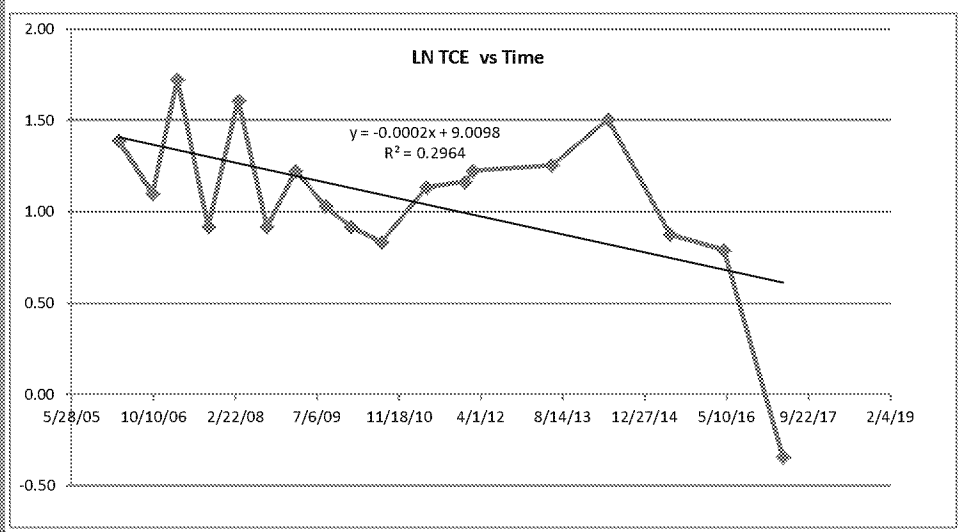
Error Check, Blank if No Errors Detected

Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		
Data Entry By =	BC	Date =	1-Mar-18

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = GM-15D

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	2/27/2009	1.5	0.41	
2	7/7/2009	1.3	0.26	
3	8/14/2009	1.2	0.18	
4	10/23/2009	1.1	0.10	
5	1/21/2010	0.93	-0.07	
6	7/13/2010	0.76	-0.27	
7	5/6/2011	0.6	-0.51	
8	12/10/2011	0.31	-1.17	
9	2/8/2012	0.51	-0.67	
10	9/12/2012	0.55	-0.60	
11	5/24/2013	0.36	-1.02	
12	12/12/2013	0.39	-0.94	
13	6/4/2014	0.48	-0.73	
14	10/20/2014	0.5	-0.69	
15	5/7/2015	0.34	-1.08	
16	6/30/2016	0.5	-0.69	
17	10/26/2016	0.5	-0.69	
18	6/28/2017	0.5	-0.69	

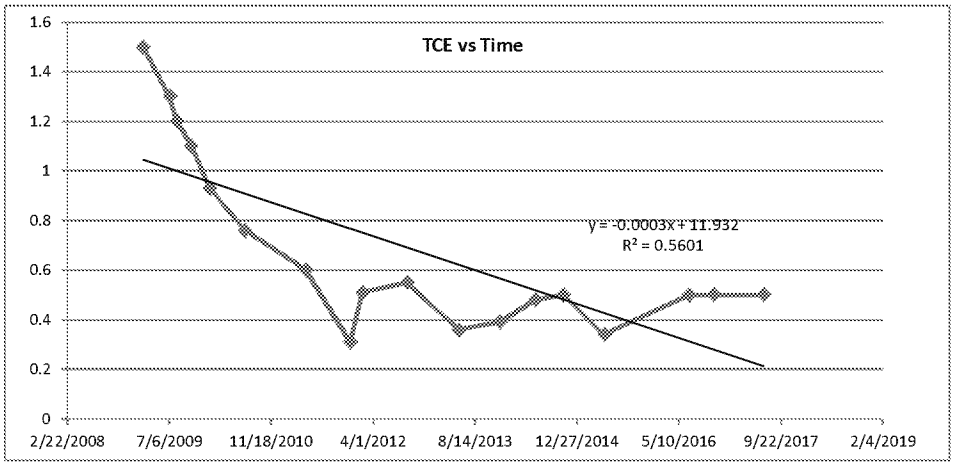
Mann Kendall Statistic (S) =	-89.0	-0.00035	
Number of Rounds (n) =	18		
Average =	0.69		
Standard Deviation =	0.362		
Coefficient of Variation(CV)=	0.529		

Error Check, Blank if No Errors Detected

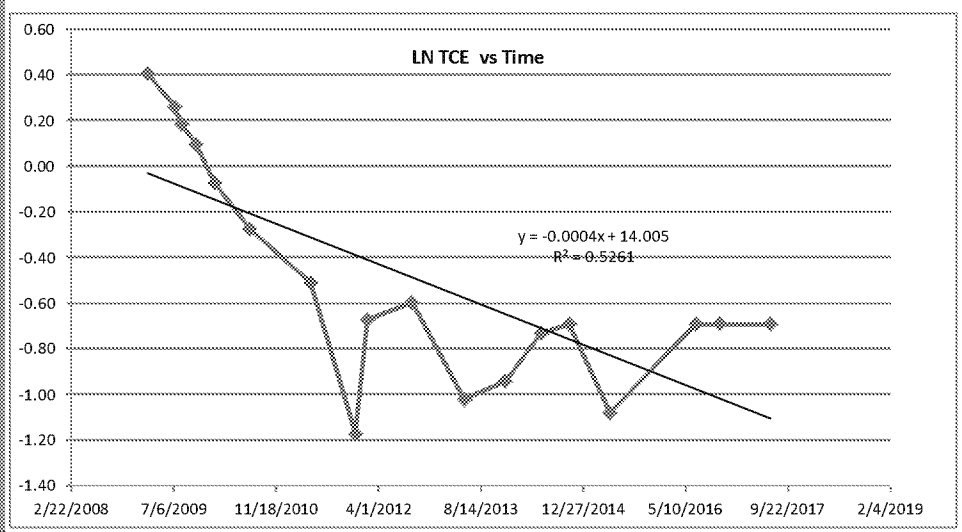
Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Mar 5 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = GM-15D2

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	2/27/2009	11	2.40	
2	7/7/2009	10	2.30	
3	8/14/2009	10	2.30	
4	10/23/2009	11	2.40	
5	1/21/2010	10	2.30	
6	7/13/2010	10	2.30	
7	5/6/2011	11	2.40	
8	12/10/2011	9.6	2.26	
9	2/8/2012	10	2.30	
10	9/12/2012	10	2.30	
11	5/24/2013	11	2.40	
12	12/12/2013	10	2.30	
13	6/4/2014	9.2	2.22	
14	10/20/2014	9.5	2.25	
15	5/7/2015	9.7	2.27	
16	4/13/2016	8.8	2.17	
17	10/26/2016	7.7	2.04	
18	6/28/2017	10	2.30	

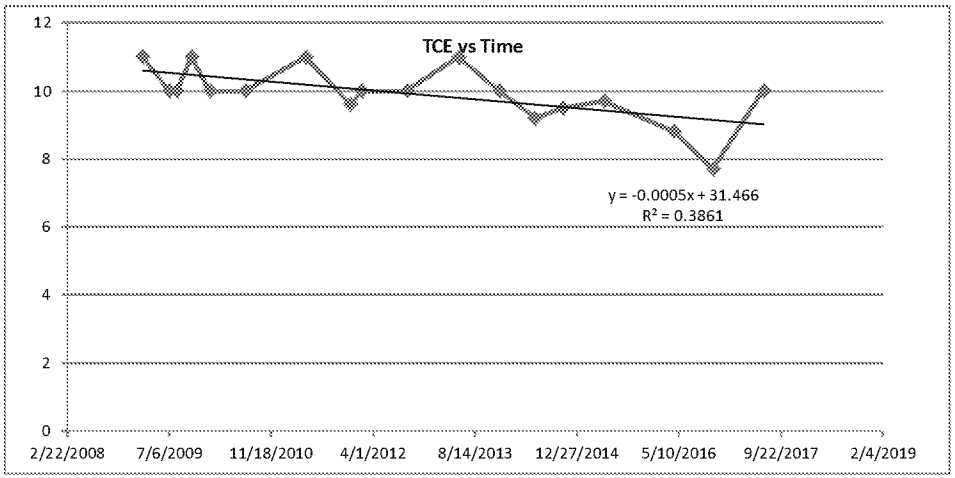
Mann Kendall Statistic (S) =	-67.0	-0.00006	
Number of Rounds (n) =	18		
Average =	9.92		
Standard Deviation =	0.831		
Coefficient of Variation(CV)=	0.084		

Error Check, Blank if No Errors Detected

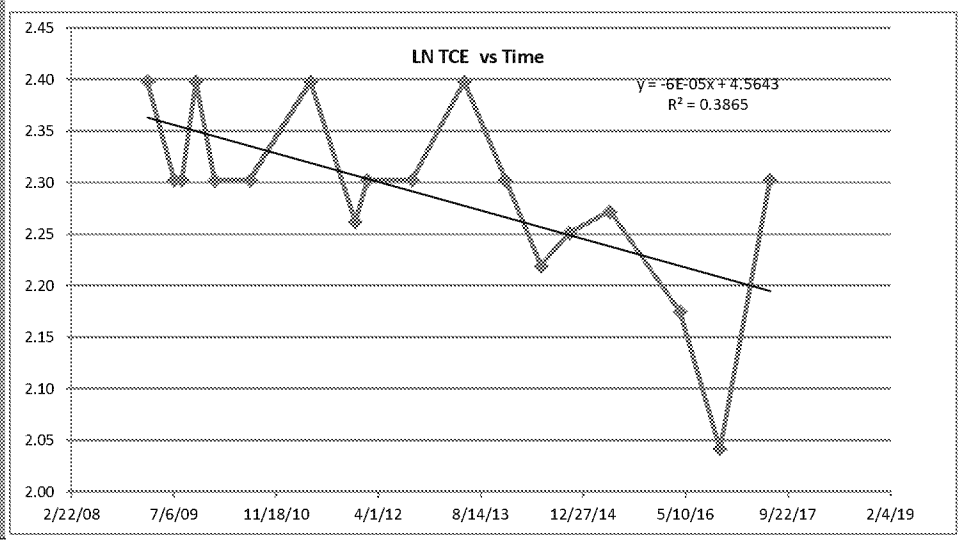
Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Mar 6 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = GM-16SR

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	7/24/2003	2.5		2.5
2	10/8/2003	2.5		2.5
3	1/9/2004	2.5		2.5
4	3/29/2004	2		2
5	10/1/2004	2.5		2.5
6	4/11/2005	2.5		2.5
7	9/7/2005	5		5
8	4/10/2006	4		4
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

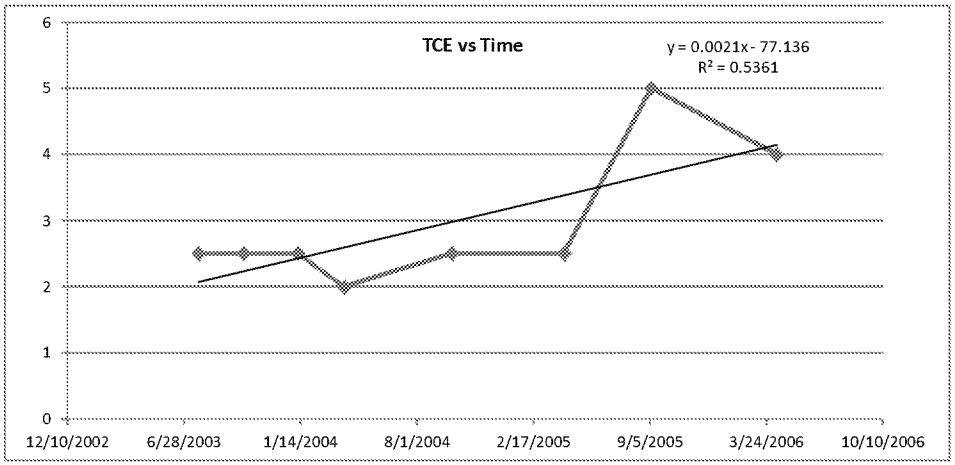
Mann Kendall Statistic (S) =	10.0		0.00209
Number of Rounds (n) =	8		
Average =	2.94		
Standard Deviation =	1.016		
Coefficient of Variation(CV)=	0.346		

Error Check, Blank if No Errors Detected

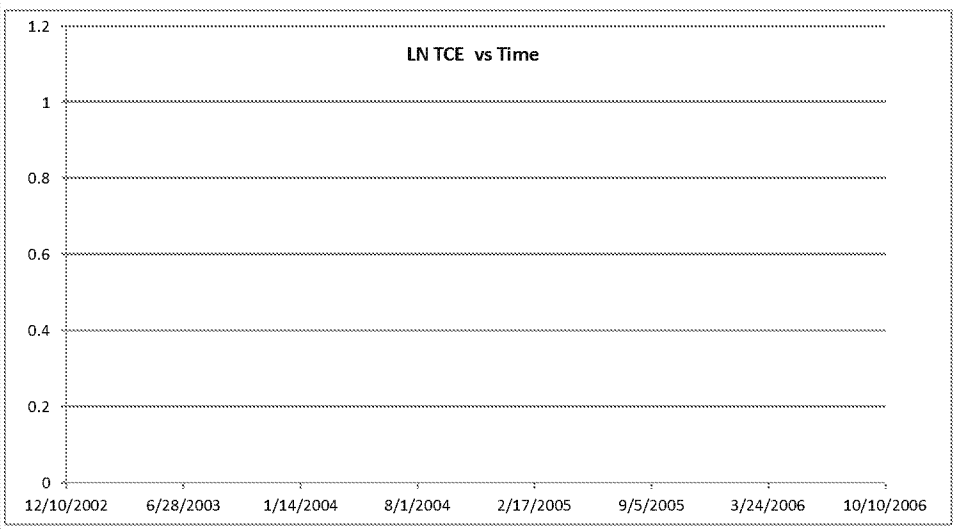
Trend ≥ 80% Confidence Level	INCREASING		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Mar 6 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = GM-17D

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/7/2008	2.5		
2	8/11/2008	2.5		
3	2/17/2009	0.32		
4	8/12/2009	0.47		
5	2/17/2010	0.49		
6	7/29/2010	0.44		
7	5/11/2011	0.54		
8	12/21/2011	0.36		
9	2/9/2012	0.33		
10	9/10/2012	2.5		
11	6/11/2013	0.34		
12	12/19/2013	0.28		
13	5/5/2014	0.66		
14	10/23/2014	0.3		
15	4/22/2015	0.33		
16	5/2/2016	0.61		
17	10/21/2016	0.7		
18	5/2/2017	0.83		

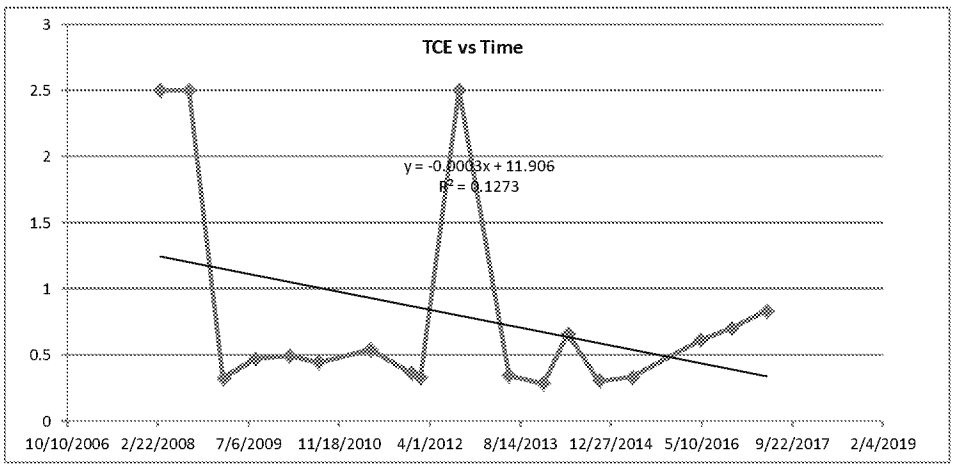
Mann Kendall Statistic (S) =	-9.0		
Number of Rounds (n) =	18		
Average =	0.81		
Standard Deviation =	0.795		
Coefficient of Variation(CV)=	0.987		

Error Check, Blank if No Errors Detected

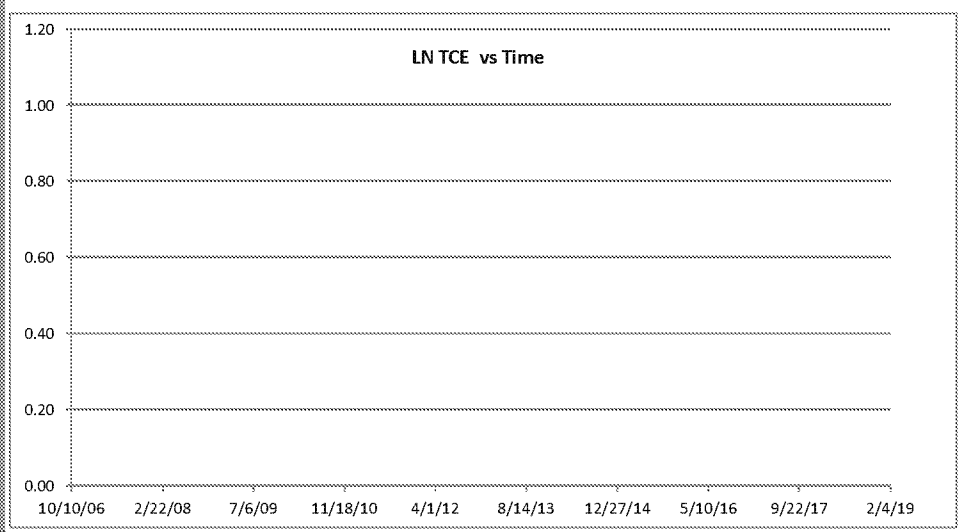
Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	**CV <= 1 STABLE**		

Data Entry By =	BC	**Date =**	Mar 5 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = GM-17I

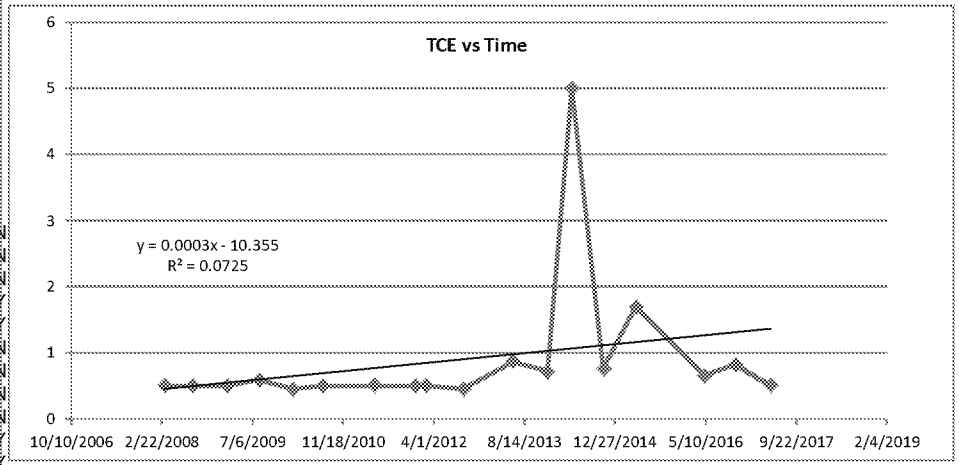
Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation	
	Compound ->				
1	3/7/2008	0.5		0.5	N
2	8/11/2008	0.5		0.5	N
3	2/17/2009	0.5		0.5	N
4	8/12/2009	0.59		0.59	Y
5	2/16/2010	0.45		0.45	Y
6	7/29/2010	0.5		0.5	N
7	5/11/2011	0.5		0.5	N
8	12/21/2011	0.5		0.5	N
9	2/15/2012	0.5		0.5	N
10	9/10/2012	0.45		0.45	Y
11	6/11/2013	0.86		0.86	Y
12	12/19/2013	0.72		0.72	Y
13	5/5/2014	5		5	N
14	10/23/2014	0.76		0.76	Y
15	4/22/2015	1.7		1.7	Y
16	5/2/2016	0.65		0.65	Y
17	10/21/2016	0.82		0.82	Y
18	5/2/2017	0.5		0.5	N
	Mann Kendall Statistic (S) =	52.0		0.00027	
	Number of Rounds (n) =	18			
	Average =	0.89			
	Standard Deviation =	1.067			
	Coefficient of Variation(CV)=	1.200			

Error Check, Blank if No Errors Detected

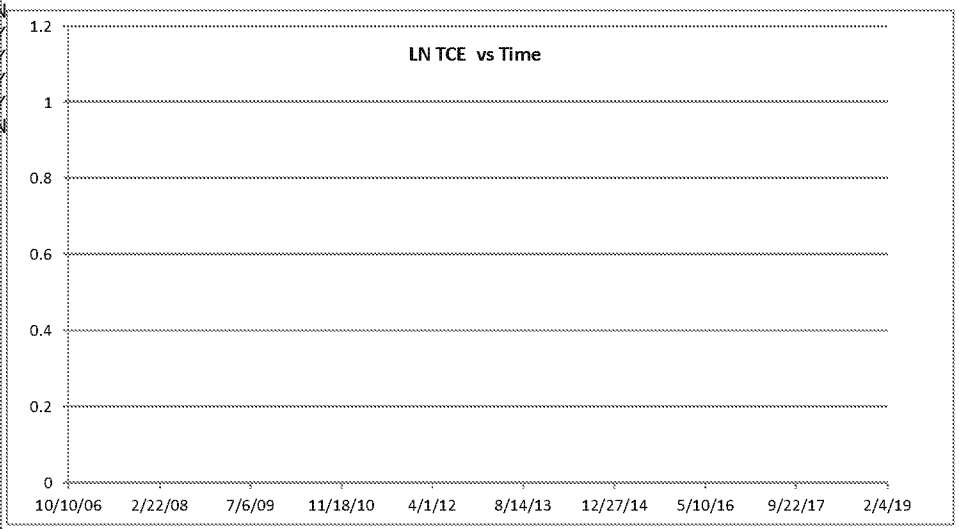
Trend ≥ 80% Confidence Level	INCREASING		
Trend ≥ 90% Confidence Level	INCREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By = BC **Date =** March 5 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = GM-17SR

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/29/2004	2.5		
2	7/2/2004	2.5		
3	9/30/2004	2.5		
4	6/3/2005	2.5		
5	9/7/2005	0.7		
6	1/23/2006	2.5		
7	3/15/2006	2.5		
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

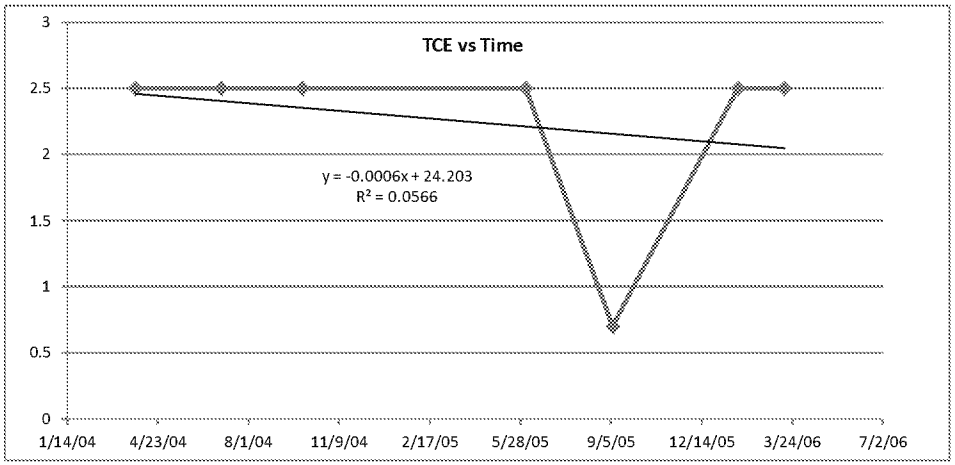
Mann Kendall Statistic (S) =	-2.0		
Number of Rounds (n) =	7		
Average =	2.24		
Standard Deviation =	0.680		
Coefficient of Variation(CV)=	0.303		

Error Check, Blank if No Errors Detected

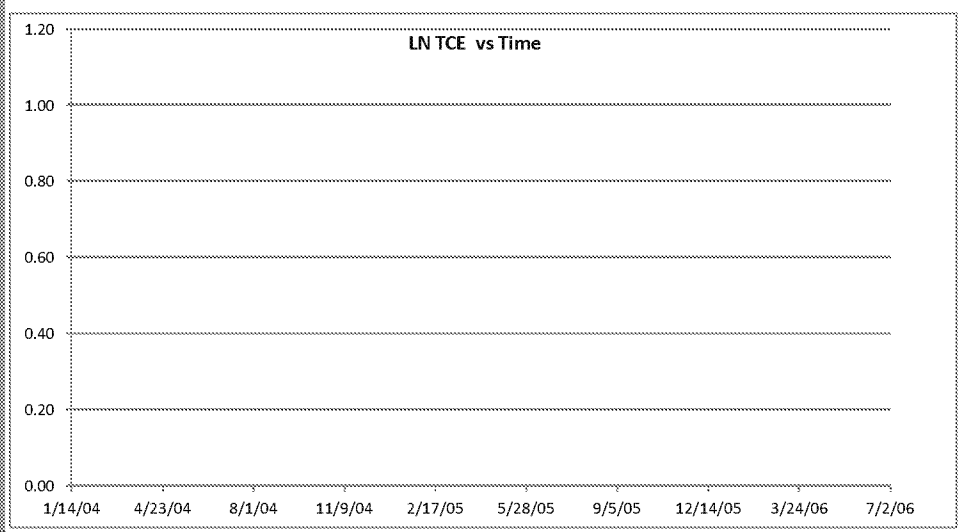
Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	CV <= 1 STABLE		

Data Entry By = BEC **Date =** August 25 2015

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = GM-18D

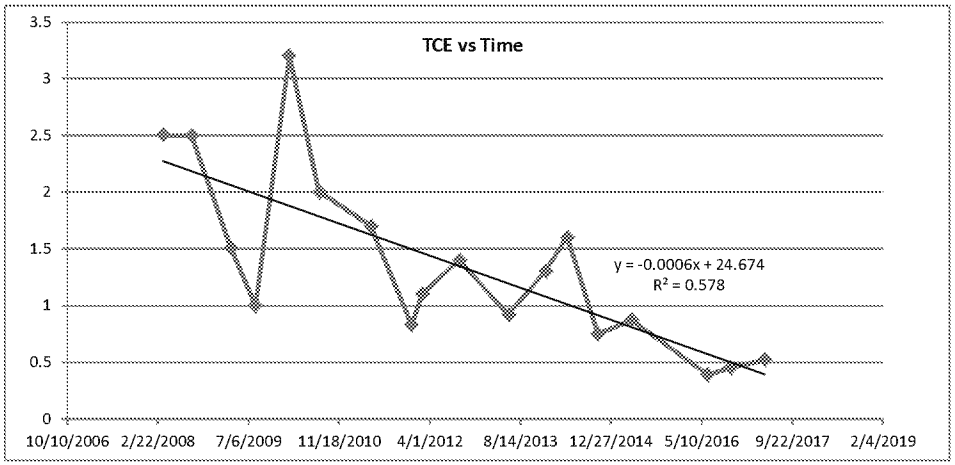
Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/21/2008	2.5	0.92	
2	8/26/2008	2.5	0.92	
3	4/1/2009	1.5	0.41	
4	8/13/2009	1	0.00	
5	2/17/2010	3.2	1.16	
6	7/30/2010	2	0.69	
7	5/11/2011	1.7	0.53	
8	12/22/2011	0.83	-0.19	
9	2/17/2012	1.1	0.10	
10	9/10/2012	1.4	0.34	
11	6/10/2013	0.92	-0.08	
12	12/31/2013	1.3	0.26	
13	5/1/2014	1.6	0.47	
14	10/15/2014	0.75	-0.29	
15	4/21/2015	0.87	-0.14	
16	6/14/2016	0.39	-0.94	
17	10/19/2016	0.45	-0.80	
18	4/21/2017	0.52	-0.65	
	Mann Kendall Statistic (S) =	-92.0	-0.00047	
	Number of Rounds (n) =	18		
	Average =	1.36		
	Standard Deviation =	0.780		
	Coefficient of Variation(CV)=	0.573		

Error Check, Blank if No Errors Detected

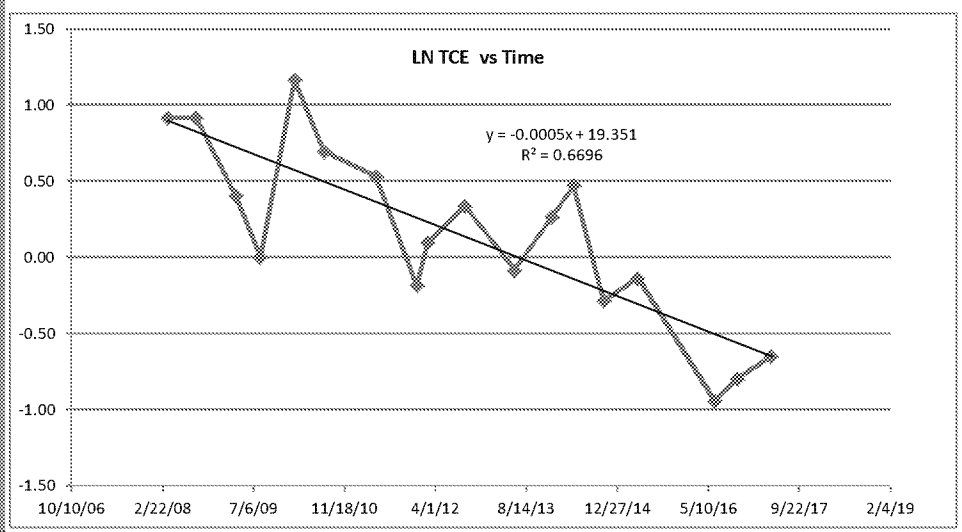
Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Mar 5 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = GM-21D

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	5/17/2009	0.74		0.74
2	8/12/2009	0.53		0.53
3	11/13/2009	0.67		0.67
4	2/8/2010	0.89		0.89
5	4/19/2010	0.87		0.87
6	8/4/2010	1.2		1.2
7	12/13/2010	1.7		1.7
8	5/12/2011	0.55		0.55
9	7/27/2011	0.5		0.5
10	12/12/2011	0.43		0.43
11	2/14/2012	0.36		0.36
12	5/9/2012	0.43		0.43
13	12/3/2012	2		2
14	5/29/2013	1.8		1.8
15	6/3/2014	0.97		0.97
16	4/24/2015	2.6		2.6
17	5/5/2016	1.7		1.7
18	5/3/2017	1.5		1.5

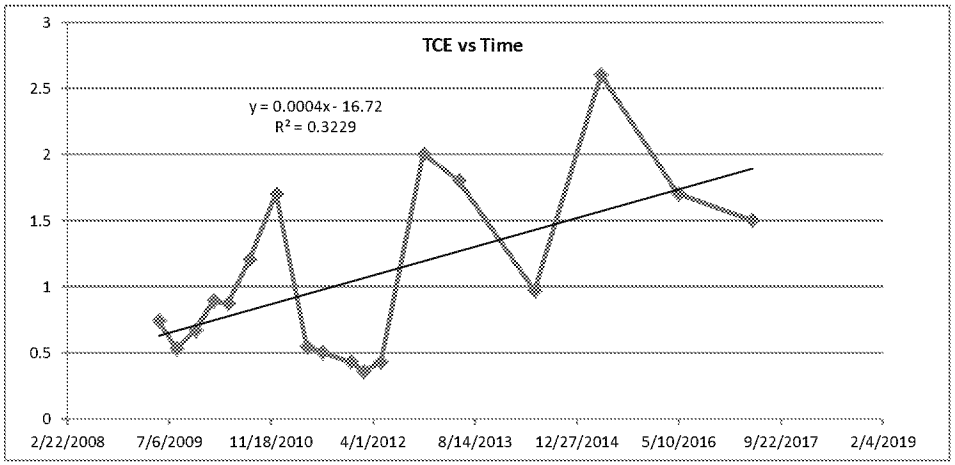
Mann Kendall Statistic (S) =	35.0		0.00043
Number of Rounds (n) =	18		
Average =	1.08		
Standard Deviation =	0.655		
Coefficient of Variation(CV)=	0.607		

Error Check, Blank if No Errors Detected

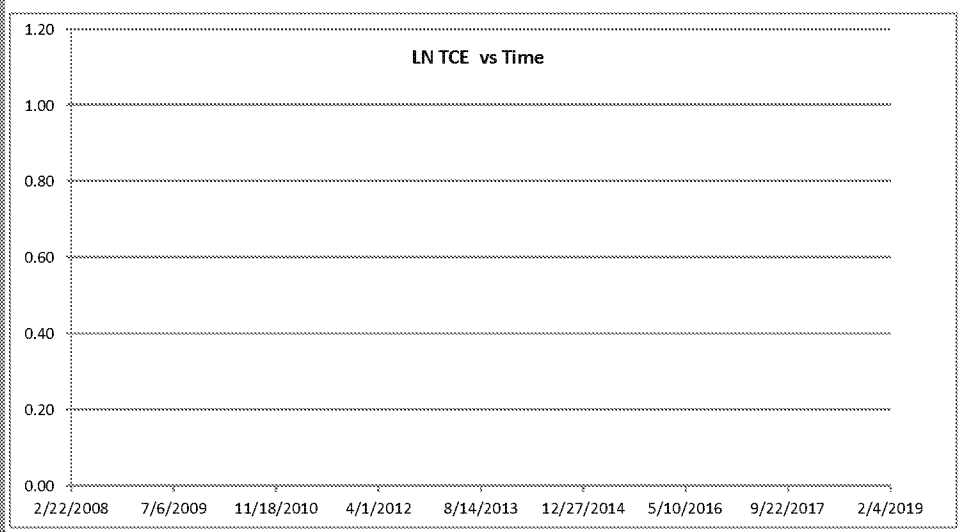
Trend ≥ 80% Confidence Level	INCREASING		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By = BC **Date =** Mar 5 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = GM-39DA

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/18/2008	19	2.944438979	
2	8/20/2008	13	2.564949357	
3	3/16/2009	5.1	1.62924054	
4	8/10/2009	6.5	1.871802177	
5	1/29/2010	10	2.302585093	
6	7/30/2010	5.5	1.704748092	
7	5/9/2011	1.2	0.182321557	
8	12/15/2011	0.69	-0.371063681	
9	3/6/2012	0.74	-0.301105093	
10	8/28/2012	1.1	0.09531018	
11	6/14/2013	2.8	1.029619417	
12	12/11/2013	3.7	1.30833282	
13	5/9/2014	1.2	0.182321557	
14	10/15/2014	0.66	-0.415515444	
15	4/23/2015	1	0	
16	5/3/2016	6.1	1.808288771	
17	10/21/2016	3.4	1.223775432	
18	5/3/2017	1.6	0.470003629	

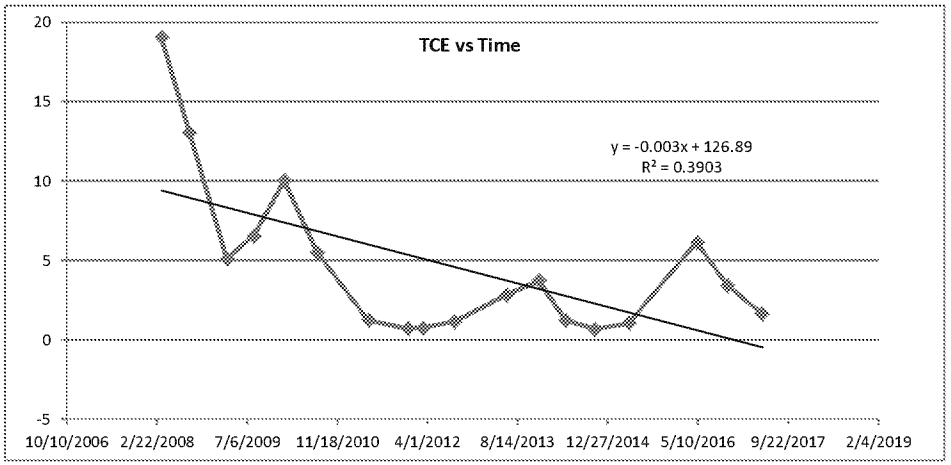
Mann Kendall Statistic (S) =	-56.0	-0.00053	
Number of Rounds (n) =	18		
Average =	4.63		
Standard Deviation =	4.985		
Coefficient of Variation(CV)=	1.077		

Error Check, Blank if No Errors Detected

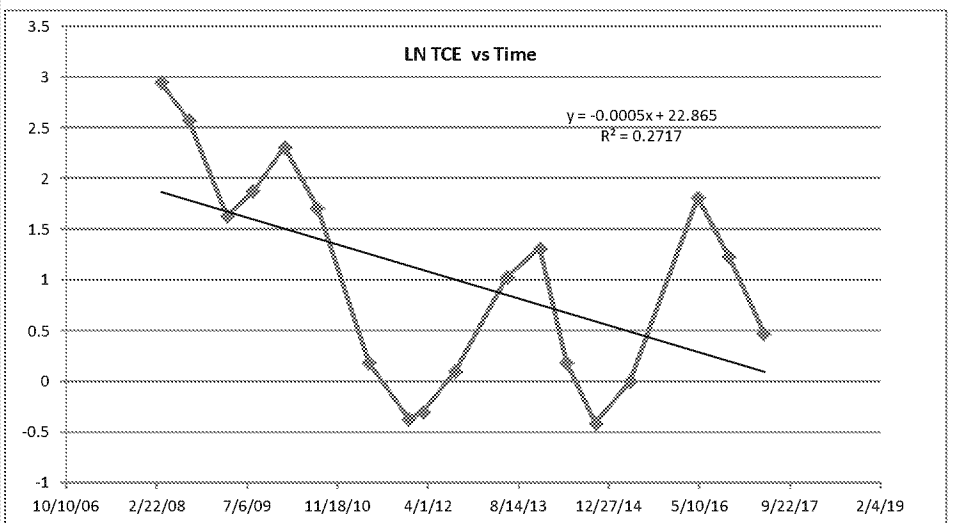
Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Mar 5 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = GM-39DB

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/18/2008	46	3.828641396	
2	8/20/2008	62	4.127134385	
3	3/16/2009	68	4.219507705	
4	8/10/2009	52	3.951243719	
5	1/29/2010	34	3.526360525	
6	7/30/2010	66	4.189654742	
7	5/9/2011	94	4.543294782	
8	12/15/2011	62	4.127134385	
9	3/5/2012	64	4.158883083	
10	8/28/2012	56	4.025351691	
11	6/14/2013	80	4.382026635	
12	12/11/2013	70	4.248495242	
13	5/9/2014	52	3.951243719	
14	10/15/2014	52.7	3.964615456	
15	4/23/2015	43.9	3.78191432	
16	5/3/2016	21	3.044522438	
17	10/21/2016	22.5	3.113515309	
18	5/3/2017	34	3.526360525	

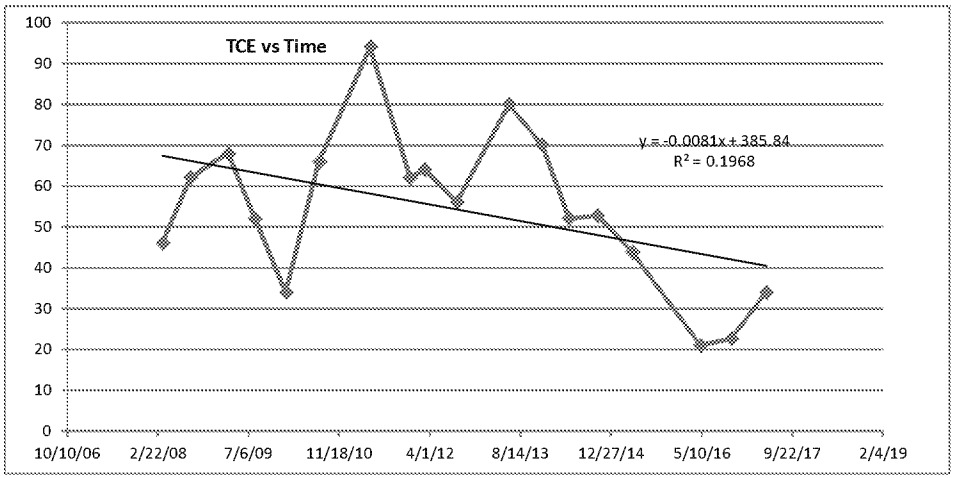
Mann Kendall Statistic (S) =	-44.0	-0.00020	
Number of Rounds (n) =	18		
Average =	54.45		
Standard Deviation =	19.031		
Coefficient of Variation(CV)=	0.350		

Error Check, Blank if No Errors Detected

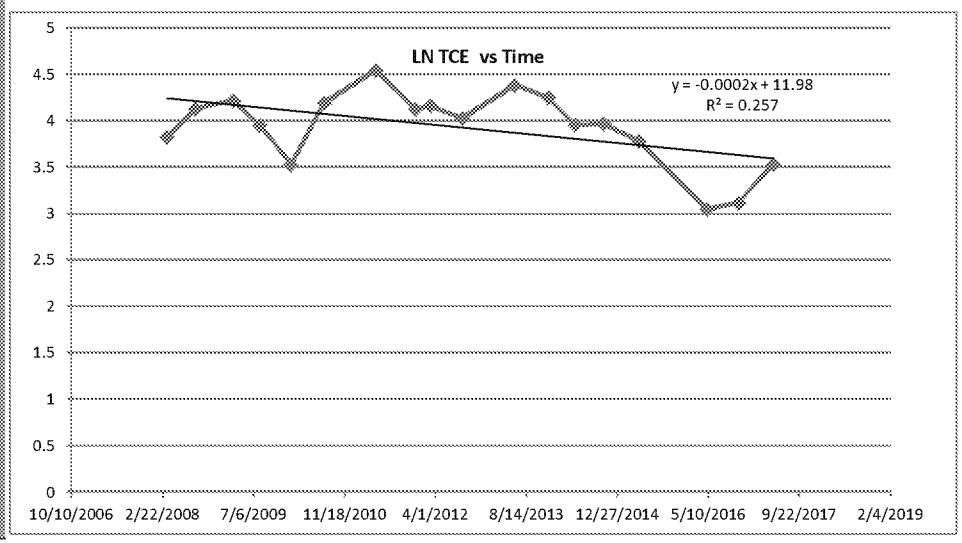
Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Mar 6 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = GM-73D

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/18/2008	6.4		
2	8/21/2008	7.6		
3	2/17/2009	16		
4	8/10/2009	4.6		
5	1/28/2010	3.3		
6	8/3/2010	5.6		
7	5/4/2011	58		
8	12/17/2011	59		
9	2/10/2012	68		
10	8/27/2012	8.9		
11	5/23/2013	23		
12	12/11/2013	19		
13	5/9/2014	11		
14	10/17/2014	14.2		
15	4/17/2015	11.1		
16	6/29/2016	7.9		
17	10/25/2016	4.1		
18	6/29/2017	1.5		

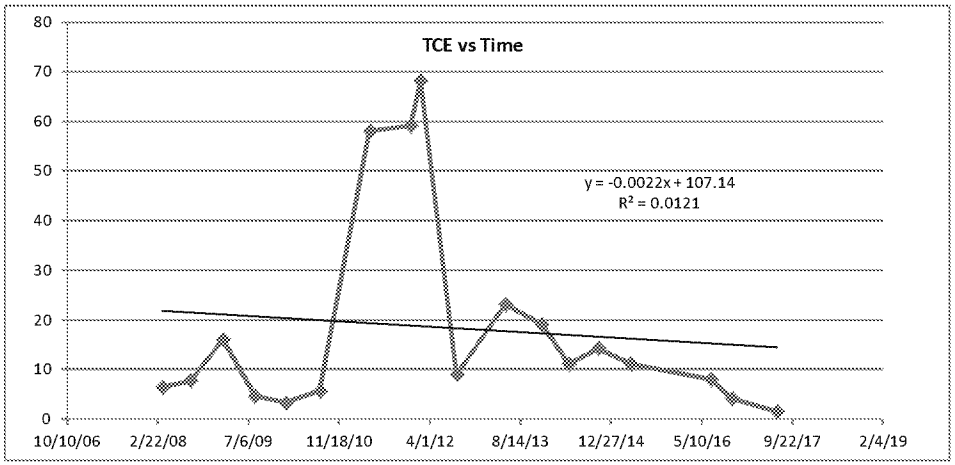
Mann Kendall Statistic (S) =	-11.0		
Number of Rounds (n) =	18		
Average =	18.29		
Standard Deviation =	20.811		
Coefficient of Variation(CV)=	1.138		

Error Check, Blank if No Errors Detected

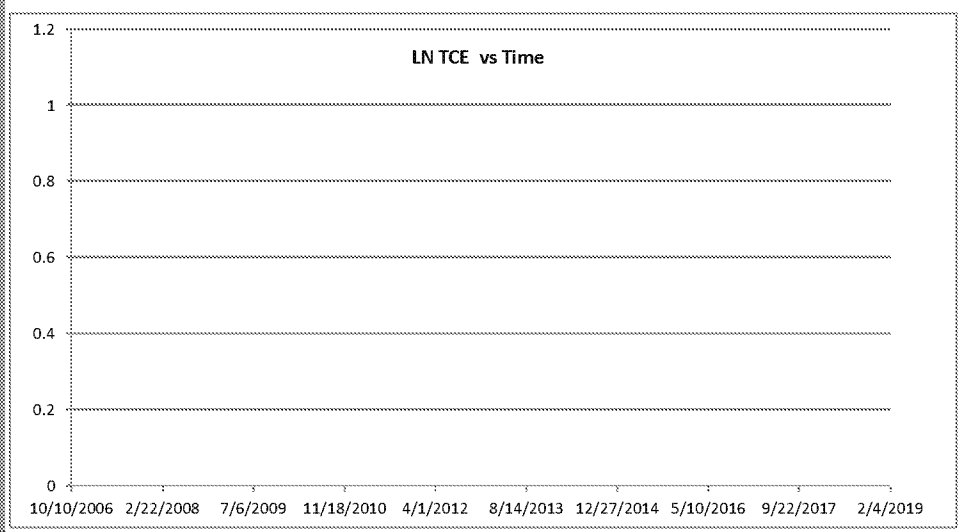
Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	CV > 1 NON-STABLE		

Data Entry By = BC **Date =** Mar 6 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = GM-73D2

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/17/2008	58	4.06	
2	8/21/2008	44	3.78	
3	2/17/2009	40	3.69	
4	8/10/2009	69	4.23	
5	1/28/2010	47	3.85	
6	8/3/2010	53	3.97	
7	5/4/2011	110	4.70	
8	12/17/2011	94	4.54	
9	2/10/2012	93	4.53	
10	8/27/2012	60	4.09	
11	5/23/2013	44	3.78	
12	12/11/2013	29	3.37	
13	5/8/2014	25	3.22	
14	10/17/2014	40	3.69	
15	4/17/2015	46.7	3.84	
16	5/6/2016	33.2	3.50	
17	10/25/2016	37	3.61	
18	4/14/2017	35.7	3.58	

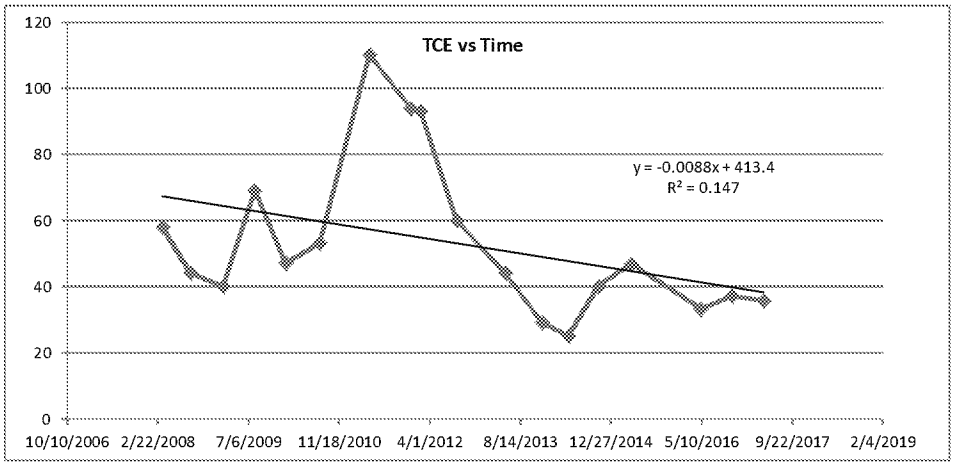
Mann Kendall Statistic (S) =	-55.0	-0.00018	
Number of Rounds (n) =	18		
Average =	53.26		
Standard Deviation =	23.938		
Coefficient of Variation(CV)=	0.450		

Error Check, Blank if No Errors Detected

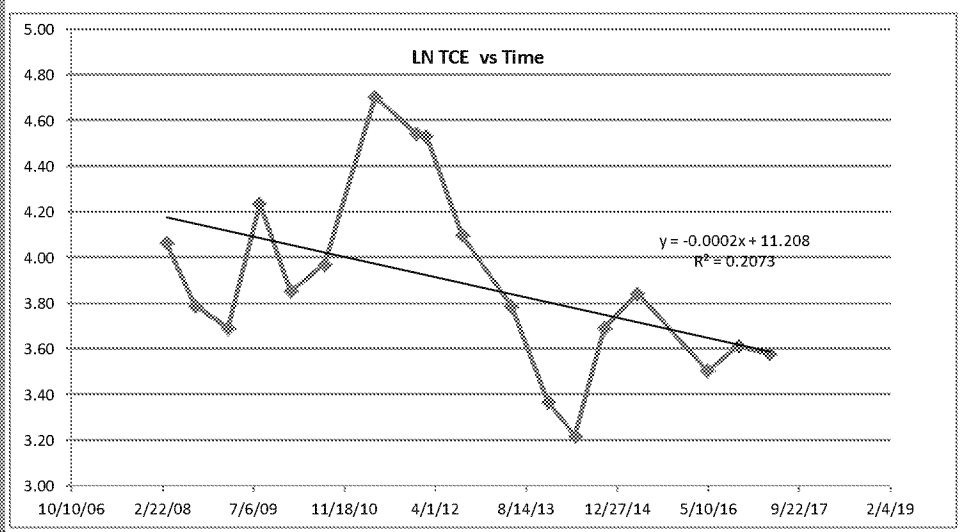
Trend ≥ 80% Confidence Level	**DECREASING**		
Trend ≥ 90% Confidence Level	**DECREASING**		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By = BC | **Date =** Mar 6 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = GM-74D

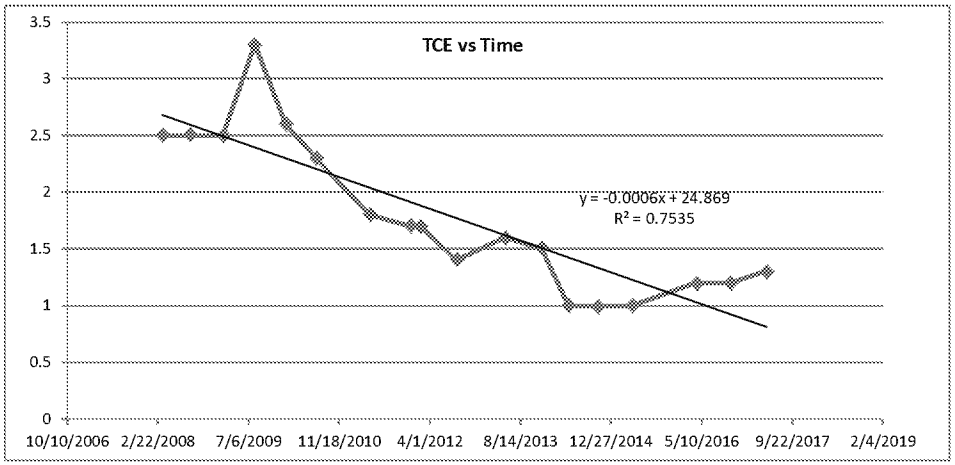
Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/17/2008	2.5	0.92	
2	8/18/2008	2.5	0.92	
3	2/17/2009	2.5	0.92	
4	8/10/2009	3.3	1.19	
5	1/28/2010	2.6	0.96	
6	7/14/2010	2.3	0.83	
7	5/4/2011	1.8	0.59	
8	12/16/2011	1.7	0.53	
9	2/10/2012	1.7	0.53	
10	8/28/2012	1.4	0.34	
11	5/23/2013	1.6	0.47	
12	12/9/2013	1.5	0.41	
13	5/8/2014	1	0.00	
14	10/17/2014	0.99	-0.01	
15	4/23/2015	1	0.00	
16	4/13/2016	1.2	0.18	
17	10/19/2016	1.2	0.18	
18	5/2/2017	1.3	0.26	
	Mann Kendall Statistic (S) =	-107.0	-0.00031	
	Number of Rounds (n) =	18		
	Average =	1.78		
	Standard Deviation =	0.678		
	Coefficient of Variation(CV)=	0.380		

Error Check, Blank if No Errors Detected

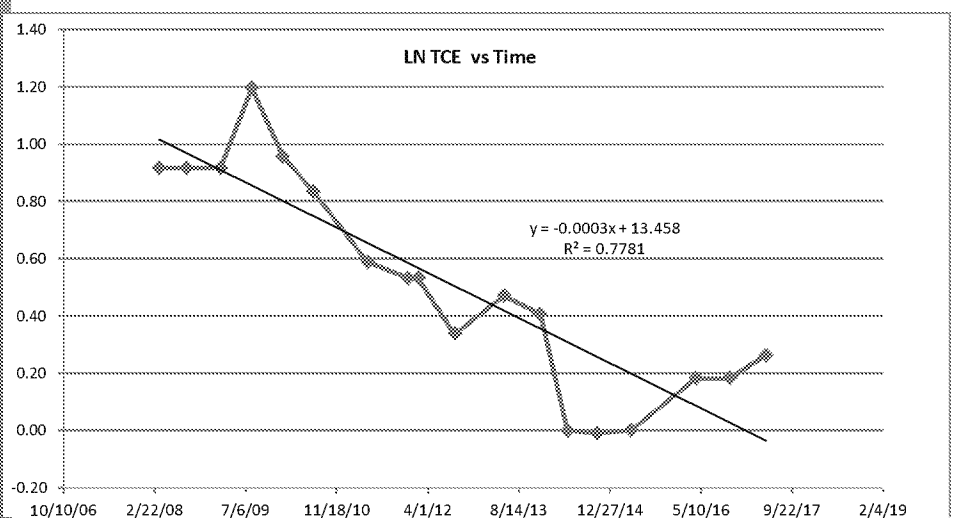
Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Mar 6 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = GM-74D2

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/17/2008	7.3		
2	8/18/2008	6.4		
3	2/17/2009	8.6		
4	8/10/2009	7.3		
5	1/28/2010	6.4		
6	7/14/2010	6.6		
7	5/4/2011	8.8		
8	12/16/2011	6.9		
9	2/10/2012	6.4		
10	8/28/2012	6.3		
11	5/23/2013	8.2		
12	12/9/2013	7		
13	5/8/2014	6.3		
14	10/17/2014	7.2		
15	4/23/2015	7.2		
16	5/5/2016	7.2		
17	10/25/2016	6.9		
18	4/14/2017	7.8		

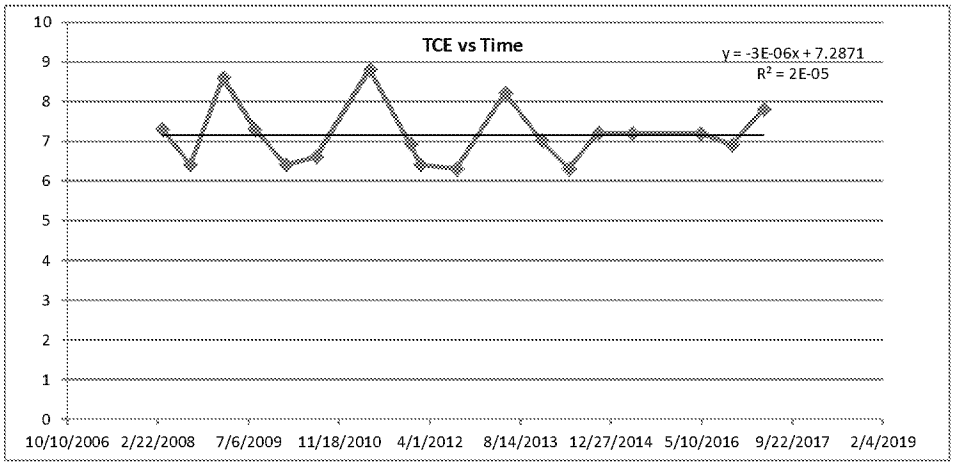
Mann Kendall Statistic (S) =	0.0	#DIV/0!	
Number of Rounds (n) =	18		
Average =	7.16		
Standard Deviation =	0.766		
Coefficient of Variation(CV)=	0.107		

Error Check, Blank if No Errors Detected

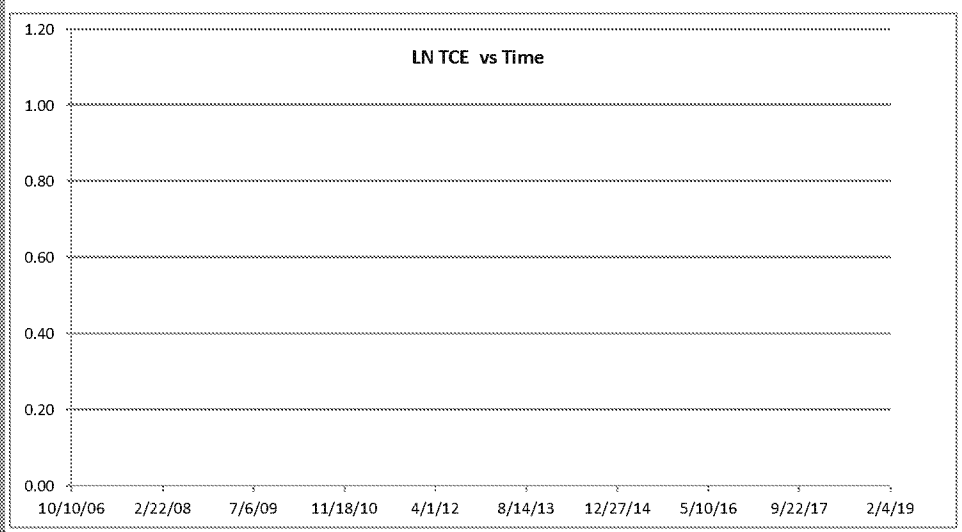
Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	CV <= 1 STABLE		

Data Entry By =	BC	Date =	Mar 6 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = GM-74I

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/17/2008	2.5	0.916290732	
2	8/18/2008	2.5	0.916290732	
3	2/17/2009	2.5	0.916290732	
4	8/10/2009	2.5	0.916290732	
5	1/28/2010	2.5	0.916290732	
6	7/14/2010	2.5	0.916290732	
7	5/4/2011	2.5	0.916290732	
8	12/16/2011	0.28	-1.272965676	
9	2/10/2012	2.5	0.916290732	
10	8/28/2012	0.34	-1.078809661	
11	5/23/2013	0.35	-1.049822124	
12	12/9/2013	0.79	-0.235722334	
13	5/8/2014	0.3	-1.203972804	
14	10/17/2014	0.63	-0.46203546	
15	4/21/2015	0.76	-0.274436846	
16	4/13/2016	0.62	-0.478035801	
17	10/24/2016	0.73	-0.314710745	
18	5/2/2017	0.6	-0.510825624	

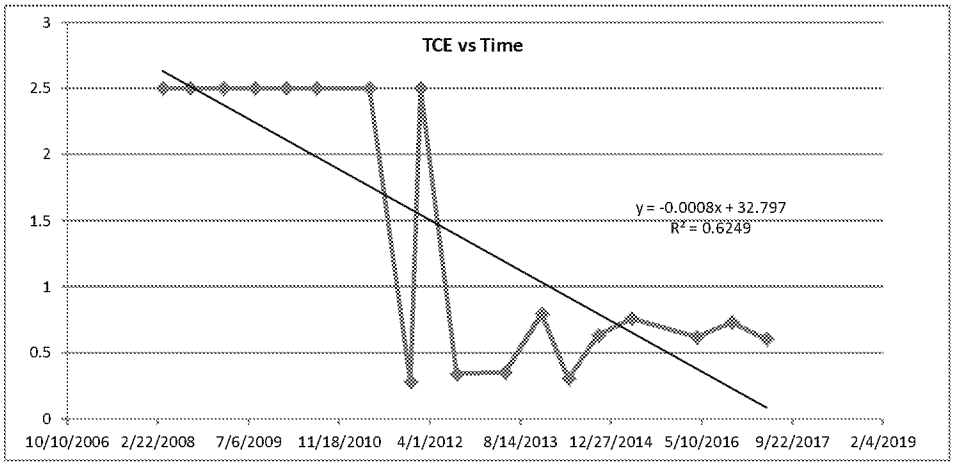
Mann Kendall Statistic (S) =	-63.0	-0.00057	
Number of Rounds (n) =	18		
Average =	1.41		
Standard Deviation =	1.013		
Coefficient of Variation(CV)=	0.718		

Error Check, Blank if No Errors Detected

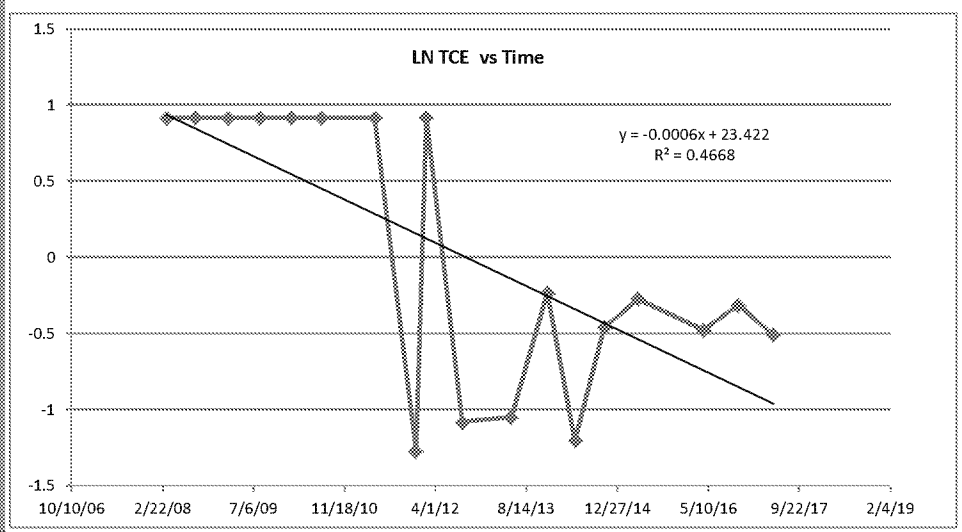
Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Mar 5 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = GM-75D2

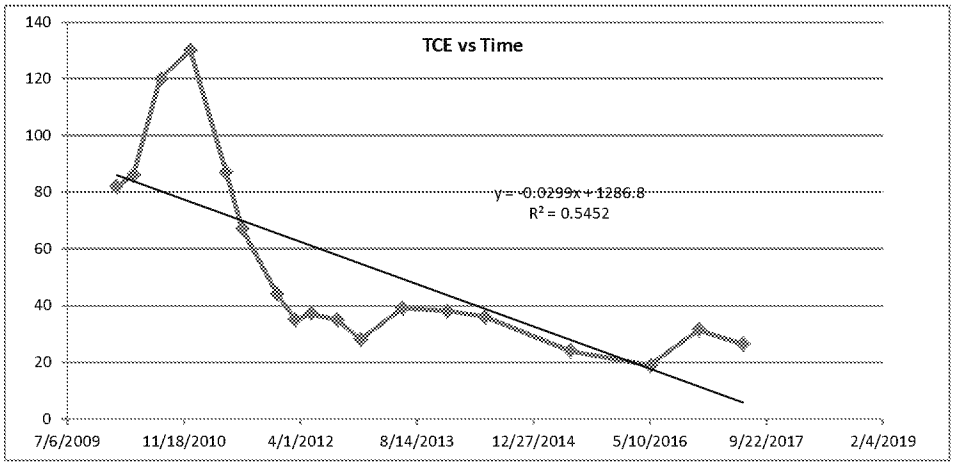
Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	2/3/2010	82	4.41	
2	4/15/2010	86	4.45	
3	8/10/2010	120	4.79	
4	12/15/2010	130	4.87	
5	5/18/2011	87	4.47	
6	7/27/2011	67	4.20	
7	12/23/2011	44	3.78	
8	3/9/2012	35	3.56	
9	5/16/2012	37	3.61	
10	9/6/2012	35	3.56	
11	12/14/2012	28	3.33	
12	6/12/2013	39	3.66	
13	12/19/2013	38	3.64	
14	6/2/2014	36	3.58	
15	6/4/2015	23.9	3.17	
16	5/10/2016	18.8	2.93	
17	12/5/2016	31.4	3.45	
18	6/12/2017	26.4	3.27	
	Mann Kendall Statistic (S) =	-102.0	-0.00056	
	Number of Rounds (n) =	18		
	Average =	53.58		
	Standard Deviation =	33.611		
	Coefficient of Variation(CV)=	0.627		

Error Check, Blank if No Errors Detected

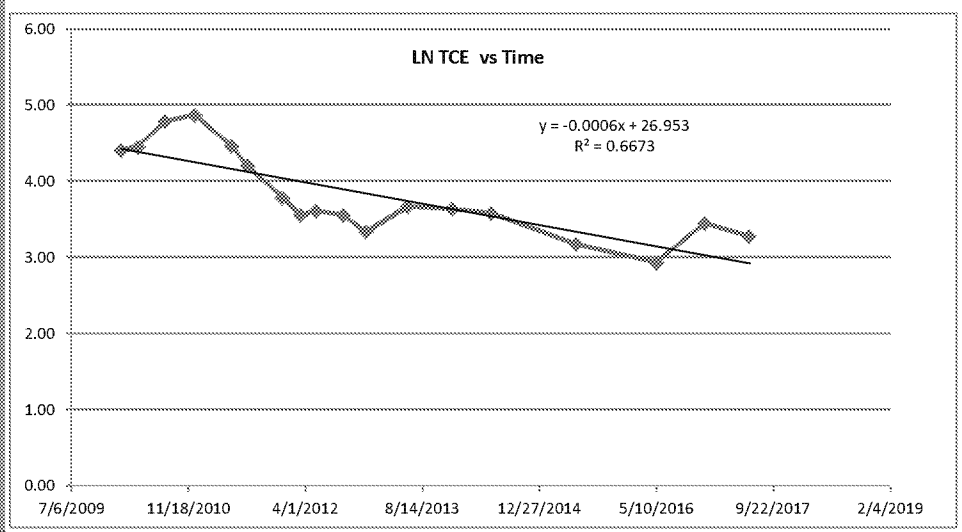
Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Mar 6 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = GM-78I

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/15/2006	0.9		
2	9/26/2006	0.6		
3	2/8/2007	0.69		
4	9/25/2007	0.25		
5	3/12/2008	0.25		
6	8/14/2008	0.25		
7	2/24/2009	0.25		
8	8/17/2009	0.25		
9	1/29/2010	0.25		
10	7/16/2010	0.25		
11	5/5/2011	0.25		
12	12/9/2011	0.25		
13	2/16/2012	0.25		
14	5/29/2013	0.31		
15	5/15/2014	0.58		
16	6/1/2015	0.39		
17	4/28/2016	0.38		
18	5/5/2017	0.44		

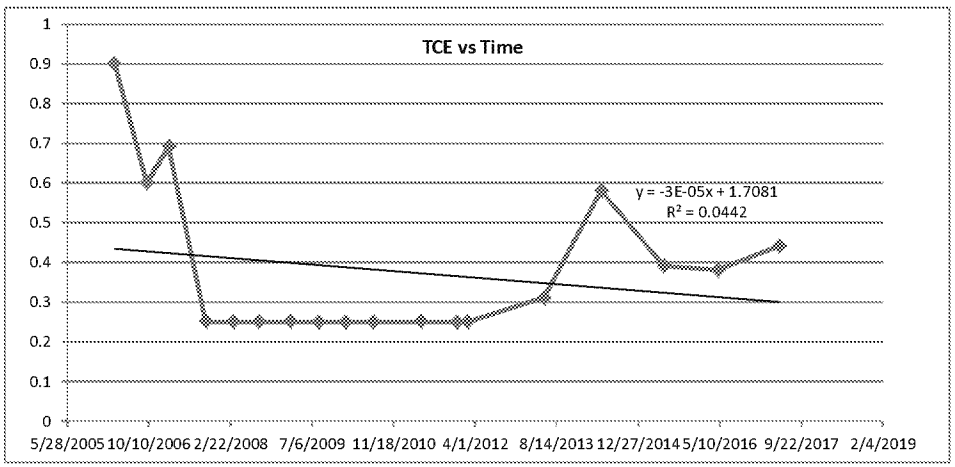
Mann Kendall Statistic (S) =	6.0	#DIV/0!	
Number of Rounds (n) =	18		
Average =	0.38		
Standard Deviation =	0.193		
Coefficient of Variation(CV)=	0.511		

Error Check, Blank if No Errors Detected

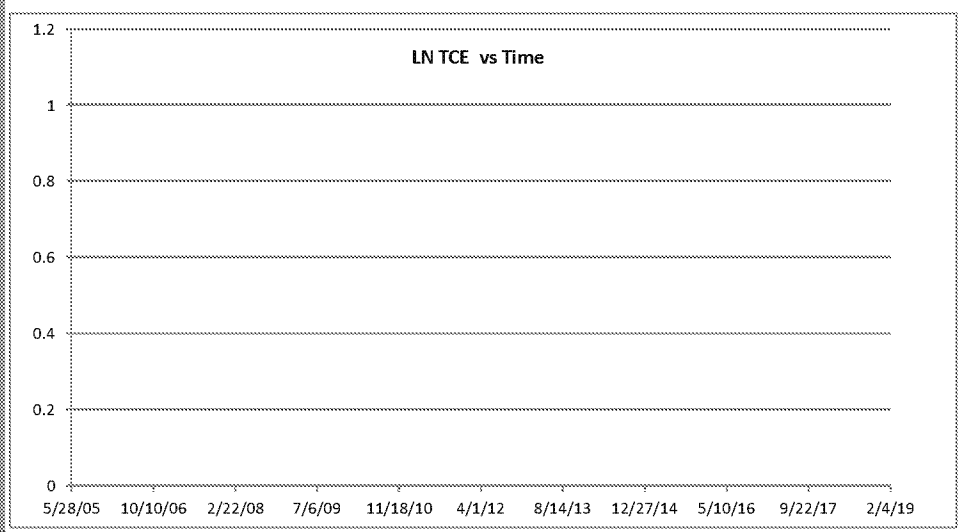
Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	**CV <= 1 STABLE**		

Data Entry By = BC | **Date =** Mar 6 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = GM-78S

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/15/2006	0.3		
2	9/26/2006	0.9		
3	2/8/2007	1.1		
4	9/25/2007	2.5		
5	3/12/2008	2.5		
6	8/14/2008	2.5		
7	2/24/2009	2.5		
8	8/17/2009	2.5		
9	1/29/2010	0.28		
10	7/16/2010	0.33		
11	5/5/2011	2.5		
12	12/9/2011	2.5		
13	2/16/2012	2.5		
14	5/29/2013	2.5		
15	5/15/2014	2.5		
16	6/1/2015	0.57		
17	4/28/2016	0.45		
18	6/22/2017	0.43		

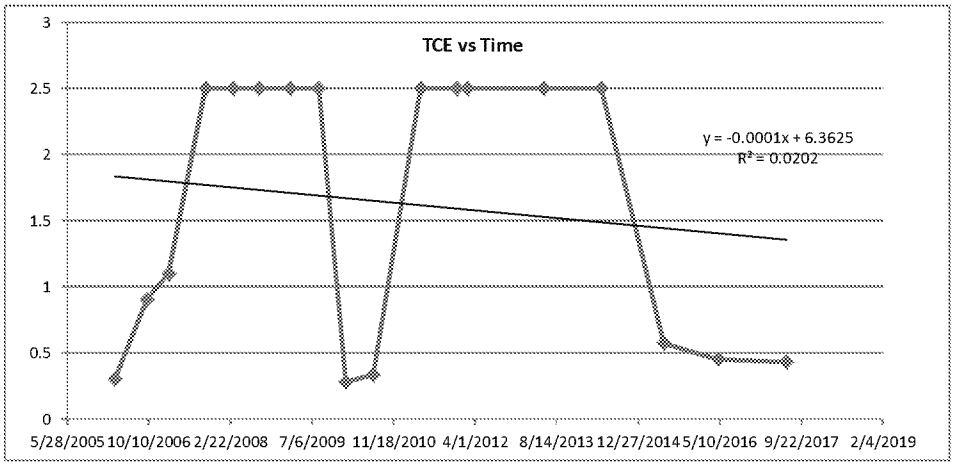
Mann Kendall Statistic (S) =	0.0	#DIV/0!	
Number of Rounds (n) =	18		
Average =	1.63		
Standard Deviation =	1.018		
Coefficient of Variation(CV)=	0.624		

Error Check, Blank if No Errors Detected

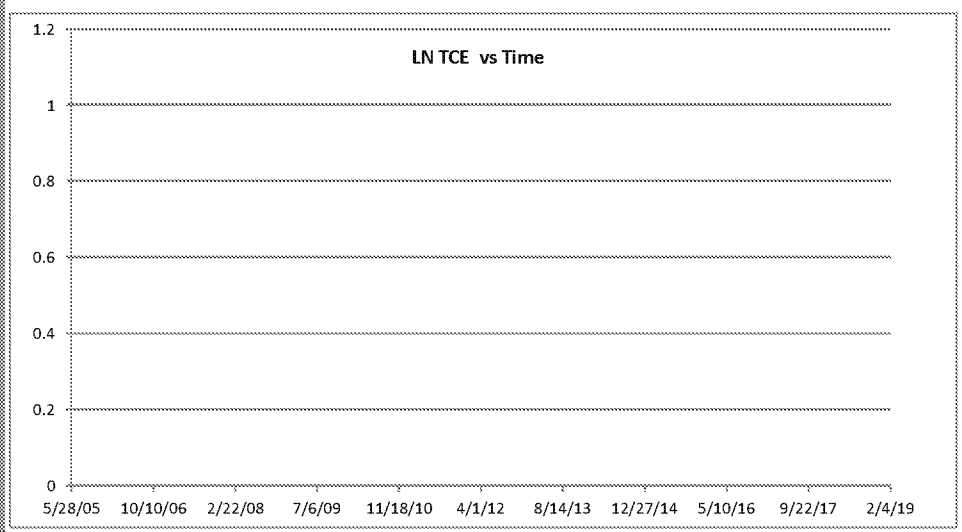
Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	**CV <= 1 STABLE**		

Data Entry By =	BC	**Date =**	March 5 2017

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = GM-79D

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	4/13/2010	34		
2	7/16/2010	35		
3	12/13/2010	31		
4	5/3/2011	2.5		
5	7/26/2011	26		
6	12/26/2011	26		
7	2/14/2012	2.5		
8	5/18/2012	26		
9	9/5/2012	18		
10	12/31/2012	27		
11	5/28/2013	19		
12	12/17/2013	13		
13	5/14/2014	18		
14	10/24/2014	15.5		
15	6/13/2015	18		
16	4/13/2016	25.9		
17	12/9/2016	35.7		
18	6/28/2017	46.9		

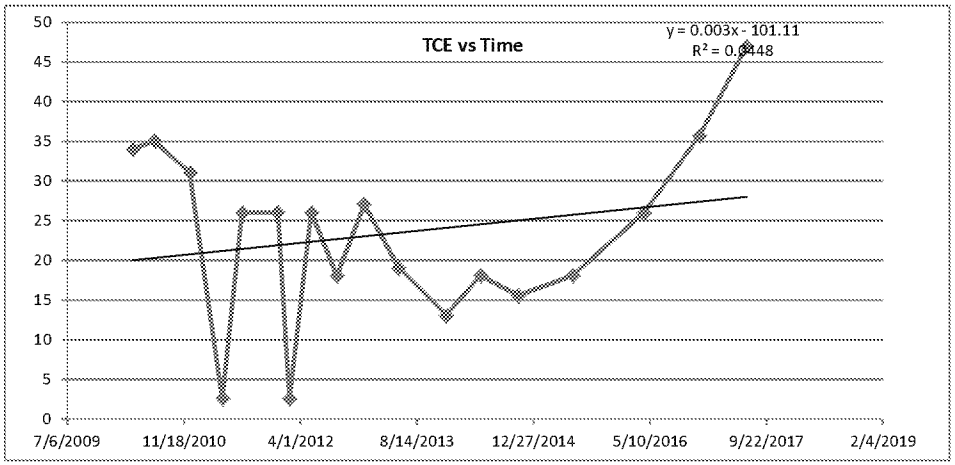
Mann Kendall Statistic (S) =	-8.0	#DIV/0!	
Number of Rounds (n) =	18		
Average =	23.33		
Standard Deviation =	11.372		
Coefficient of Variation(CV)=	0.487		

Error Check, Blank if No Errors Detected

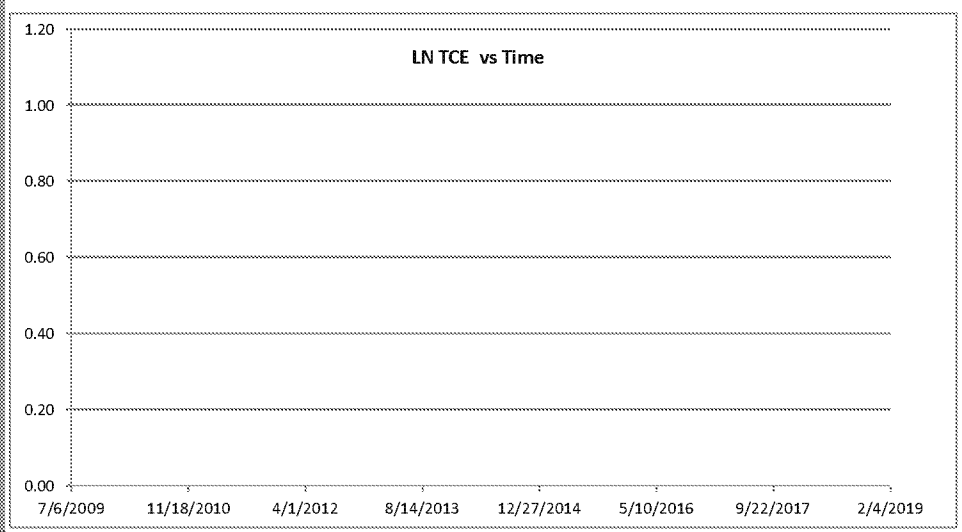
Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	CV <= 1 STABLE		

Data Entry By =	BC	Date =	Mar 6 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = GM-79I

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	1/22/2010	0.25		
2	4/13/2010	0.25		
3	7/16/2010	0.25		
4	12/13/2010	0.25		
5	5/3/2011	28		
6	7/26/2011	0.25		
7	12/26/2011	0.25		
8	2/14/2012	30		
9	5/12/2012	0.25		
10	9/5/2012	0.25		
11	12/31/2012	0.25		
12	5/28/2013	0.23		
13	12/17/2013	0.33		
14	5/14/2014	0.31		
15	10/24/2014	0.25		
16	4/22/2015	0.25		
17	4/13/2016	0.25		
18	6/28/2017	0.45		

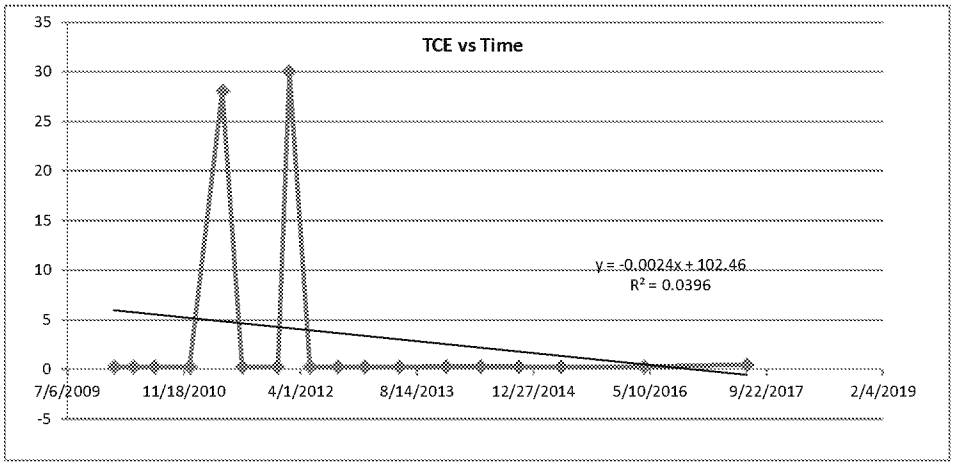
Mann Kendall Statistic (S) =	11.0	#DIV/0!	
Number of Rounds (n) =	18		
Average =	3.46		
Standard Deviation =	9.297		
Coefficient of Variation(CV)=	2.685		

Error Check, Blank if No Errors Detected

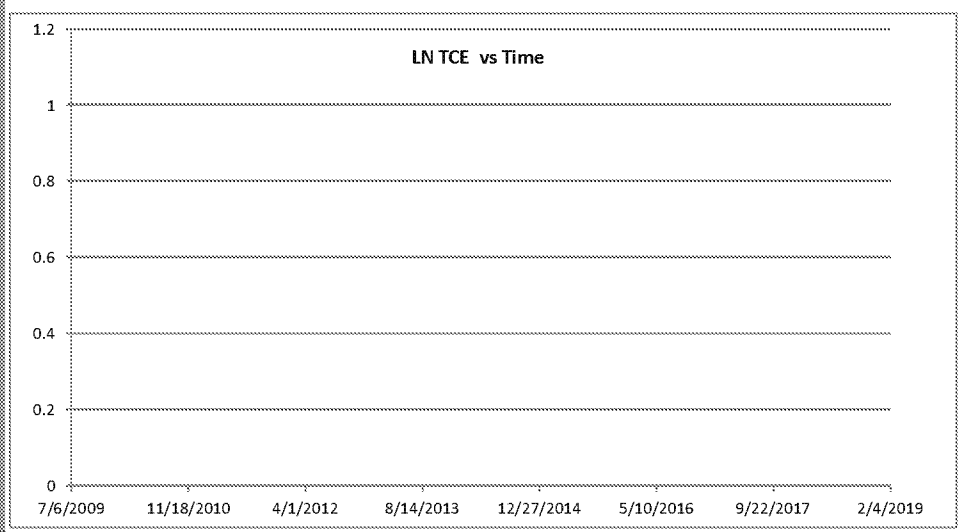
Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	CV > 1 NON-STABLE		

Data Entry By =	BC	**Date =**	Mar 5 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = HN-24I

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	4/12/2005	0.25		
2	9/20/2005	22		
3	3/14/2006	37		
4	9/29/2006	15		
5	2/12/2007	11		
6	3/13/2008	15		
7	9/5/2008	19		
8	2/27/2009	21		
9	8/25/2009	22		
10	8/6/2010	32		
11	5/17/2011	35		
12	12/28/2011	28		
13	2/17/2012	27		
14	6/10/2013	16		
15	5/19/2014	18		
16	6/2/2015	18.9		
17	4/28/2016	15		
18	4/20/2017	11.2		

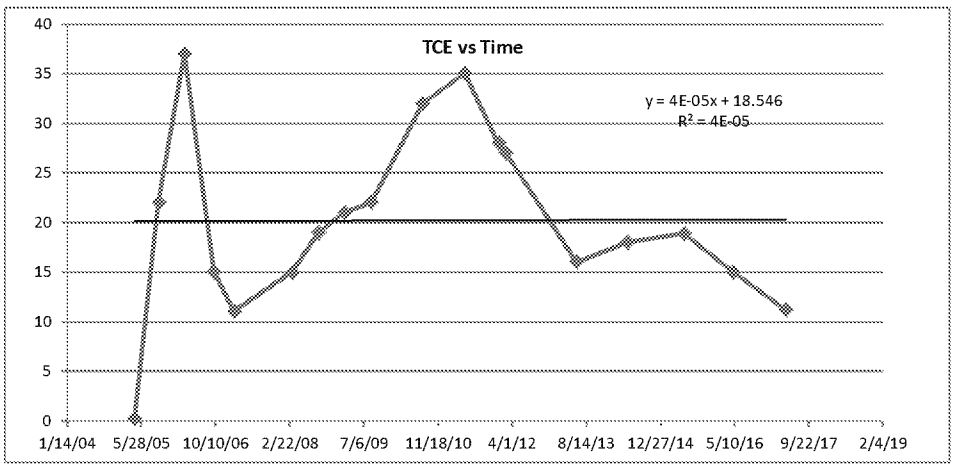
Mann Kendall Statistic (S) =	-1.0	#DIV/0!	
Number of Rounds (n) =	18		
Average =	20.19		
Standard Deviation =	9.156		
Coefficient of Variation(CV)=	0.454		

Error Check, Blank if No Errors Detected

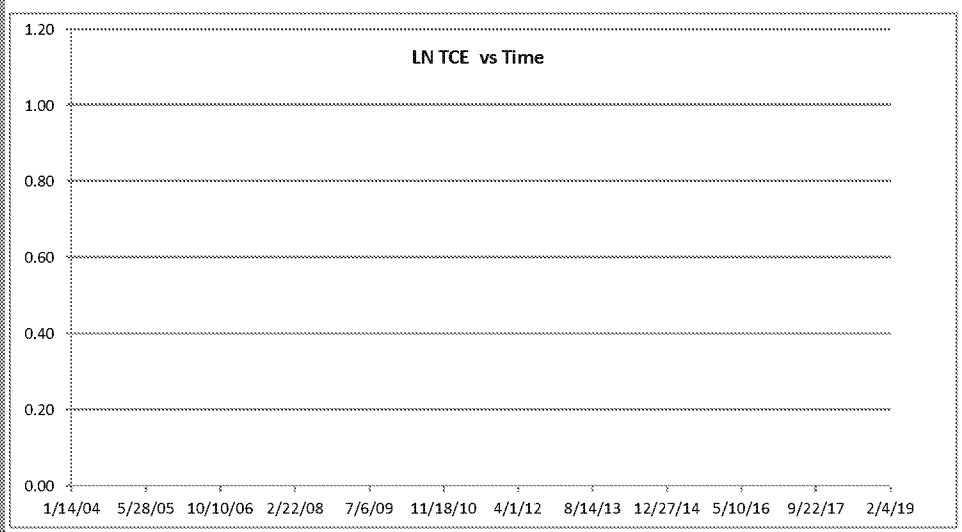
Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	CV <= 1 STABLE		

Data Entry By =	BC	Date =	Mar 5 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = HN-29D

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	9/27/2000	1	0.00	
2	2/1/2001	2.5	0.92	
3	5/31/2001	2.5	0.92	
4	10/4/2001	2	0.69	
5	1/3/2002	1	0.00	
6	4/11/2002	1	0.00	
7	7/9/2002	1	0.00	
8	10/15/2002	1	0.00	
9	12/20/2002	2	0.69	
10	3/20/2003	1	0.00	
11	7/21/2003	1	0.00	
12	10/14/2003	0.9	-0.11	
13	1/7/2004	1	0.00	
14	3/18/2004	0.6	-0.51	
15	10/6/2004	0.8	-0.22	
16	4/14/2005	0.7	-0.36	
17	9/20/2005	0.6	-0.51	
18	3/14/2006	2.5	0.92	

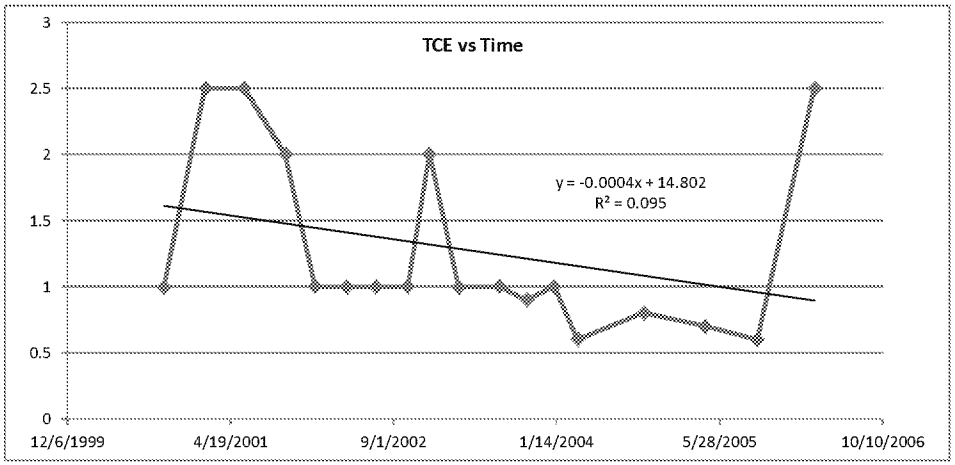
Mann Kendall Statistic (S) =	-68.0	-0.00032	
Number of Rounds (n) =	18		
Average =	1.28		
Standard Deviation =	0.676		
Coefficient of Variation(CV)=	0.527		

Error Check, Blank if No Errors Detected

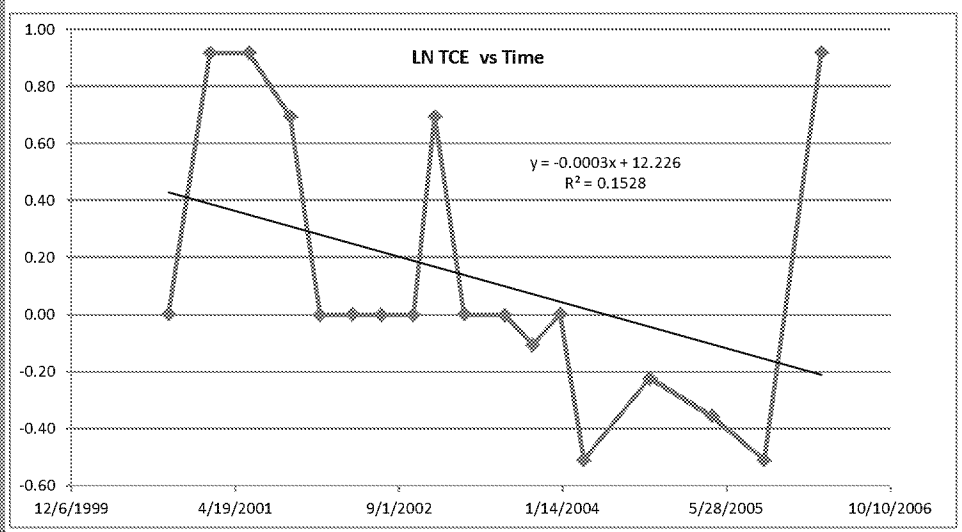
Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By = BAH **Date =** August 25 2015

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = HN-29I

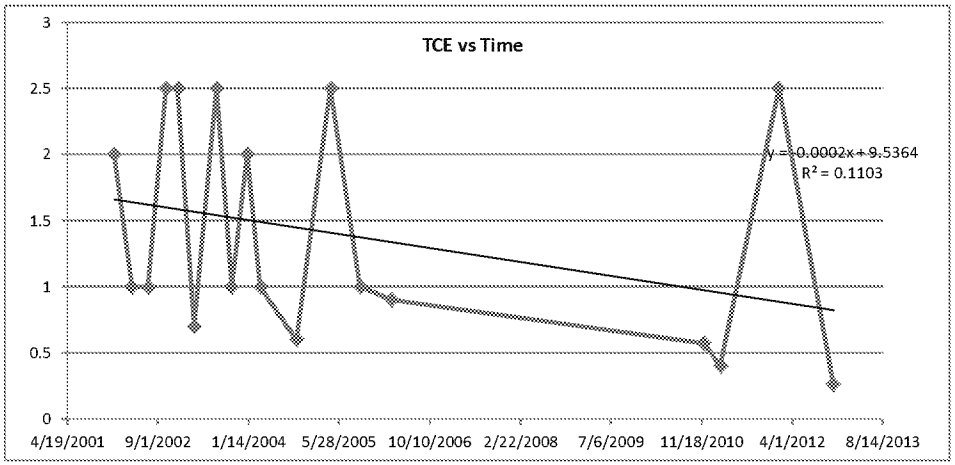
Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	1/3/2002	2	0.69	
2	4/11/2002	1	0.00	
3	7/9/2002	1	0.00	
4	10/15/2002	2.5	0.92	
5	12/20/2002	2.5	0.92	
6	3/20/2003	0.7	-0.36	
7	7/21/2003	2.5	0.92	
8	10/14/2003	1	0.00	
9	1/7/2004	2	0.69	
10	3/18/2004	1	0.00	
11	10/6/2004	0.6	-0.51	
12	4/12/2005	2.5	0.92	
13	9/20/2005	1	0.00	
14	3/14/2006	0.9	-0.11	
15	12/1/2010	0.57	-0.56	
16	3/2/2011	0.4	-0.92	
17	1/19/2012	2.5	0.92	
18	11/14/2012	0.26	-1.35	
	Mann Kendall Statistic (S) =	-52.0	-0.00027	
	Number of Rounds (n) =	18		
	Average =	1.39		
	Standard Deviation =	0.838		
	Coefficient of Variation(CV)=	0.605		

Error Check, Blank if No Errors Detected

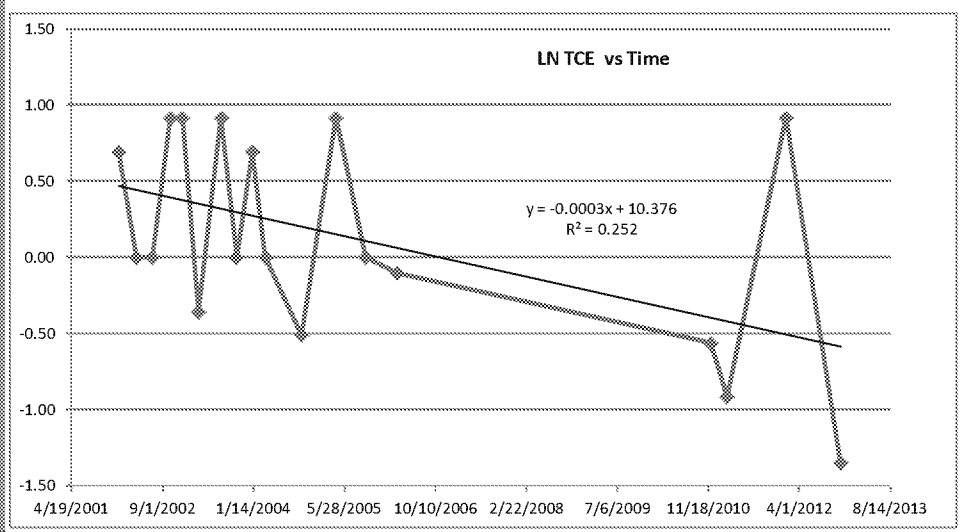
Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By = BAH **Date =** 3-May-17

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = HN-40I

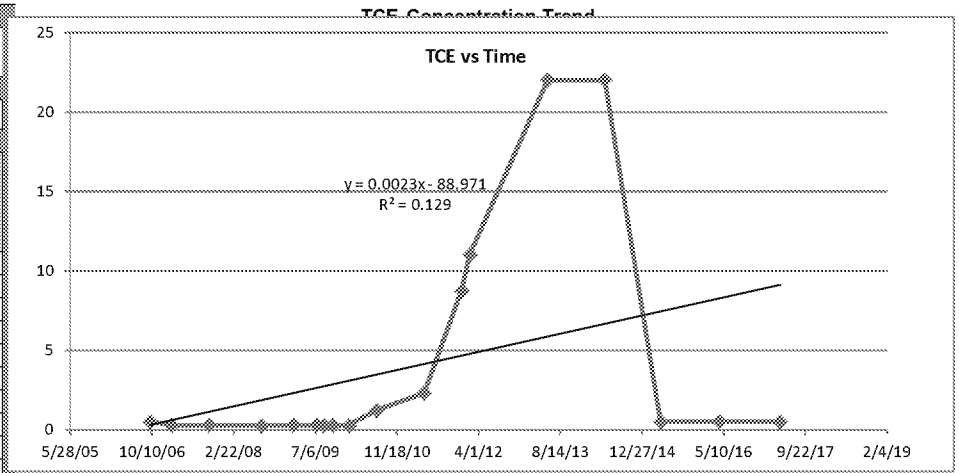
Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	9/27/2006	0.5		0.5
2	2/7/2007	0.25		0.25
3	9/24/2007	0.25		0.25
4	8/12/2008	0.25		0.25
5	2/23/2009	0.25		0.25
6	7/14/2009	0.25		0.25
7	8/24/2009	0.25		0.25
8	10/22/2009	0.25		0.25
9	1/28/2010	0.25		0.25
10	7/15/2010	1.2		1.2
11	5/3/2011	2.3		2.3
12	12/19/2011	8.7		8.7
13	2/7/2012	11		11
14	5/28/2013	22		22
15	5/12/2014	22		22
16	4/20/2015	0.5		0.5
17	4/13/2016	0.5		0.5
18	4/19/2017	0.5		0.5

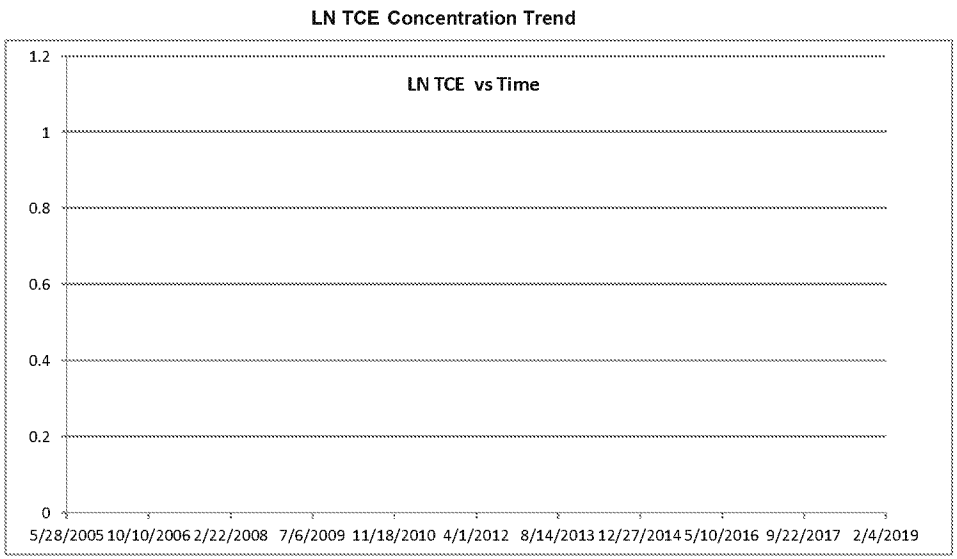
Mann Kendall Statistic (S) =	66.0		0.00229
Number of Rounds (n) =	18		
Average =	3.96		
Standard Deviation =	7.241		
Coefficient of Variation(CV)=	1.831		

Error Check, Blank if No Errors Detected

Trend ≥ 80% Confidence Level	INCREASING		
Trend ≥ 90% Confidence Level	INCREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Mar 5 2018





Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = HN-42I

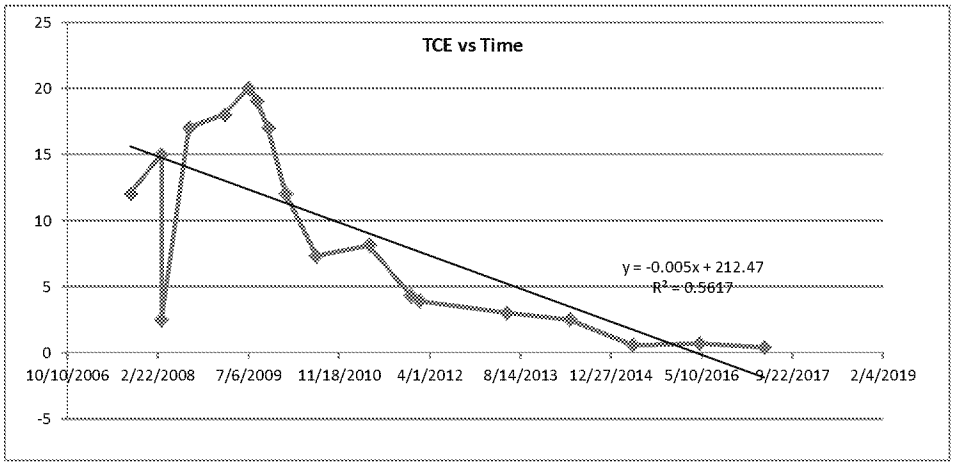
Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	9/24/2007	12	2.48	
2	3/12/2008	15	2.71	
3	3/13/2008	2.5	0.92	
4	8/12/2008	17	2.83	
5	2/23/2009	18	2.89	
6	7/8/2009	20	3.00	
7	8/20/2009	19	2.94	
8	10/21/2009	17	2.83	
9	1/28/2010	12	2.48	
10	7/15/2010	7.3	1.99	
11	5/2/2011	8.1	2.09	
12	12/17/2011	4.3	1.46	
13	2/6/2012	3.9	1.36	
14	5/28/2013	3	1.10	
15	5/12/2014	2.5	0.92	
16	4/27/2015	0.56	-0.58	
17	4/26/2016	0.71	-0.34	
18	4/19/2017	0.42	-0.87	
	Mann Kendall Statistic (S) =	-92.0	-0.00103	
	Number of Rounds (n) =	18		
	Average =	9.07		
	Standard Deviation =	7.153		
	Coefficient of Variation(CV)=	0.788		

Error Check, Blank if No Errors Detected

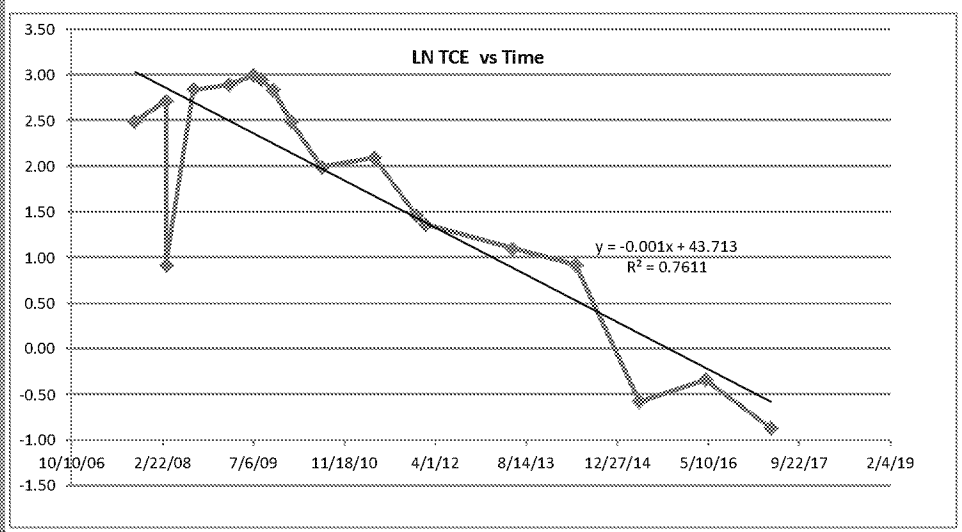
Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Mar 5 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE103D1

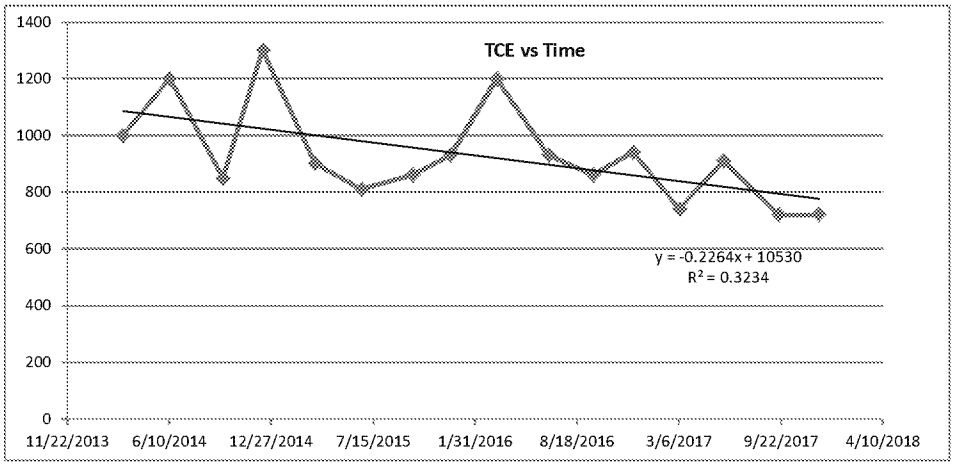
Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/11/2014	1000	6.91	
2	6/11/2014	1200	7.09	
3	9/23/2014	850	6.75	
4	12/10/2014	1300	7.17	
5	3/23/2015	900	6.80	
6	6/22/2015	810	6.70	
7	9/30/2015	860	6.76	
8	12/14/2015	930	6.84	
9	3/14/2016	1200	7.09	
10	6/23/2016	930	6.84	
11	9/19/2016	860	6.76	
12	12/6/2016	940	6.85	
13	3/7/2017	740	6.61	
14	6/1/2017	910	6.81	
15	9/18/2017	720	6.58	
16	12/5/2017	720	6.58	
17				
18				

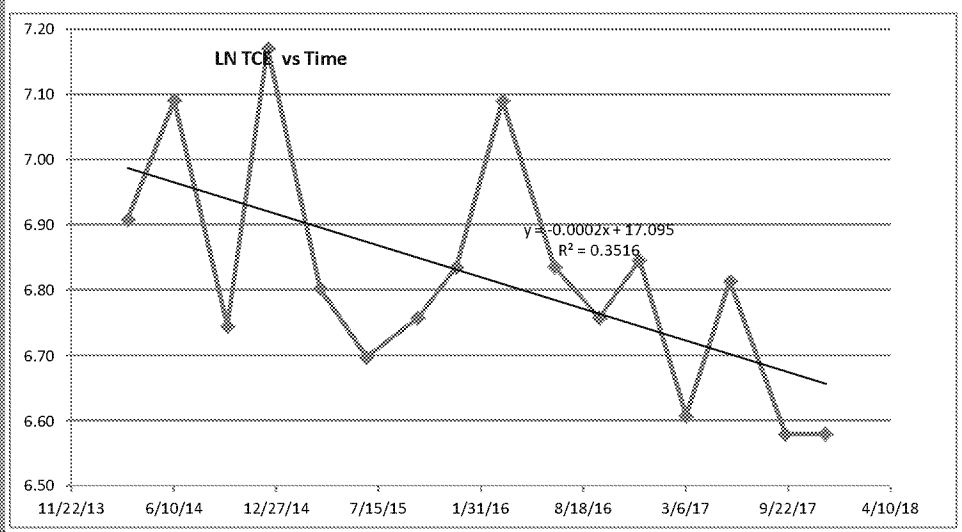
Mann Kendall Statistic (S) =	-44.0	-0.00024	
Number of Rounds (n) =	16		
Average =	929.38		
Standard Deviation =	172.026		
Coefficient of Variation(CV)=	0.185		

Error Check, Blank if No Errors Detected

Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Feb 27 2018





Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE103D2

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/11/2014	750	6.620073207	
2	6/11/2014	670	6.507277712	
3	9/23/2014	1300	7.170119543	
4	12/10/2014	930	6.835184586	
5	3/23/2015	940	6.845879875	
6	6/22/2015	770	6.646390515	
7	9/30/2015	830	6.721425701	
8	12/14/2015	620	6.429719478	
9	3/14/2016	860	6.756932389	
10	6/23/2016	890	6.791221463	
11	9/19/2016	810	6.697034248	
12	12/6/2016	780	6.65929392	
13	3/7/2017	700	6.551080335	
14	6/1/2017	560	6.327936784	
15	9/18/2017	480	6.173786104	
16	12/13/2017	530	6.272877007	
17				
18				

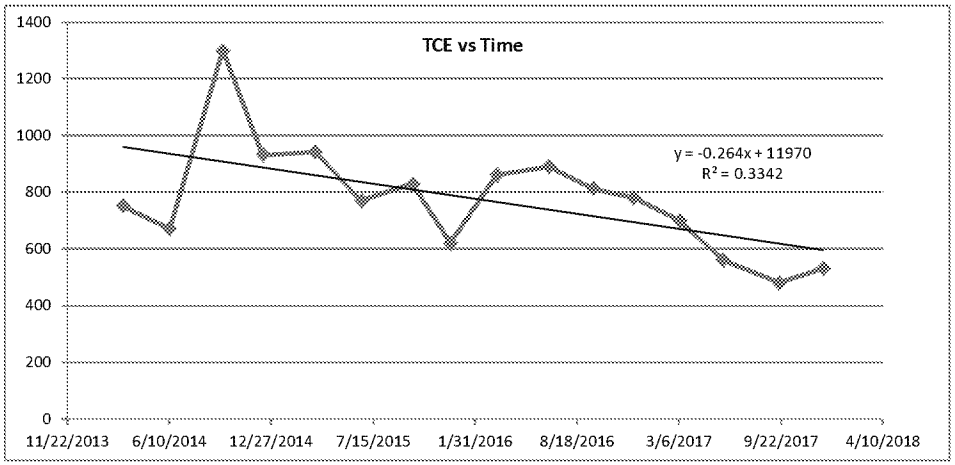
Mann Kendall Statistic (S) =	-52.0	-0.00035	
Number of Rounds (n) =	16		
Average =	776.25		
Standard Deviation =	197.682		
Coefficient of Variation(CV)=	0.255		

Error Check, Blank if No Errors Detected

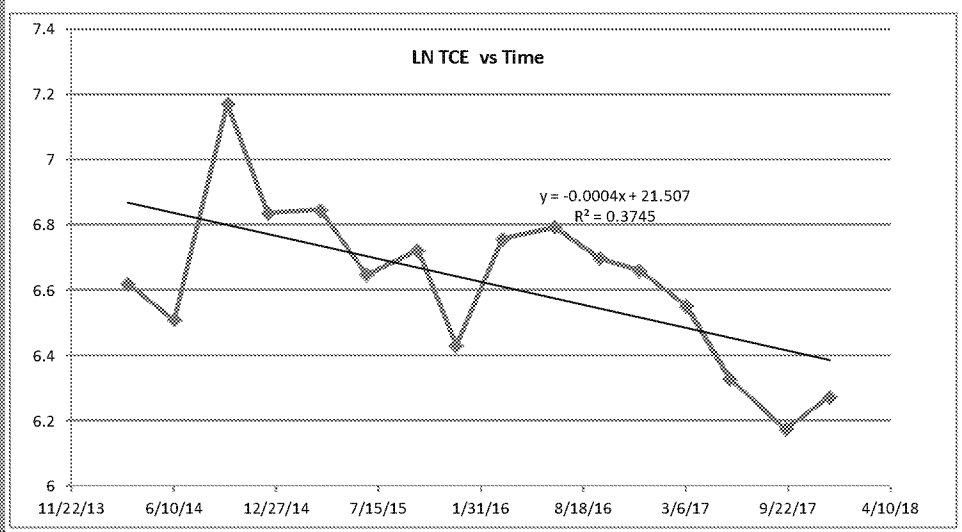
Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Mar 5 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE103D3

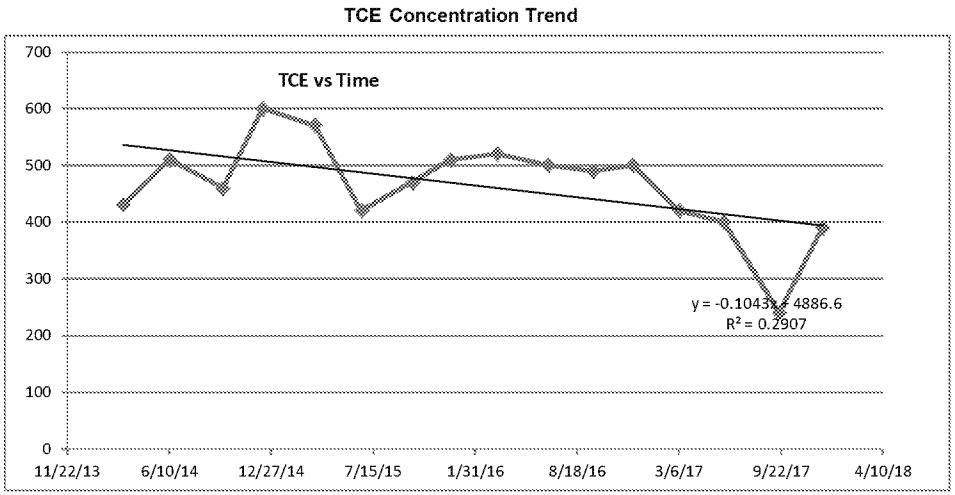
Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/11/2014	430	6.063785209	
2	6/11/2014	510	6.234410726	
3	9/23/2014	460	6.131226489	
4	12/10/2014	600	6.396929655	
5	3/23/2015	570	6.345636361	
6	6/22/2015	420	6.040254711	
7	9/30/2015	470	6.152732695	
8	12/14/2015	510	6.234410726	
9	3/14/2016	520	6.253828812	
10	6/23/2016	500	6.214608098	
11	9/19/2016	490	6.194405391	
12	12/6/2016	500	6.214608098	
13	3/7/2017	420	6.040254711	
14	6/1/2017	400	5.991464547	
15	9/18/2017	240	5.480638923	
16	12/13/2017	390	5.966146739	
17				
18				

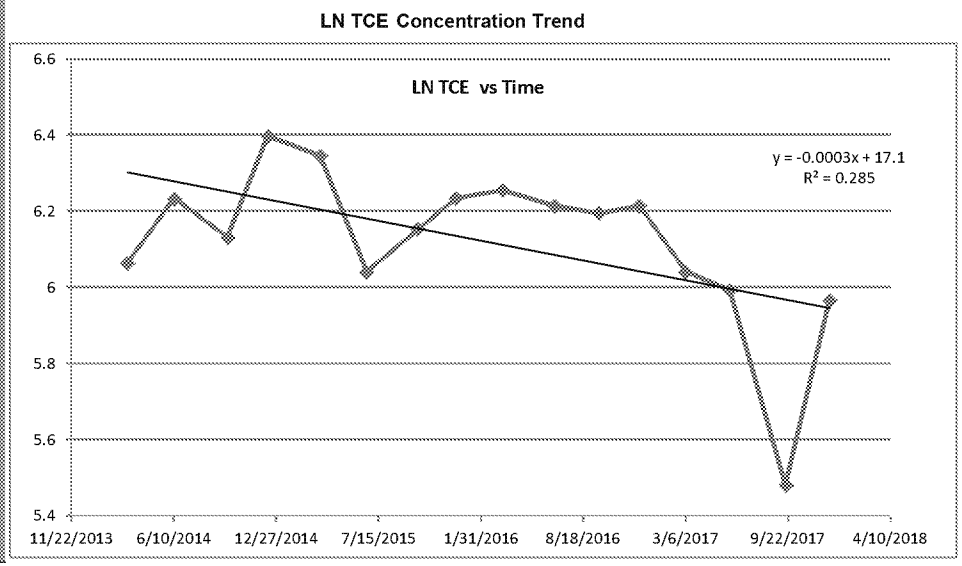
Mann Kendall Statistic (S) =	-47.0	-0.00026	
Number of Rounds (n) =	16		
Average =	464.38		
Standard Deviation =	83.743		
Coefficient of Variation(CV)=	0.180		

Error Check, Blank if No Errors Detected

Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Feb 27 2018





Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE104D1

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/12/2014	150	5.01	
2	6/12/2014	160	5.08	
3	9/24/2014	140	4.94	
4	12/11/2014	140	4.94	
5	3/23/2015	110	4.70	
6	6/23/2015	100	4.61	
7	9/25/2015	110	4.70	
8	12/15/2015	110	4.70	
9	3/15/2016	100	4.61	
10	6/21/2016	92	4.52	
11	9/1/2016	93	4.53	
12	12/1/2016	84	4.43	
13	3/1/2017	79	4.37	
14	6/1/2017	77	4.34	
15	9/19/2017	65	4.17	
16	12/5/2017	69	4.23	
17				
18				

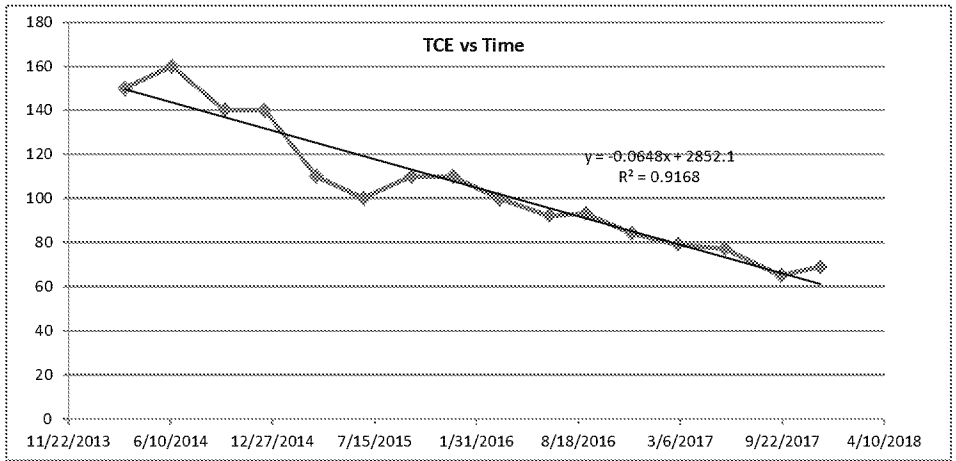
Mann Kendall Statistic (S) =	-105.0	-0.00062	
Number of Rounds (n) =	16		
Average =	104.94		
Standard Deviation =	29.138		
Coefficient of Variation(CV)=	0.278		

Error Check, Blank if No Errors Detected

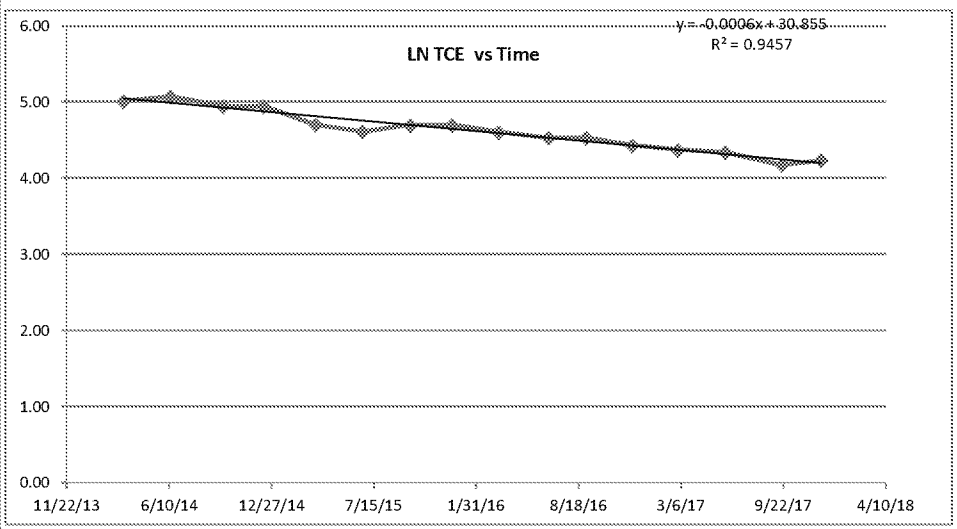
Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By = BC **Date =** Mar 1 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE104D2

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/12/2014	2.6		2.6
2	6/12/2014	1.8		1.8
3	9/24/2014	2.3		2.3
4	12/11/2014	3.4		3.4
5	3/23/2015	3		3
6	6/23/2015	4.3		4.3
7	9/25/2015	4.2		4.2
8	12/15/2015	6.8		6.8
9	3/15/2016	8.4		8.4
10	6/21/2016	9		9
11	9/1/2016	12		12
12	12/1/2016	10		10
13	3/1/2017	10		10
14	6/1/2017	15		15
15	9/19/2017	13		13
16	12/5/2017	27		27
17				
18				

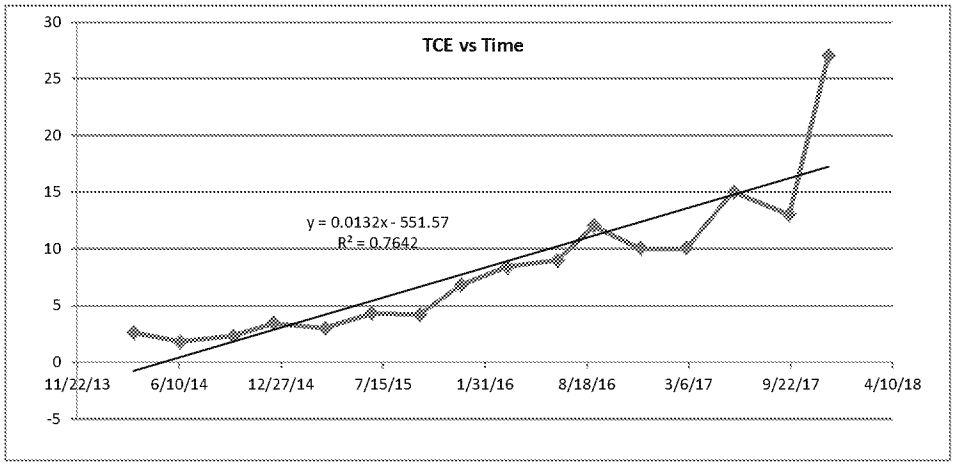
Mann Kendall Statistic (S) =	105.0		0.01321
Number of Rounds (n) =	16		
Average =	8.30		
Standard Deviation =	6.504		
Coefficient of Variation(CV)=	0.784		

Error Check, Blank if No Errors Detected

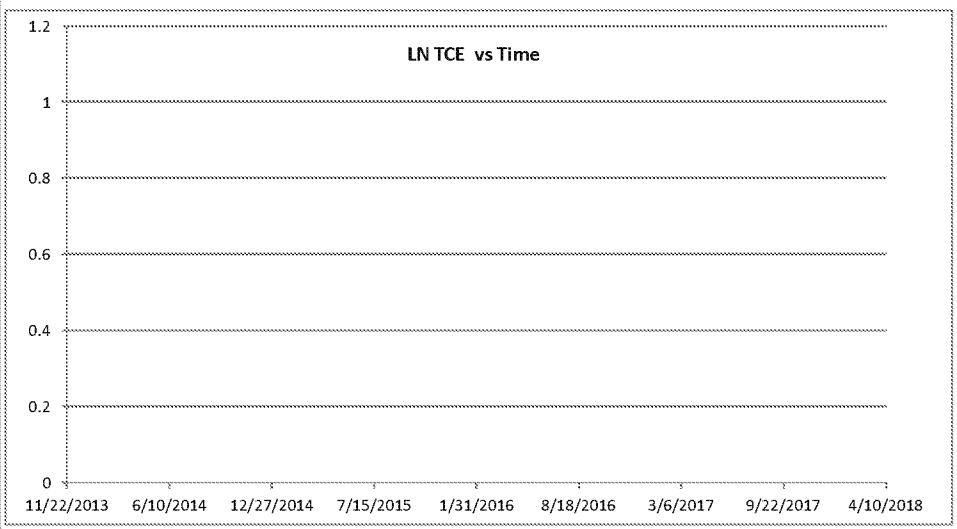
Trend ≥ 80% Confidence Level	INCREASING		
Trend ≥ 90% Confidence Level	INCREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By = BAH | Date = Jan 4 2017

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE105D1

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/11/2014	160	5.08	
2	6/11/2014	130	4.87	
3	9/26/2014	92	4.52	
4	12/11/2014	120	4.79	
5	3/25/2015	120	4.79	
6	6/23/2015	120	4.79	
7	9/28/2015	94	4.54	
8	12/17/2015	120	4.79	
9	3/17/2016	130	4.87	
10	6/27/2016	110	4.70	
11	9/19/2016	100	4.61	
12	12/6/2016	110	4.70	
13	3/7/2017	120	4.79	
14	6/1/2017	86	4.45	
15	9/18/2017	92	4.52	
16	12/5/2017	100	4.61	
17				
18				

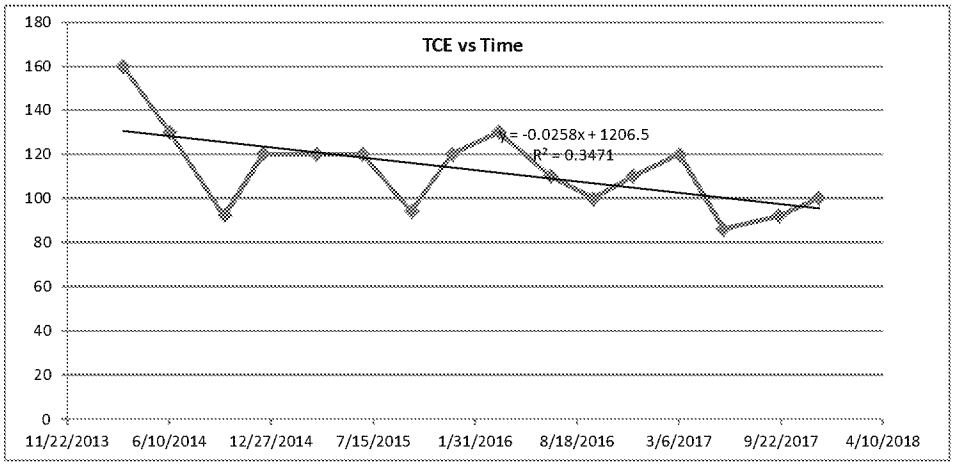
Mann Kendall Statistic (S) =	-48.0	-0.00022	
Number of Rounds (n) =	16		
Average =	112.75		
Standard Deviation =	18.901		
Coefficient of Variation(CV)=	0.168		

Error Check, Blank if No Errors Detected

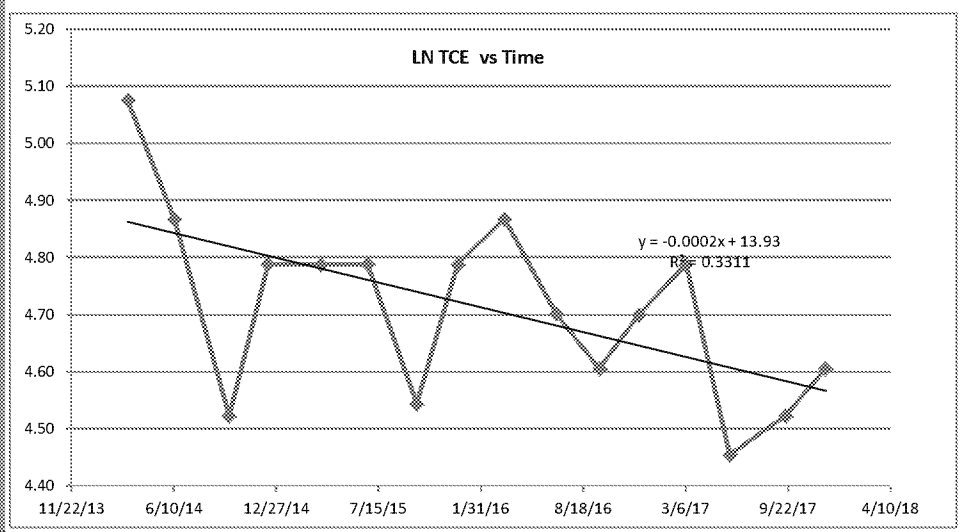
Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By = BC **Date =** Feb 27 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE105D2

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/11/2014	620		620
2	6/11/2014	1500		1500
3	9/26/2014	1500		1500
4	12/11/2014	1700		1700
5	3/25/2015	1600		1600
6	6/23/2015	1400		1400
7	9/28/2015	1900		1900
8	12/17/2015	1800		1800
9	3/17/2016	1800		1800
10	6/27/2016	1800		1800
11	9/19/2016	2000		2000
12	12/6/2016	1800		1800
13	3/7/2017	1800		1800
14	6/1/2017	1700		1700
15	9/18/2017	1900		1900
16	12/5/2017	1900		1900
17				
18				

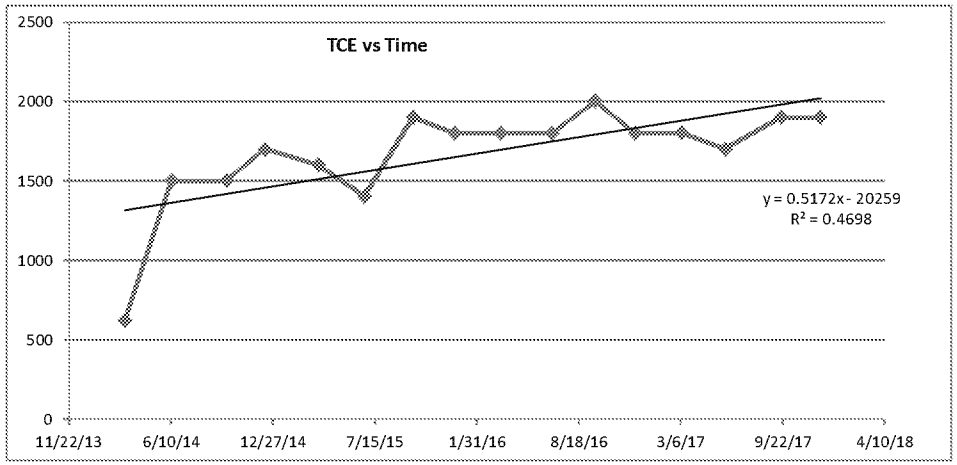
Mann Kendall Statistic (S) =	63.0		0.51720
Number of Rounds (n) =	16		
Average =	1670.00		
Standard Deviation =	325.781		
Coefficient of Variation(CV)=	0.195		

Error Check, Blank if No Errors Detected

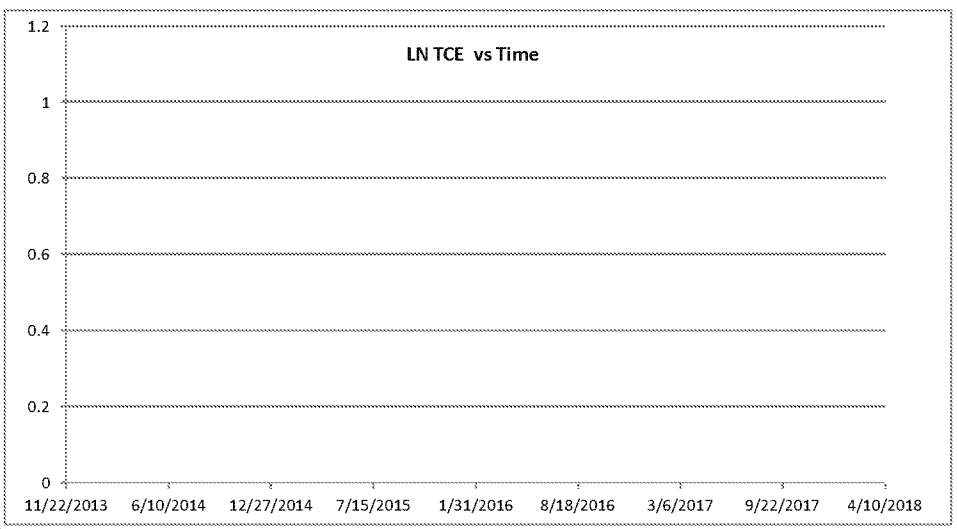
Trend ≥ 80% Confidence Level	INCREASING		
Trend ≥ 90% Confidence Level	INCREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By = BC **Date =** Feb 27 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE107D1

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	12/18/2015	17	2.833213344	
2	5/23/2016	11.6	2.451005098	
3	12/1/2016	11.8	2.468099531	
4	6/1/2017	15.2	2.721295428	
5	11/29/2017	12.7	2.541601993	
6				
7				
8				
9				
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11				
12				
13				
14				
15				
16				
17				
18				

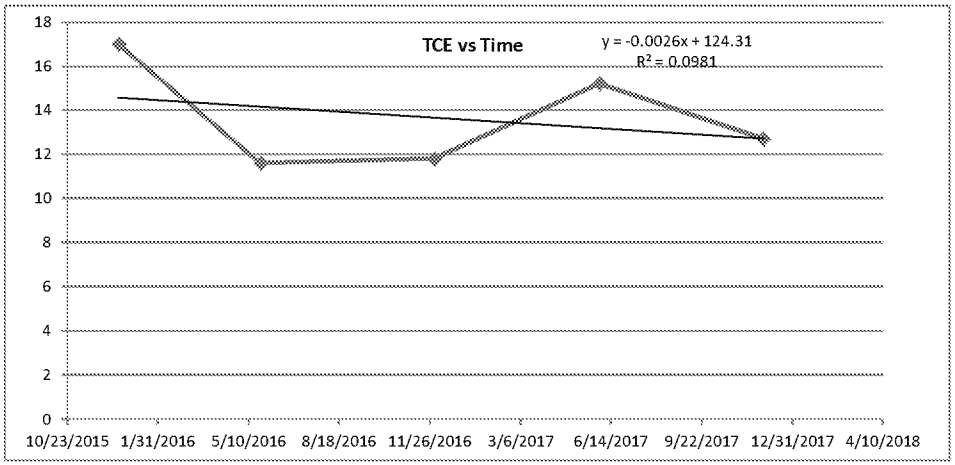
Mann Kendall Statistic (S) =	0.0	-0.00016	
Number of Rounds (n) =	5		
Average =	13.66		
Standard Deviation =	2.353		
Coefficient of Variation(CV)=	0.172		

Error Check, Blank if No Errors Detected

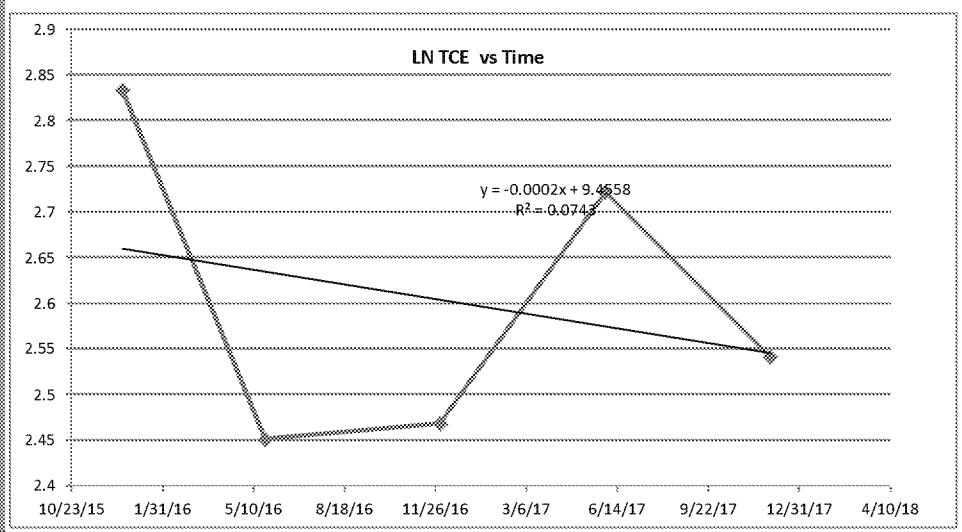
Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	CV <= 1 STABLE		

Data Entry By =	BC	Date =	Mar 1 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE107D2

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	12/18/2015	140		140
2	5/23/2016	162		162
3	12/1/2016	174		174
4	6/1/2017	194		194
5	11/29/2017	226		226
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

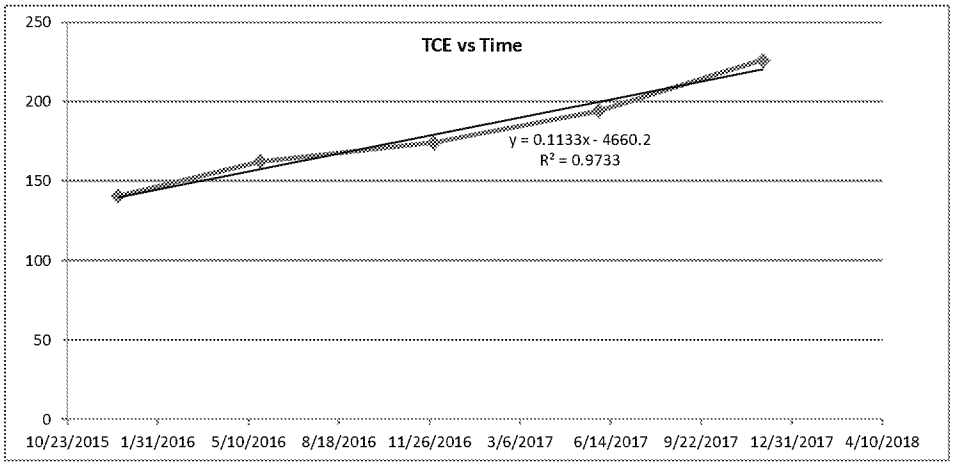
Mann Kendall Statistic (S) =	10.0		0.11332
Number of Rounds (n) =	5		
Average =	179.20		
Standard Deviation =	32.668		
Coefficient of Variation(CV)=	0.182		

Error Check, Blank if No Errors Detected

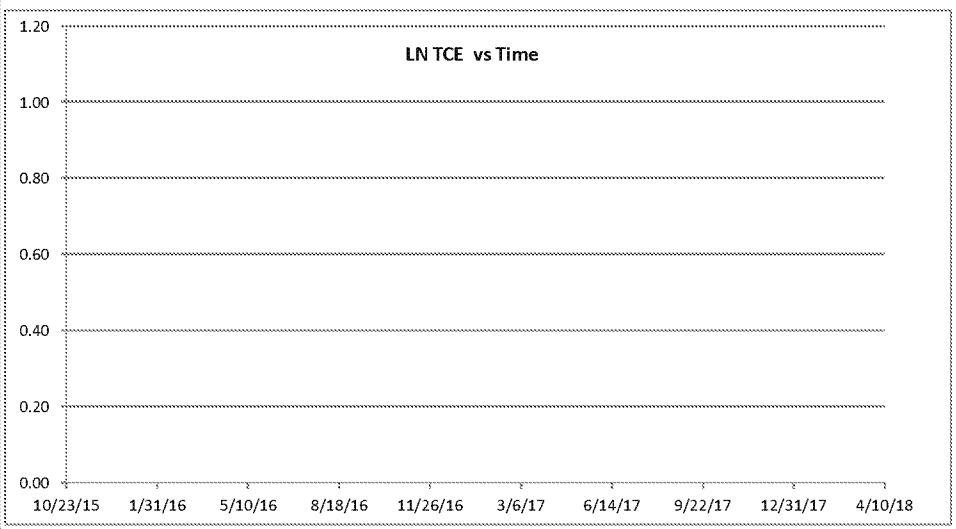
Trend ≥ 80% Confidence Level	INCREASING		
Trend ≥ 90% Confidence Level	INCREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Mar 1 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE107D3

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	12/29/2015	0.36		
2	5/24/2016	0.125		
3	12/1/2016	0.26		
4	6/1/2017	0.27		
5	11/29/2017	0.125		
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

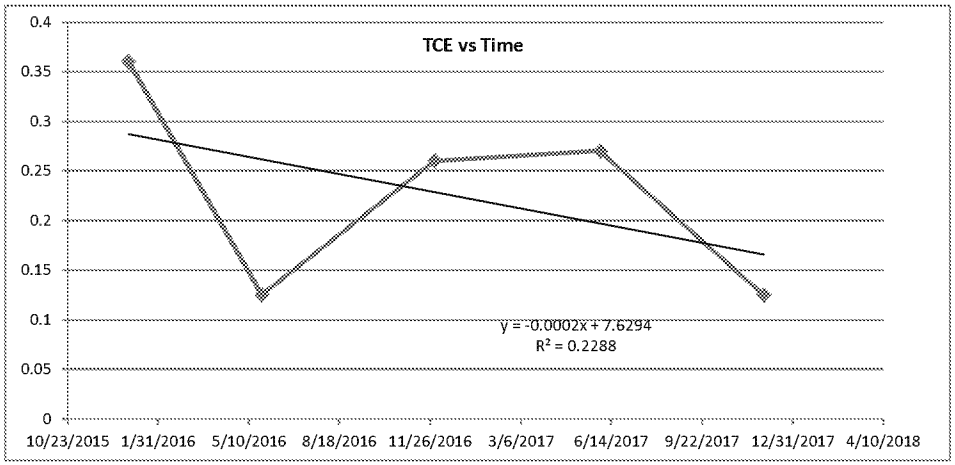
Mann Kendall Statistic (S) =	-3.0		
Number of Rounds (n) =	5		
Average =	0.23		
Standard Deviation =	0.102		
Coefficient of Variation(CV)=	0.446		

Error Check, Blank if No Errors Detected

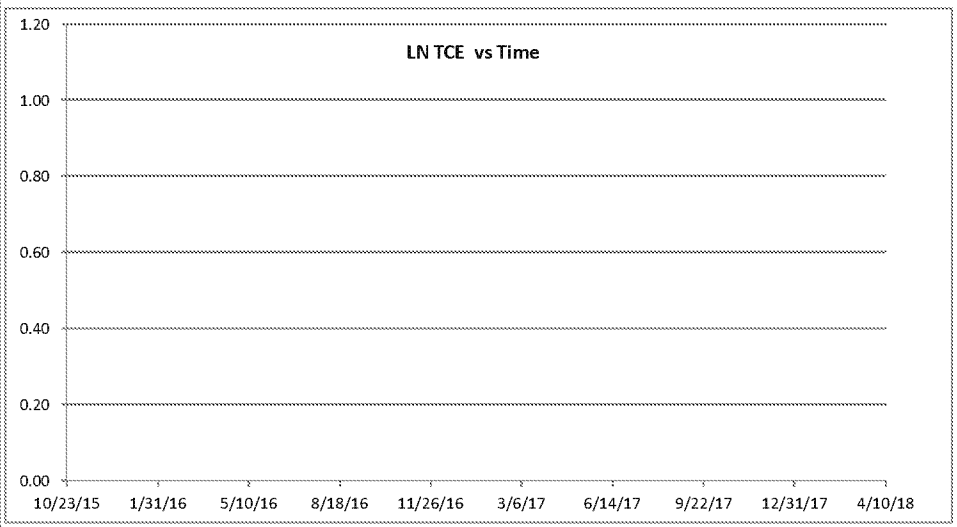
Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	CV <= 1 STABLE		

Data Entry By =	BC	Date =	Mar 1 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number =** RE108D1

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/12/2014	130	4.86753445	
2	6/10/2014	82	4.406719247	
3	9/24/2014	140	4.941642423	
4	12/12/2014	140	4.941642423	
5	3/27/2015	140	4.941642423	
6	6/24/2015	110	4.700480366	
7	9/28/2015	98	4.584967479	
8	12/22/2015	110	4.700480366	
9	3/14/2016	120	4.787491743	
10	6/27/2016	82	4.406719247	
11	9/19/2016	50	3.912023005	
12	12/6/2016	56	4.025351691	
13	3/7/2017	61	4.110873864	
14	6/1/2017	38	3.63758616	
15	9/18/2017	39	3.663561646	
16	12/5/2017	51	3.931825633	
17				
18				

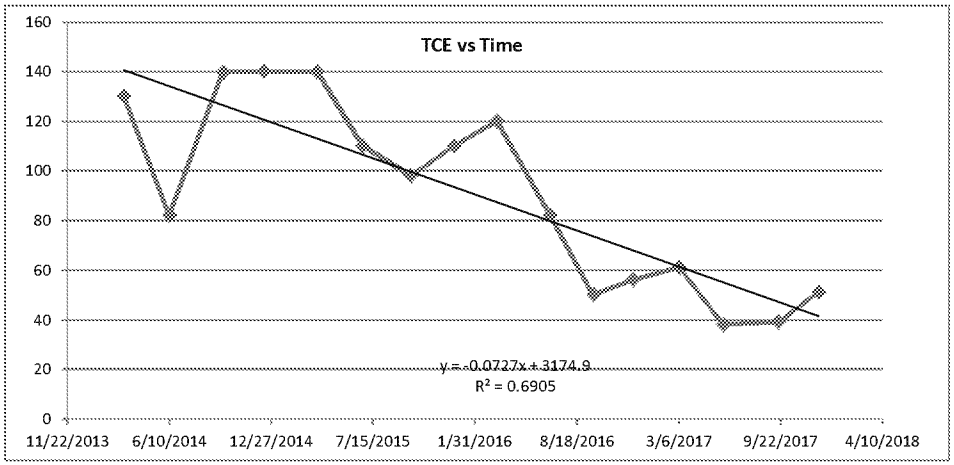
Mann Kendall Statistic (S) =	-73.0	-0.00091	
Number of Rounds (n) =	16		
Average =	90.44		
Standard Deviation =	37.782		
Coefficient of Variation(CV)=	0.418		

Error Check, Blank if No Errors Detected

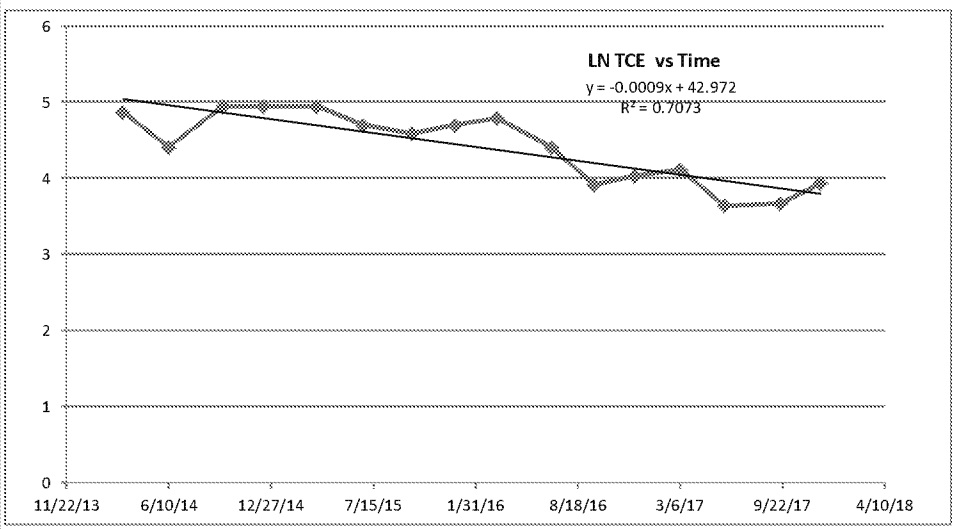
Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Feb 27 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE108D2

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/12/2014	4600	8.43	
2	6/10/2014	3400	8.13	
3	9/24/2014	3700	8.22	
4	12/12/2014	3100	8.04	
5	3/27/2015	3300	8.10	
6	6/24/2015	3900	8.27	
7	9/28/2015	3400	8.13	
8	12/22/2015	2900	7.97	
9	3/14/2016	3800	8.24	
10	6/27/2016	3000	8.01	
11	9/19/2016	3000	8.01	
12	12/6/2016	2900	7.97	
13	3/7/2017	2900	7.97	
14	6/1/2017	3000	8.01	
15	9/18/2017	2900	7.97	
16	12/6/2017	3100	8.04	
17				
18				

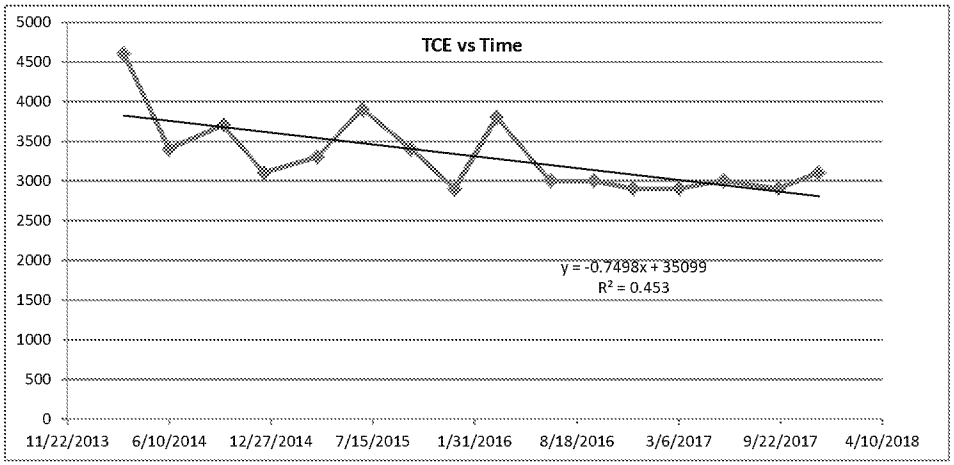
Mann Kendall Statistic (S) =	-57.0	-0.00021	
Number of Rounds (n) =	16		
Average =	3306.25		
Standard Deviation =	480.928		
Coefficient of Variation(CV)=	0.145		

Error Check, Blank if No Errors Detected

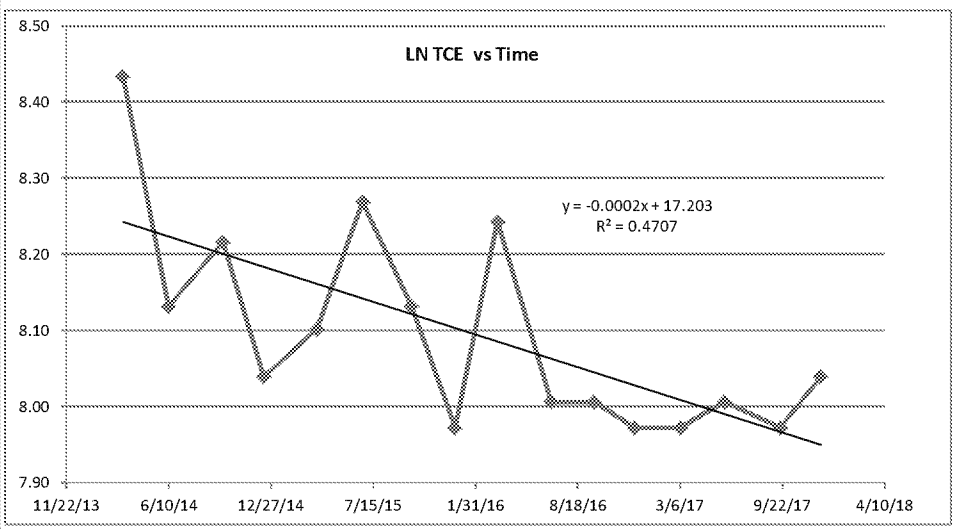
Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Feb 27 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE114D1

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	12/21/2015	370		
2	5/26/2016	353		
3	12/1/2016	399		
4	6/1/2017	415		
5	11/29/2017	387		
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

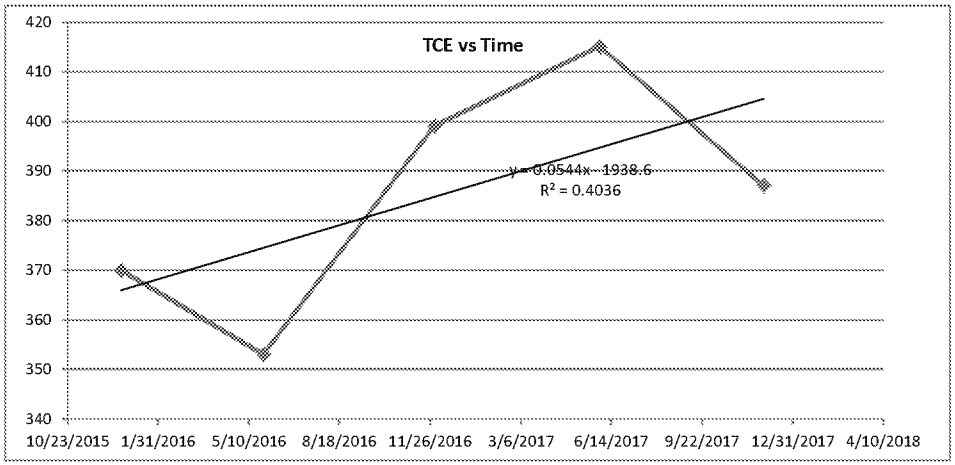
Mann Kendall Statistic (S) =	4.0		
Number of Rounds (n) =	5		
Average =	384.80		
Standard Deviation =	24.232		
Coefficient of Variation(CV)=	0.063		

Error Check, Blank if No Errors Detected

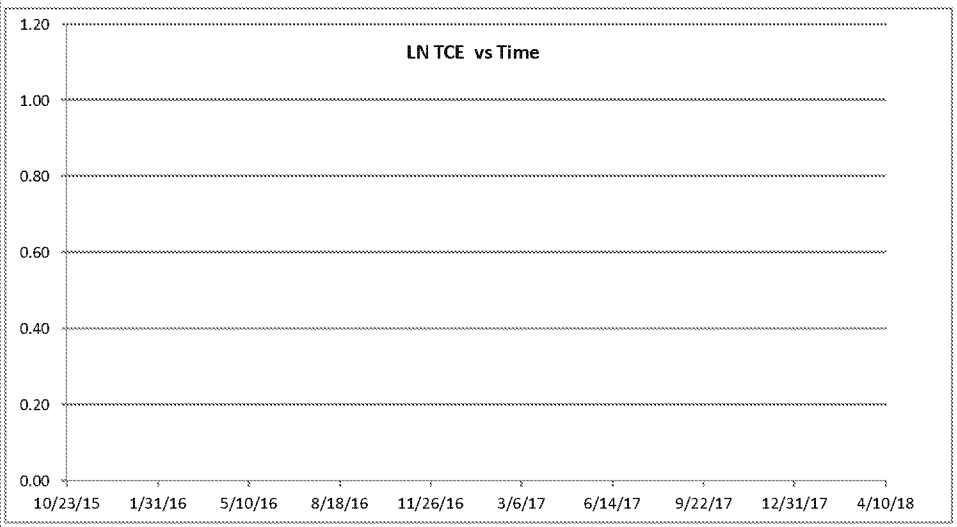
Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	CV <= 1 STABLE		

Data Entry By =	BC	Date =	Mar 1 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE114D2

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	12/16/2015	70		
2	5/26/2016	52.3		
3	12/1/2016	68.2		
4	6/1/2017	67		
5	12/20/2017	84		
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

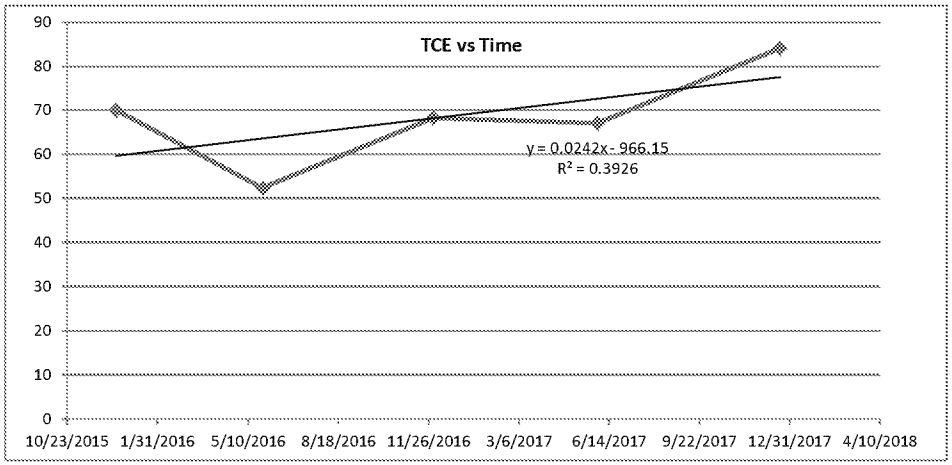
Mann Kendall Statistic (S) =	2.0		
Number of Rounds (n) =	5		
Average =	68.30		
Standard Deviation =	11.259		
Coefficient of Variation(CV)=	0.165		

Error Check, Blank if No Errors Detected

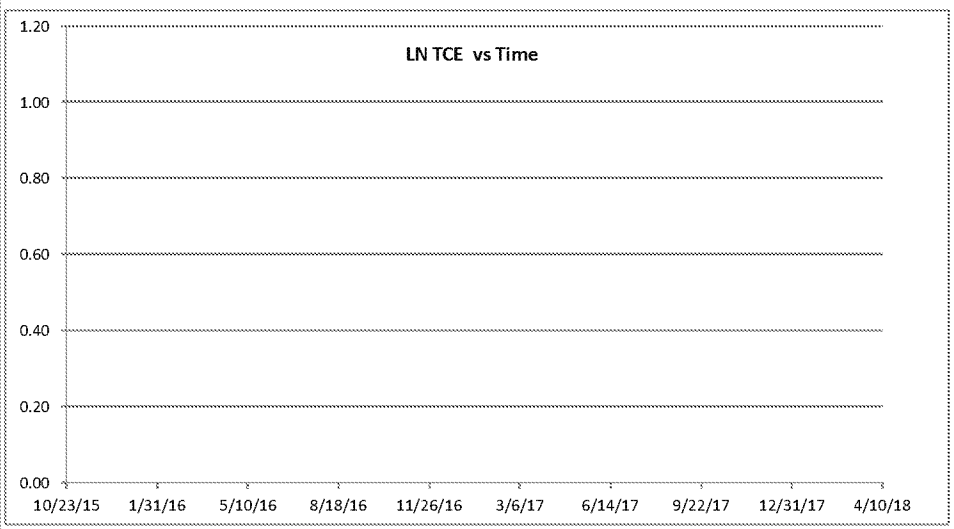
Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	CV <= 1 STABLE		

Data Entry By =	BC	Date =	Mar 1 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE114D3

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	12/16/2015	43		
2	5/26/2016	34		
3	12/1/2016	47		
4	6/1/2017	42.6		
5	12/20/2017	51.2		
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

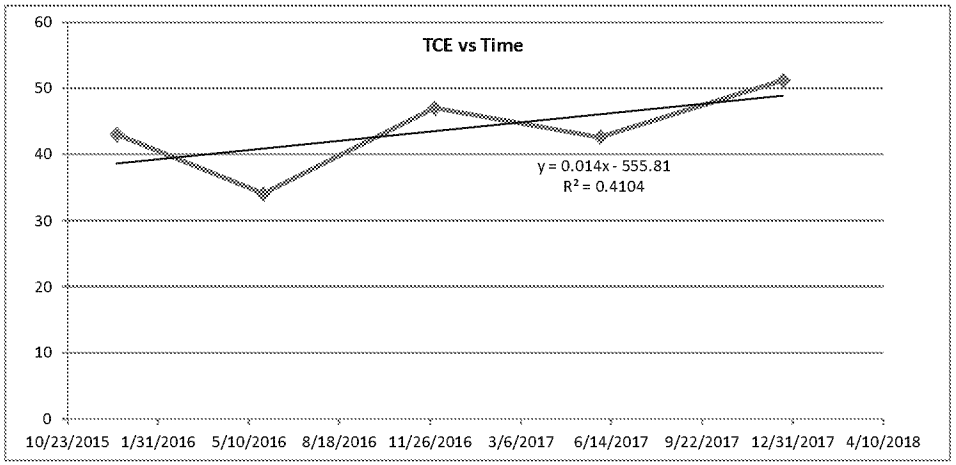
Mann Kendall Statistic (S) =	4.0		
Number of Rounds (n) =	5		
Average =	43.56		
Standard Deviation =	6.380		
Coefficient of Variation(CV)=	0.146		

Error Check, Blank if No Errors Detected

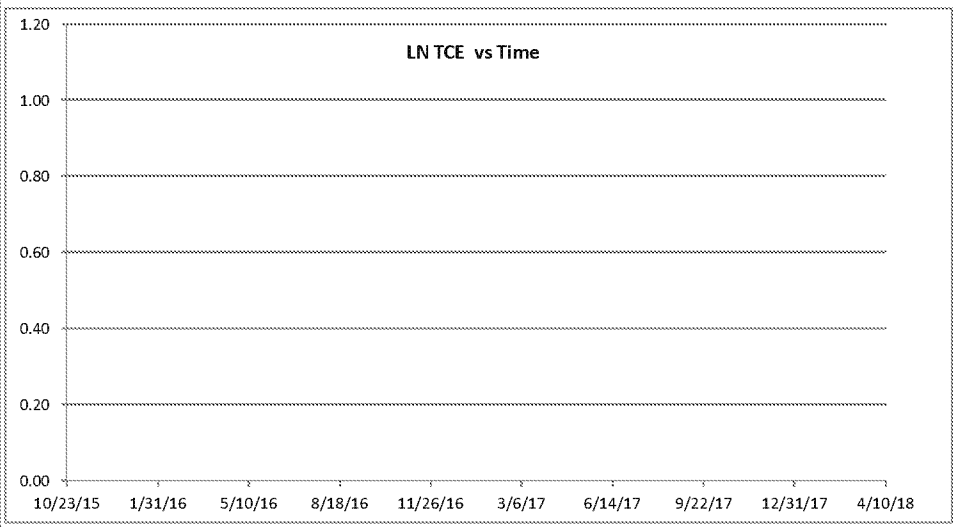
Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	CV <= 1 STABLE		

Data Entry By =	BC	Date =	Mar 1 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE117D1

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	6/1/2015	7.8		
2	12/1/2015	9.4		
3	5/16/2016	21.3		
4	10/31/2016	16		
5	12/1/2016	17		
6	3/1/2017	14		
7	6/1/2017	15		
8	9/25/2017	14		
9	12/13/2017	13		
10				
11				
12				
13				
14				
15				
16				
17				
18				

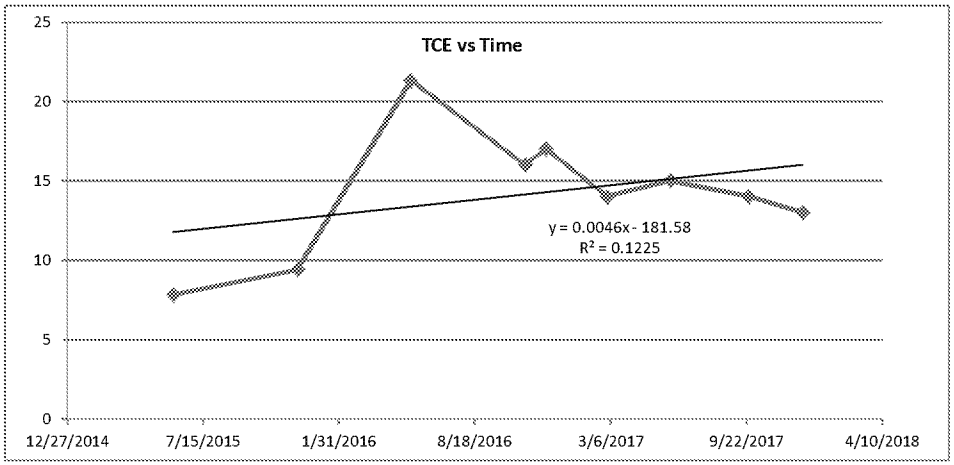
Mann Kendall Statistic (S) =	-1.0		
Number of Rounds (n) =	9		
Average =	14.17		
Standard Deviation =	3.994		
Coefficient of Variation(CV)=	0.282		

Error Check, Blank if No Errors Detected

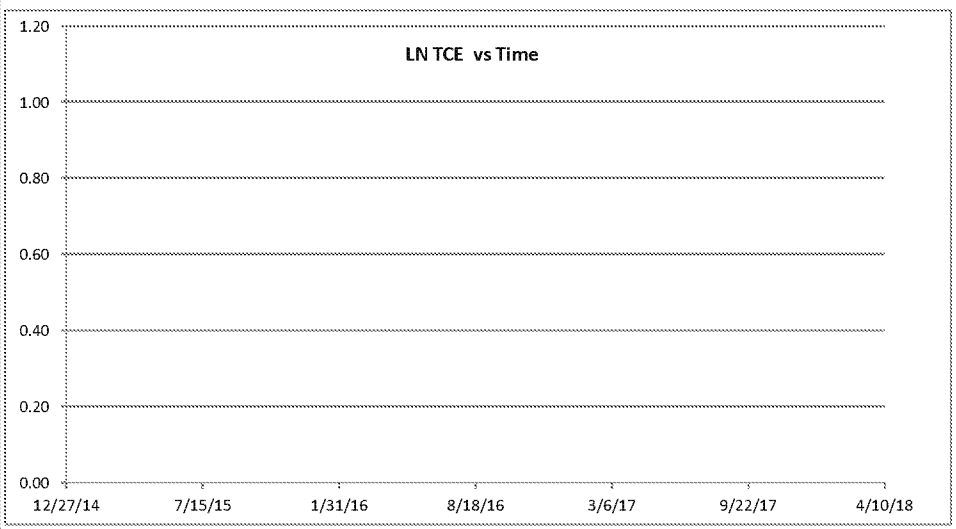
Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	CV <= 1 STABLE		

Data Entry By =	BC	Date =	Mar 1 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE120D1

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	12/12/2014	1300	7.170119543	
2	3/25/2015	1300	7.170119543	
3	9/29/2015	1300	7.170119543	
4	12/18/2015	1300	7.170119543	
5	3/16/2016	1200	7.090076836	
6	6/22/2016	1200	7.090076836	
7	9/19/2016	1400	7.244227516	
8	12/6/2016	1000	6.907755279	
9	3/7/2017	1000	6.907755279	
10	6/1/2017	870	6.768493212	
11	9/18/2017	970	6.877296071	
12	12/12/2017	990	6.897704943	
13				
14				
15				
16				
17				
18				

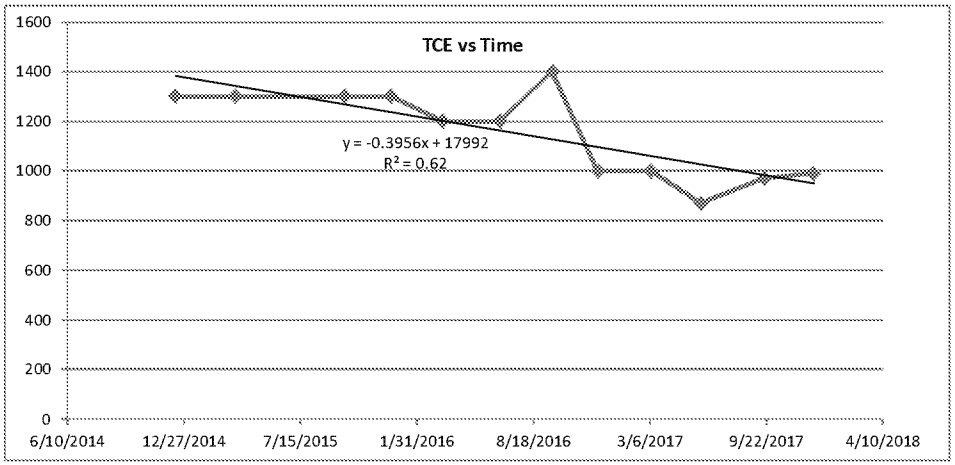
Mann Kendall Statistic (S) =	-40.0	-0.00036	
Number of Rounds (n) =	12		
Average =	1152.50		
Standard Deviation =	175.506		
Coefficient of Variation(CV)=	0.152		

Error Check, Blank if No Errors Detected

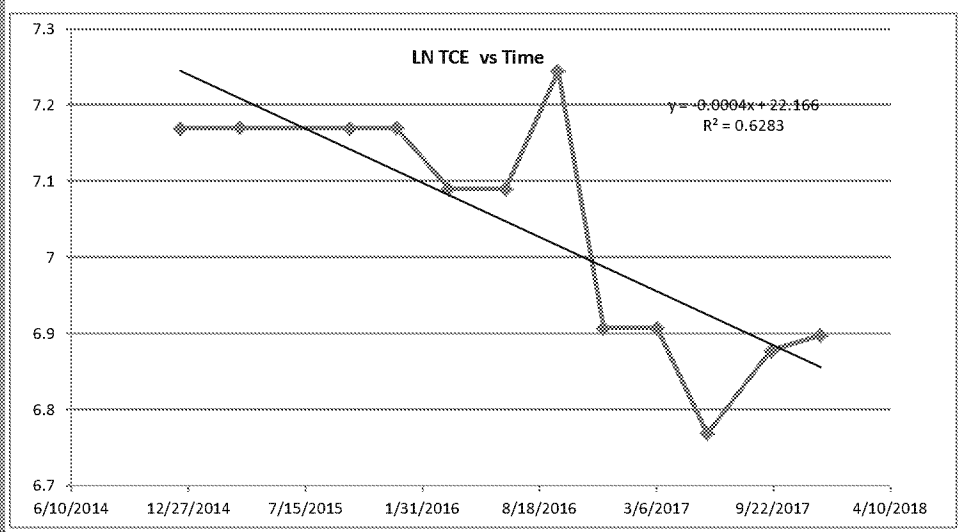
Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Feb 27 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE120D2

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	12/12/2014	900	6.802394763	
2	3/25/2015	830	6.721425701	
3	9/29/2015	760	6.633318433	
4	12/29/2015	680	6.522092798	
5	3/16/2016	780	6.65929392	
6	6/22/2016	720	6.579251212	
7	9/19/2016	1000	6.907755279	
8	12/6/2016	670	6.507277712	
9	3/7/2017	610	6.413458957	
10	6/1/2017	640	6.461468176	
11	9/18/2017	690	6.536691598	
12	12/12/2017	710	6.56526497	
13				
14				
15				
16				
17				
18				

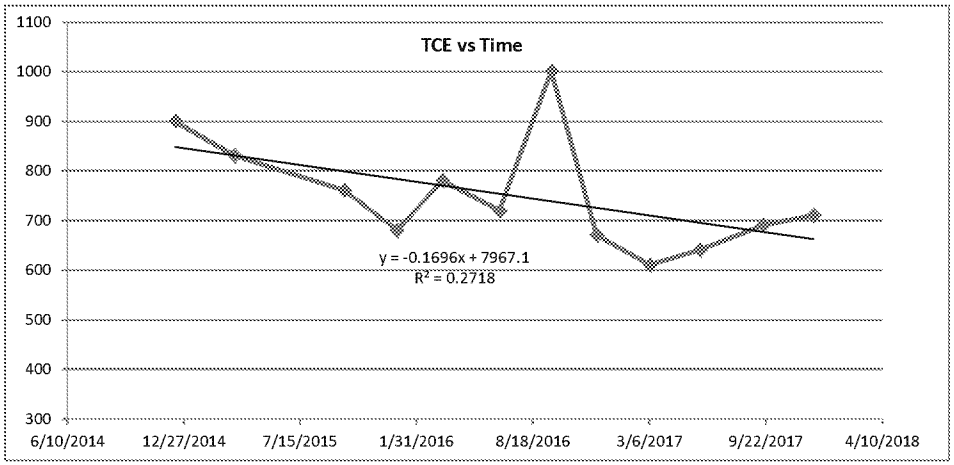
Mann Kendall Statistic (S) =	-28.0	-0.00023	
Number of Rounds (n) =	12		
Average =	749.17		
Standard Deviation =	113.415		
Coefficient of Variation(CV)=	0.151		

Error Check, Blank if No Errors Detected

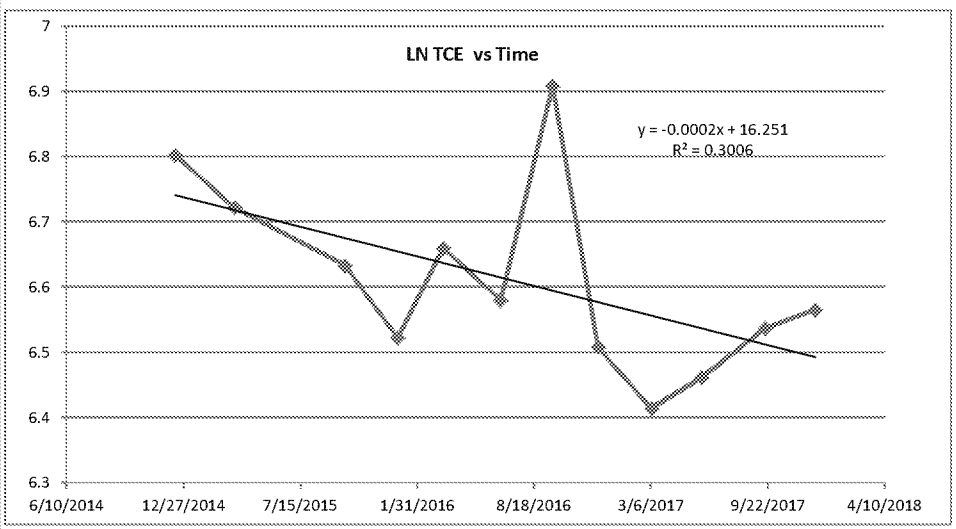
Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Feb 27 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE120D3

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	12/12/2014	3.4		
2	3/25/2015	0.74		
3	9/29/2015	120		
4	12/29/2015	29		
5	3/16/2016	55		
6	6/22/2016	46		
7	9/19/2016	57		
8	12/6/2016	41		
9	3/7/2017	31		
10	6/1/2017	37		
11	9/18/2017	44		
12	12/12/2017	28		
13				
14				
15				
16				
17				
18				

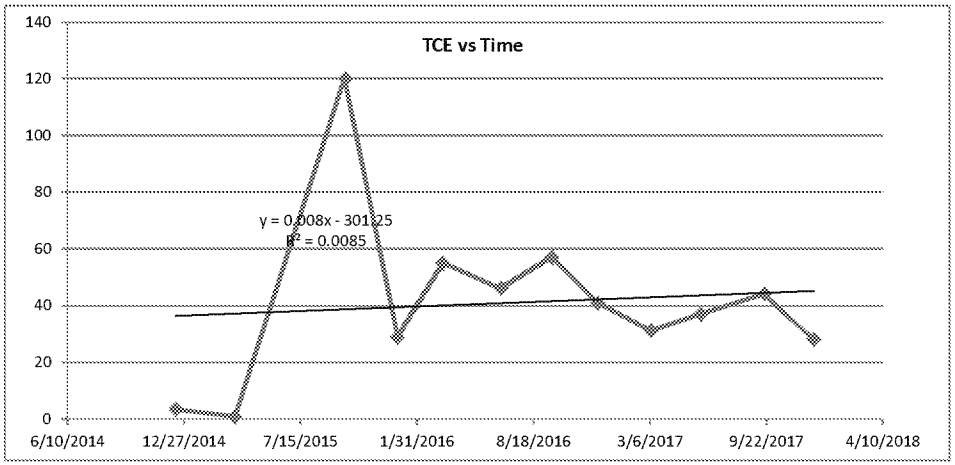
Mann Kendall Statistic (S) =	0.0		
Number of Rounds (n) =	12		
Average =	41.01		
Standard Deviation =	30.437		
Coefficient of Variation(CV)=	0.742		

Error Check, Blank if No Errors Detected

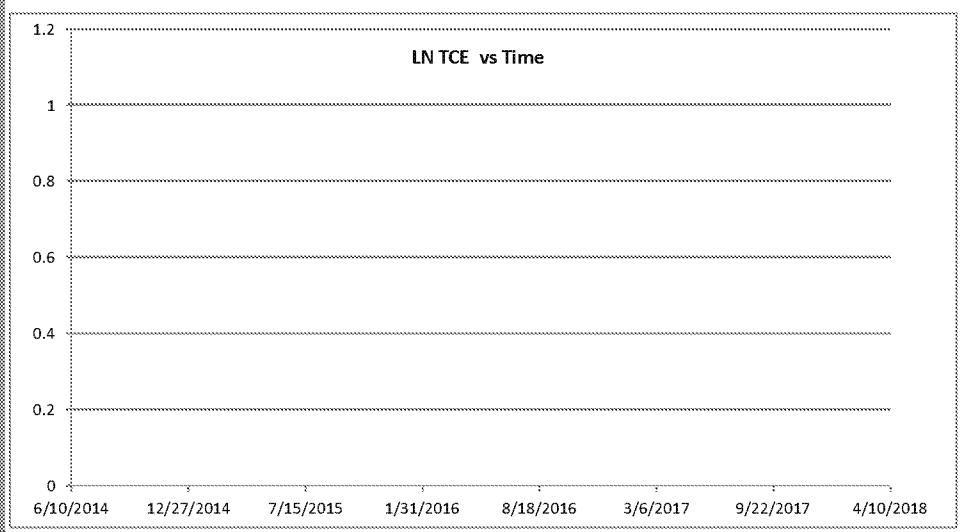
Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	CV <= 1 STABLE		

Data Entry By =	BC	Date =	Feb 27 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE121D1

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	12/21/2015	29		29
2	6/1/2016	18.9		18.9
3	12/1/2016	25.8		25.8
4	6/1/2017	31.3		31.3
5	12/5/2017	33.8		33.8
6				
7				
8				
9				
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15				
16				
17				
18				

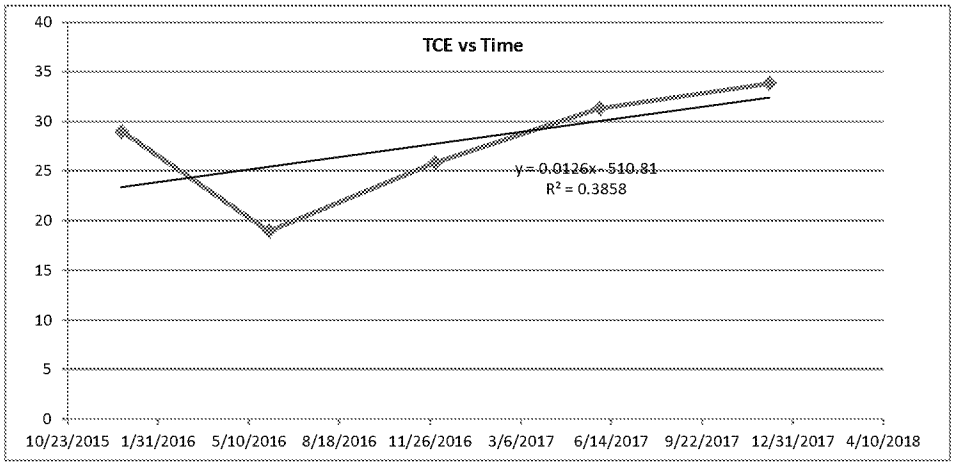
Mann Kendall Statistic (S) =	6.0		0.01261
Number of Rounds (n) =	5		
Average =	27.76		
Standard Deviation =	5.764		
Coefficient of Variation(CV)=	0.208		

Error Check, Blank if No Errors Detected

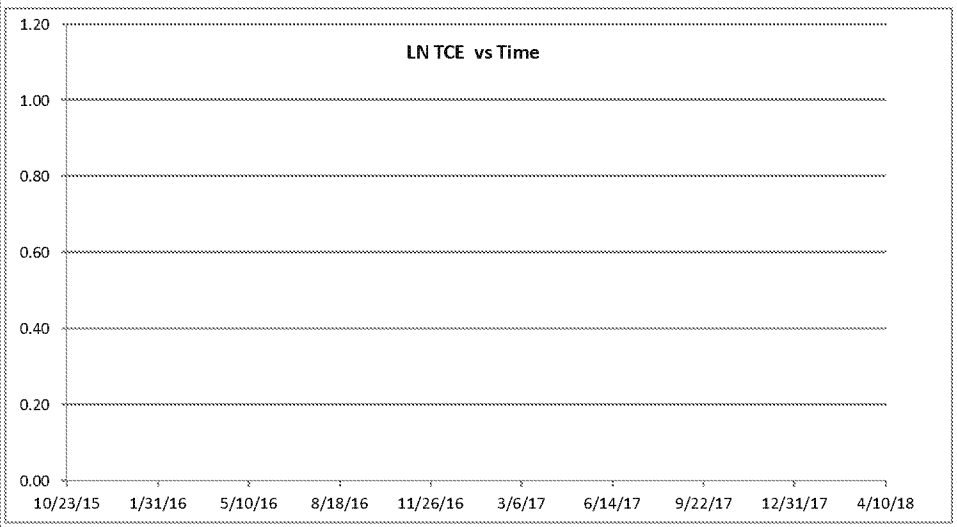
Trend ≥ 80% Confidence Level	INCREASING		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Mar 1 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE121D2

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	12/21/2015	480		480
2	6/1/2016	422		422
3	12/1/2016	591		591
4	6/1/2017	789		789
5	12/5/2017	754		754
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

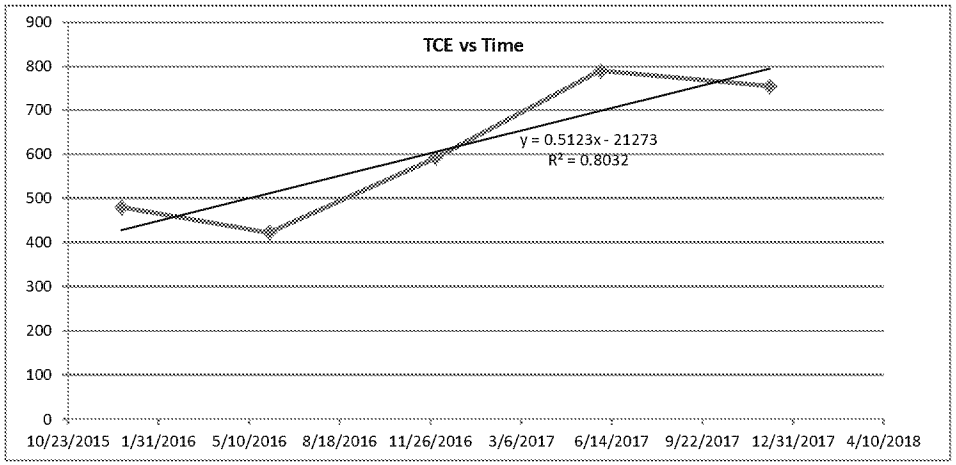
Mann Kendall Statistic (S) =	6.0	#DIV/0!	0.51229
Number of Rounds (n) =	5		
Average =	607.20		
Standard Deviation =	162.283		
Coefficient of Variation(CV)=	0.267		

Error Check, Blank if No Errors Detected

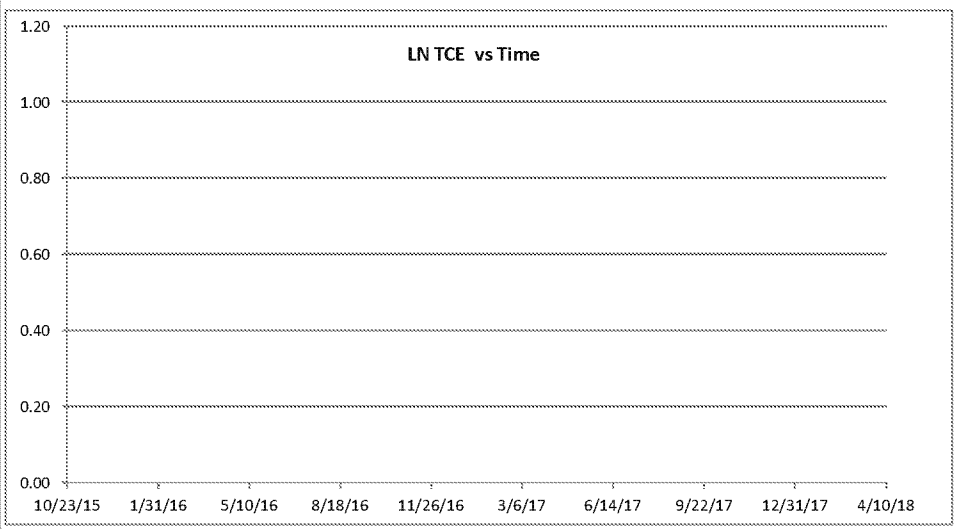
Trend ≥ 80% Confidence Level	INCREASING		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Mar 1 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE122D1

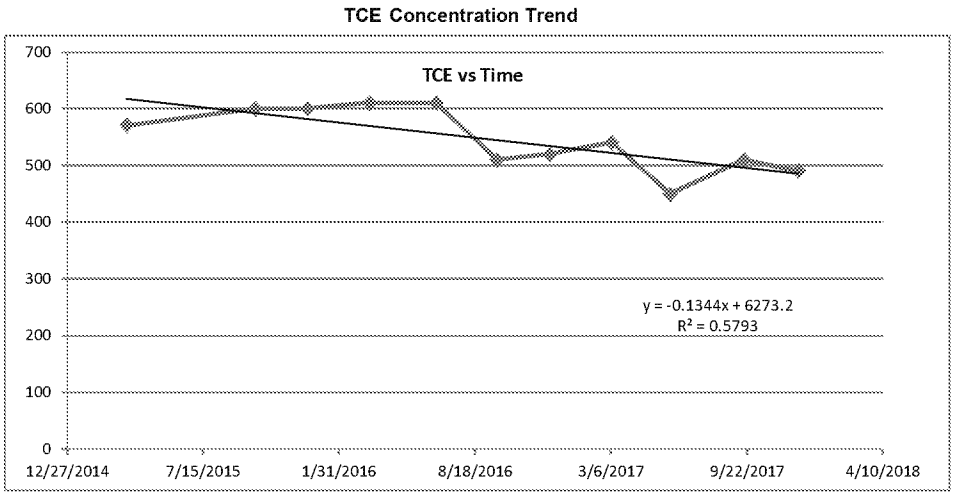
Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/24/2015	570	6.345636361	
2	9/30/2015	600	6.396929655	
3	12/15/2015	600	6.396929655	
4	3/15/2016	610	6.413458957	
5	6/22/2016	610	6.413458957	
6	9/19/2016	510	6.234410726	
7	12/6/2016	520	6.253828812	
8	3/7/2017	540	6.29156914	
9	6/1/2017	450	6.109247583	
10	9/18/2017	510	6.234410726	
11	12/6/2017	490	6.194405391	
12				
13				
14				
15				
16				
17				
18				

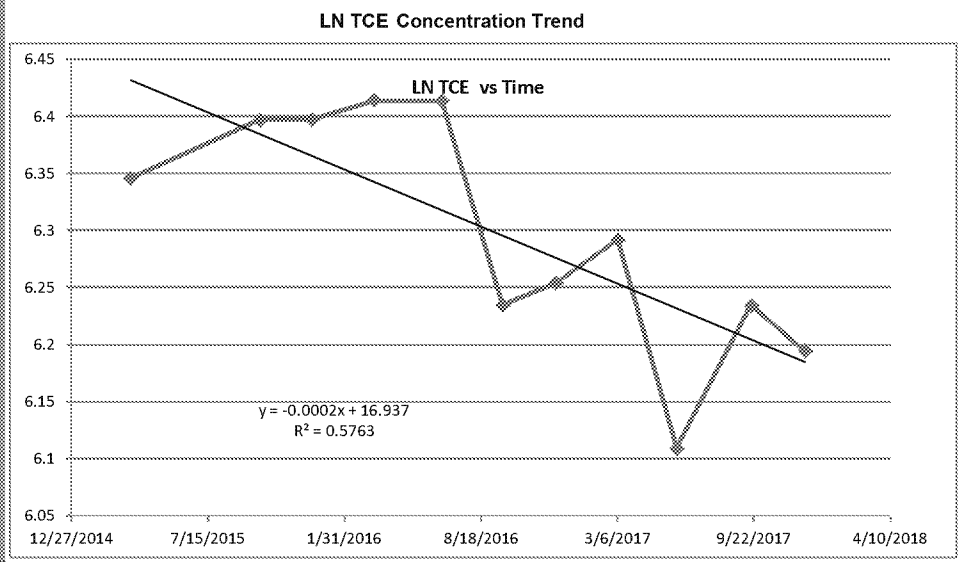
Mann Kendall Statistic (S) =	-26.0	-0.00025	
Number of Rounds (n) =	11		
Average =	546.36		
Standard Deviation =	55.004		
Coefficient of Variation(CV)=	0.101		

Error Check, Blank if No Errors Detected

Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Feb 28 2018





Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE122D2

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/24/2015	4600	8.433811582	
2	9/30/2015	5200	8.556413905	
3	12/15/2015	4700	8.455317788	
4	3/15/2016	5300	8.5754621	
5	6/22/2016	5500	8.612503371	
6	9/19/2016	4600	8.433811582	
7	12/6/2016	5300	8.5754621	
8	3/7/2017	4700	8.455317788	
9	6/1/2017	3000	8.006367568	
10	9/21/2017	2200	7.696212639	
11	12/6/2017	3200	8.070906089	
12				
13				
14				
15				
16				
17				
18				

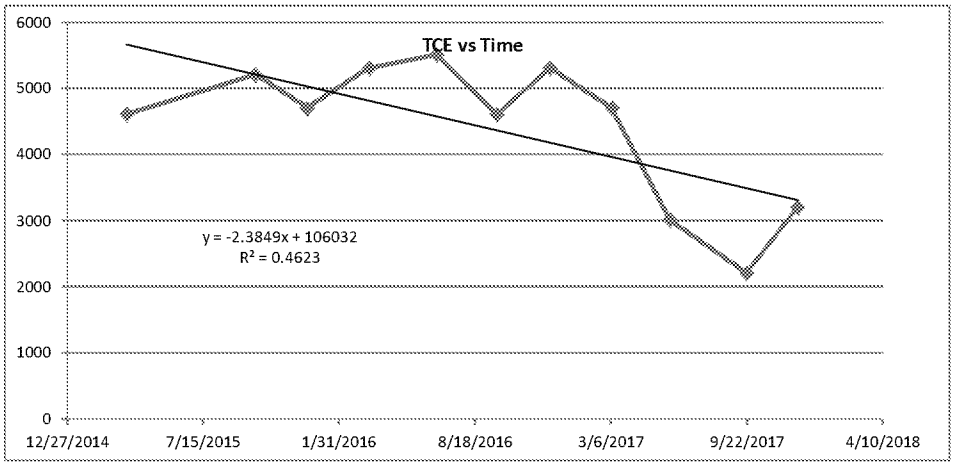
Mann Kendall Statistic (S) =	-18.0	-0.00065	
Number of Rounds (n) =	11		
Average =	4390.91		
Standard Deviation =	1094.033		
Coefficient of Variation(CV)=	0.249		

Error Check, Blank if No Errors Detected

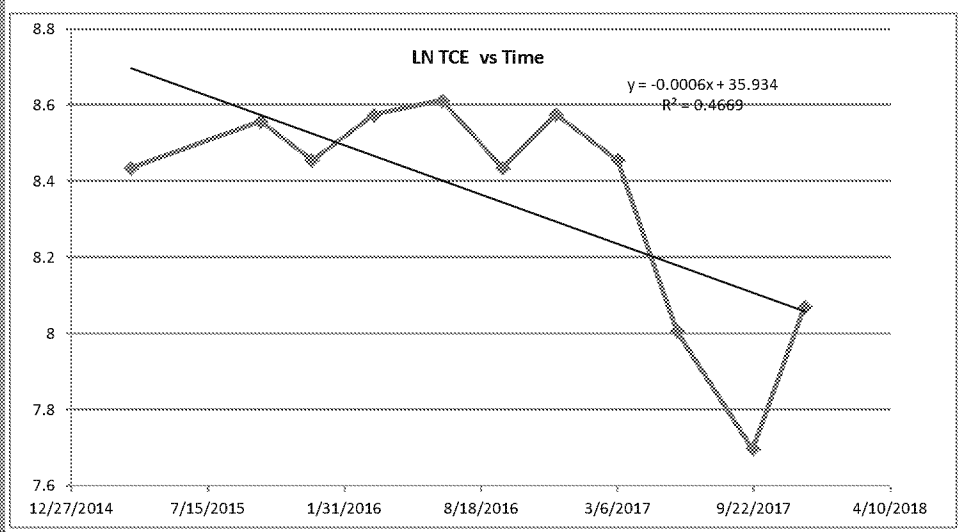
Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Feb 28 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE122D3

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/24/2015	6.8		
2	9/30/2015	10		
3	12/15/2015	2.5		
4	3/15/2016	2.1		
5	6/22/2016	7.4		
6	9/19/2016	3.8		
7	12/6/2016	5.1		
8	3/7/2017	6.2		
9	6/1/2017	6.7		
10	9/21/2017	7.2		
11	12/6/2017	4.2		
12				
13				
14				
15				
16				
17				
18				

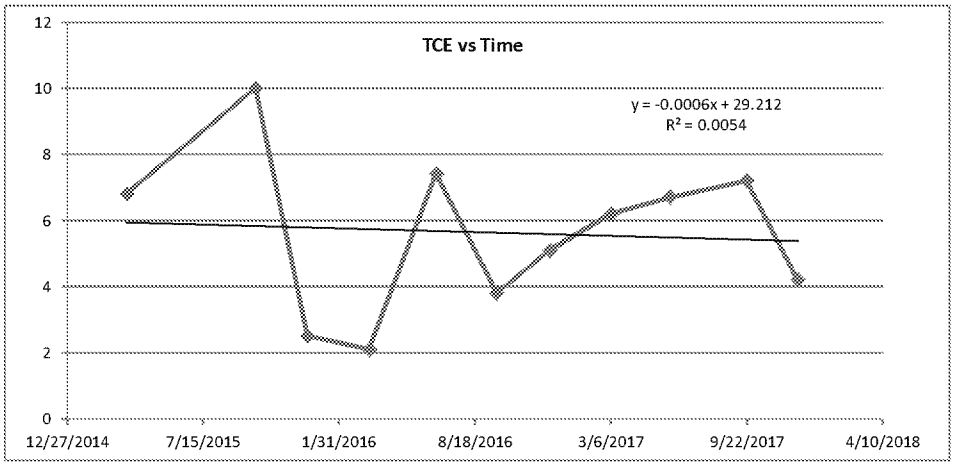
Mann Kendall Statistic (S) =	1.0		
Number of Rounds (n) =	11		
Average =	5.64		
Standard Deviation =	2.355		
Coefficient of Variation(CV)=	0.418		

Error Check, Blank if No Errors Detected

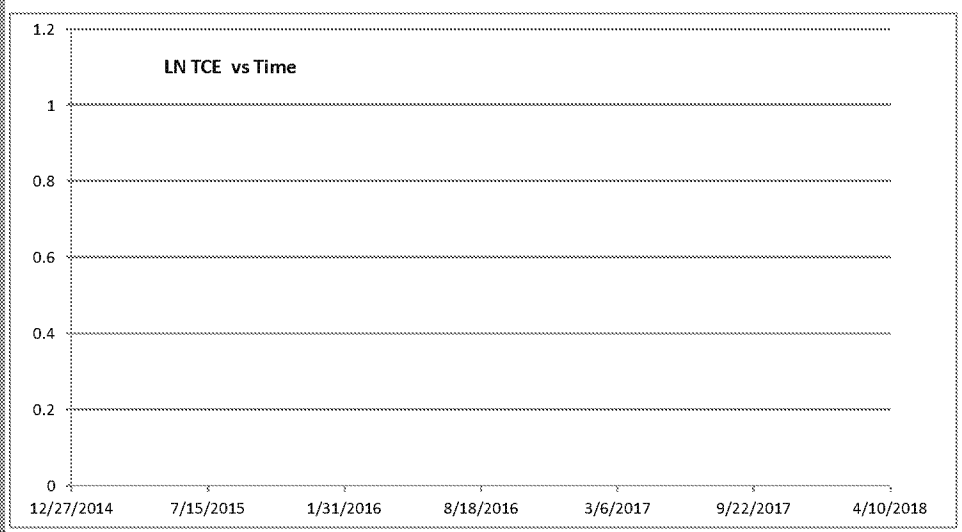
Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	CV <= 1 STABLE		

Data Entry By =	BC	Date =	Feb 28 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE123D1

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	9/29/2015	12		
2	12/21/2015	6.1		
3	3/17/2016	6.6		
4	6/20/2016	7.4		
5	9/1/2016	9.6		
6	12/1/2016	7.3		
7	3/1/2017	4.8		
8	6/1/2017	4.9		
9	9/22/2017	8		
10	12/12/2017	8.4		
11				
12				
13				
14				
15				
16				
17				
18				

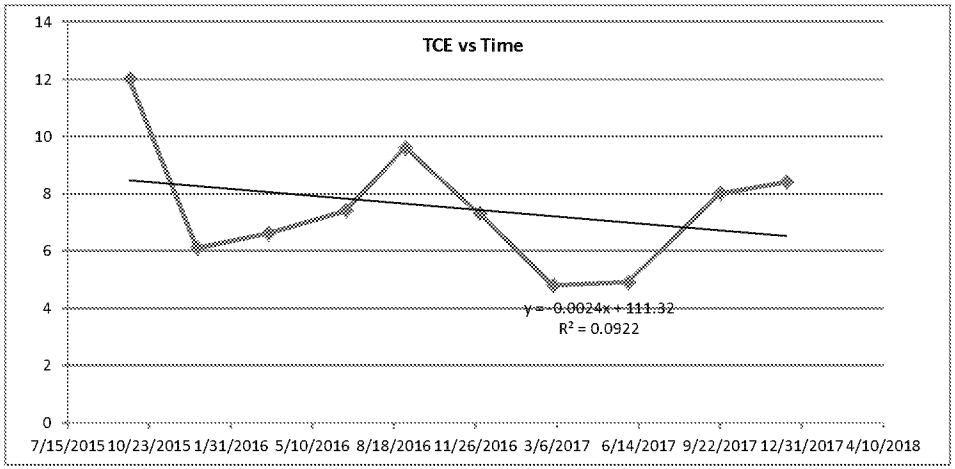
Mann Kendall Statistic (S) =	-1.0		
Number of Rounds (n) =	10		
Average =	7.51		
Standard Deviation =	2.175		
Coefficient of Variation(CV)=	0.290		

Error Check, Blank if No Errors Detected

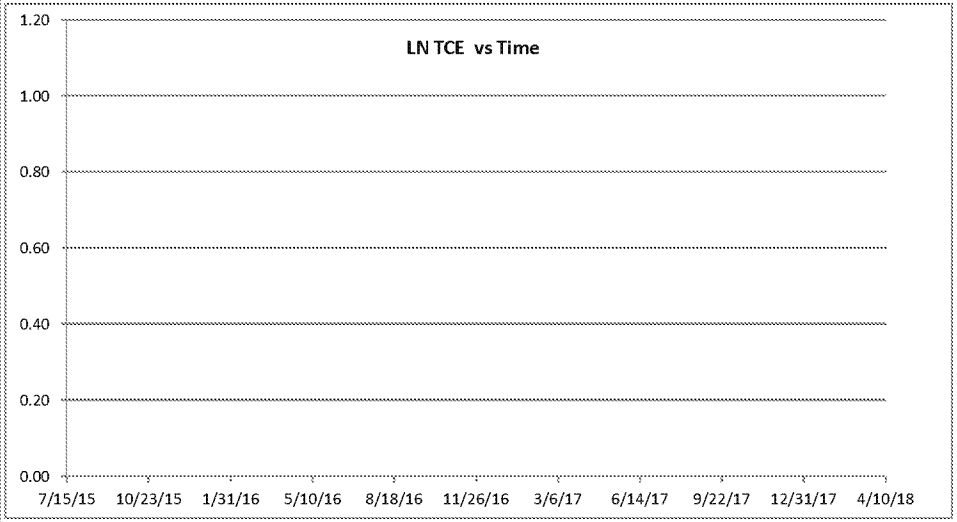
Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	CV <= 1 STABLE		

Data Entry By =	BC	Date =	Mar 1 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE123D2

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	9/29/2015	1.4		1.4
2	12/21/2015	1.5		1.5
3	3/17/2016	1.9		1.9
4	6/20/2016	1.5		1.5
5	9/1/2016	2.1		2.1
6	12/1/2016	1.8		1.8
7	3/1/2017	1.6		1.6
8	6/1/2017	1.8		1.8
9	9/22/2017	2.1		2.1
10	12/12/2017	2.1		2.1
11				
12				
13				
14				
15				
16				
17				
18				

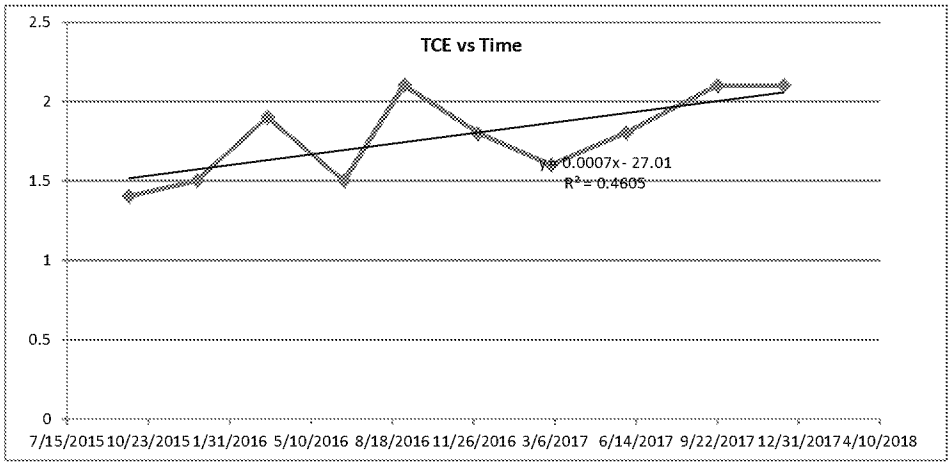
Mann Kendall Statistic (S) =	24.0		0.00067
Number of Rounds (n) =	10		
Average =	1.78		
Standard Deviation =	0.270		
Coefficient of Variation(CV)=	0.152		

Error Check, Blank if No Errors Detected

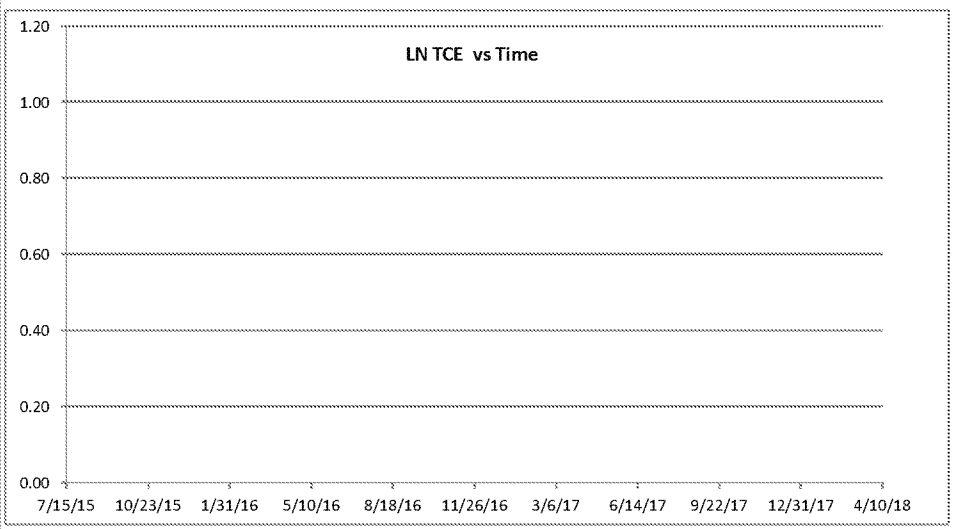
Trend ≥ 80% Confidence Level	INCREASING		
Trend ≥ 90% Confidence Level	INCREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Mar 1 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE125D1

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	12/7/2016	180	5.19	
2	3/13/2017	150	5.01	
3	6/2/2017	180	5.19	
4	9/25/2017	170	5.14	
5	12/11/2017	140	4.94	
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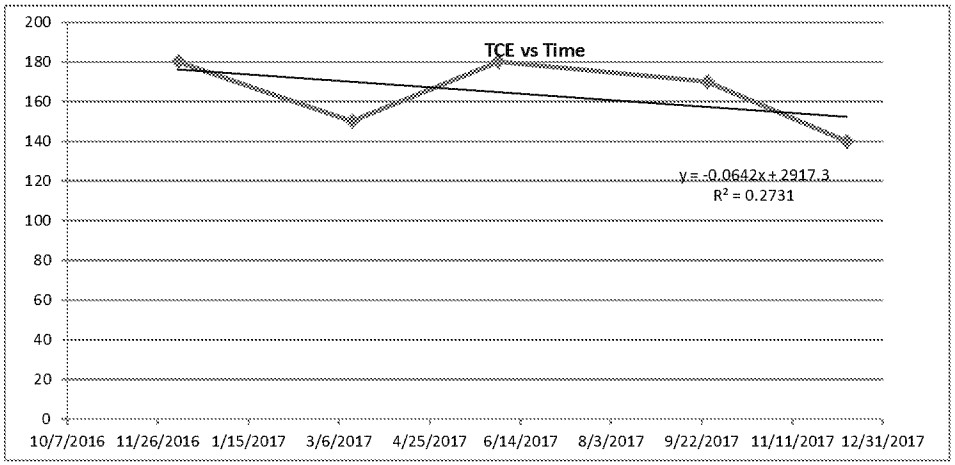
Mann Kendall Statistic (S) =	-5.0	-0.00040	
Number of Rounds (n) =	5		
Average =	164.00		
Standard Deviation =	18.166		
Coefficient of Variation(CV)=	0.111		

Error Check, Blank if No Errors Detected

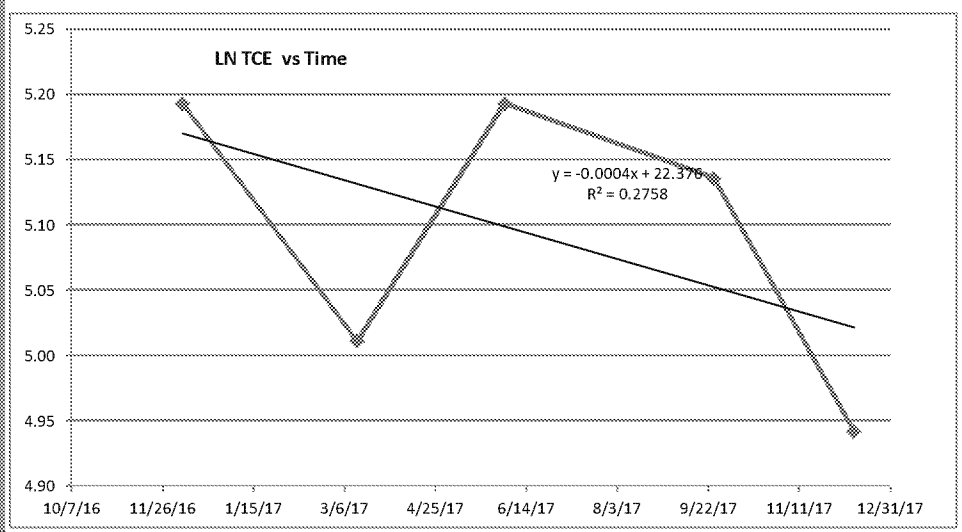
Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Feb 27 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE125D2

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	12/7/2016	240	5.48	
2	3/13/2017	220	5.39	
3	6/2/2017	230	5.44	
4	9/25/2017	210	5.35	
5	12/11/2017	200	5.30	
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18				

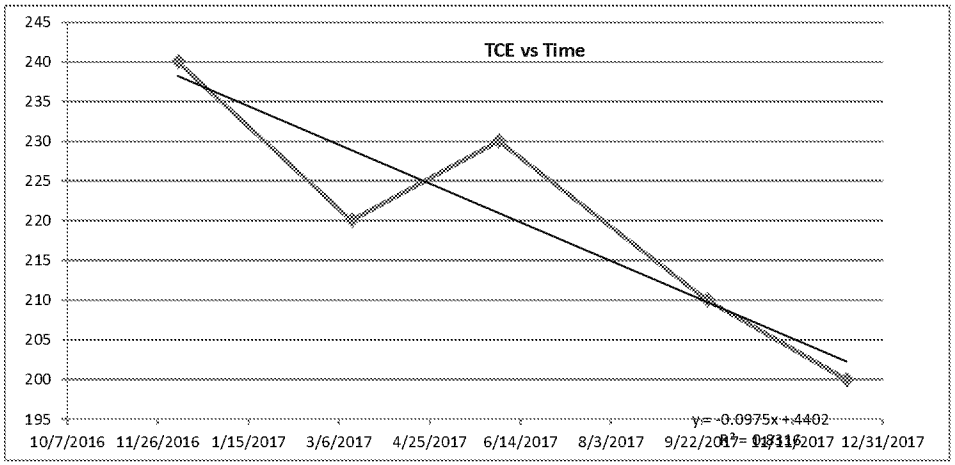
Mann Kendall Statistic (S) =	-8.0	-0.00045	
Number of Rounds (n) =	5		
Average =	220.00		
Standard Deviation =	15.811		
Coefficient of Variation(CV)=	0.072		

Error Check, Blank if No Errors Detected

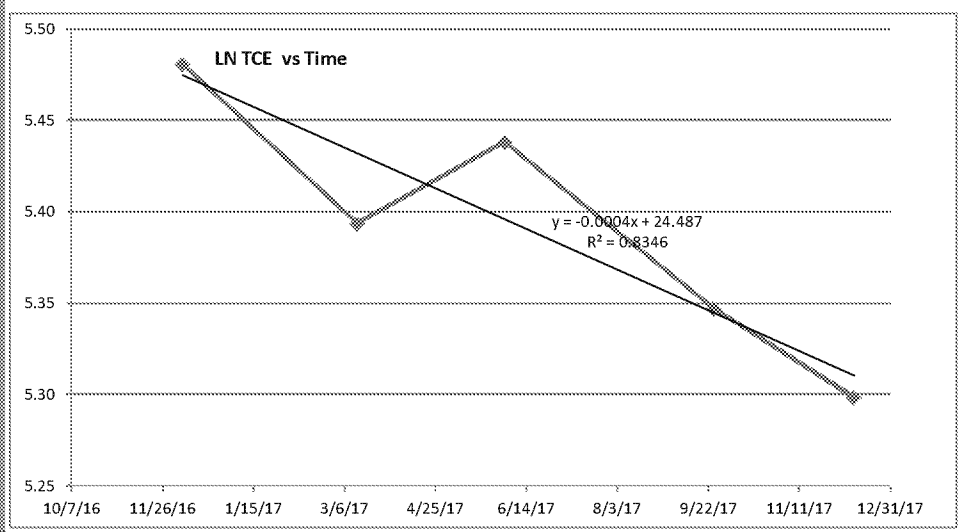
Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Feb 28 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE125D3

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	12/7/2016	150		
2	3/13/2017	140		
3	6/2/2017	140		
4	9/25/2017	140		
5	12/11/2017	150		
6				
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18				

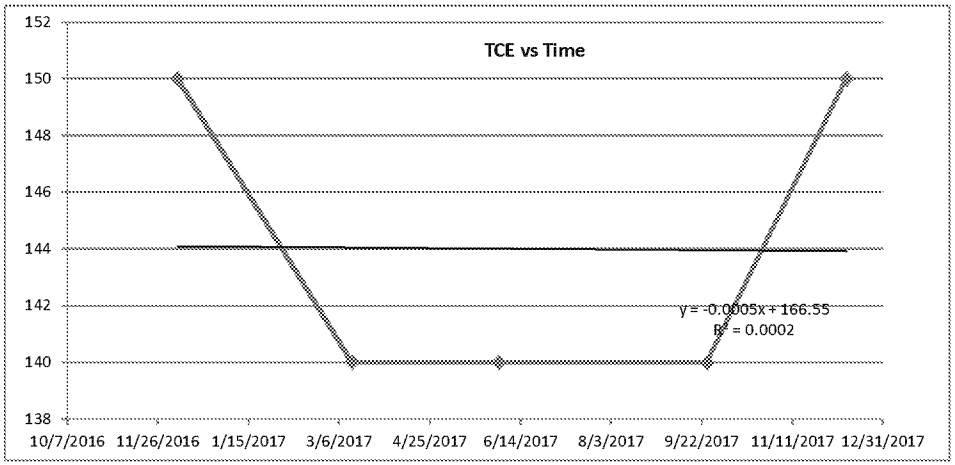
Mann Kendall Statistic (S) =	0.0		
Number of Rounds (n) =	5		
Average =	144.00		
Standard Deviation =	5.477		
Coefficient of Variation(CV)=	0.038		

Error Check, Blank if No Errors Detected

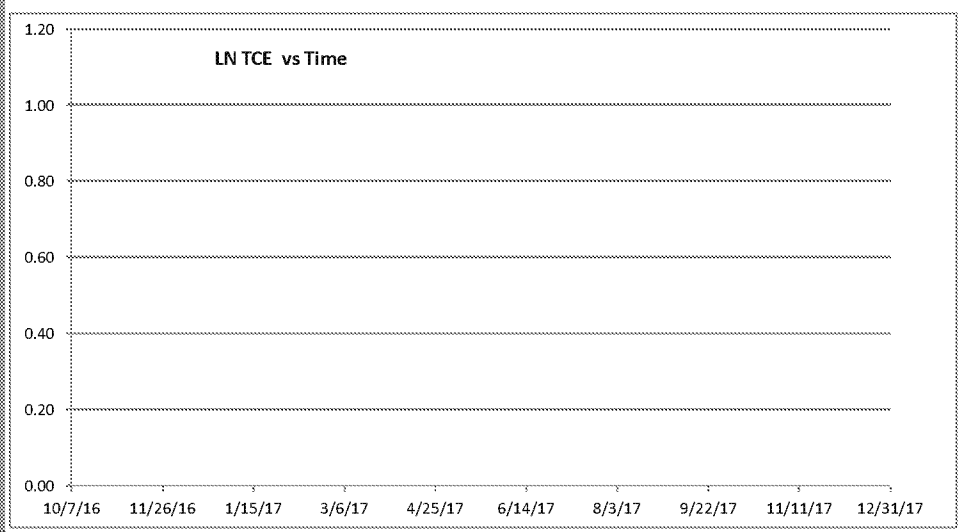
Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	CV <= 1 STABLE		

Data Entry By =	BC	Date =	Feb 28 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE126D1

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	6/21/2016	28		28
2	9/23/2016	23		23
3	12/6/2016	26		26
4	3/10/2017	34		34
5	6/5/2017	43		43
6	9/22/2017	65		65
7	12/7/2017	85		85
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17				
18				

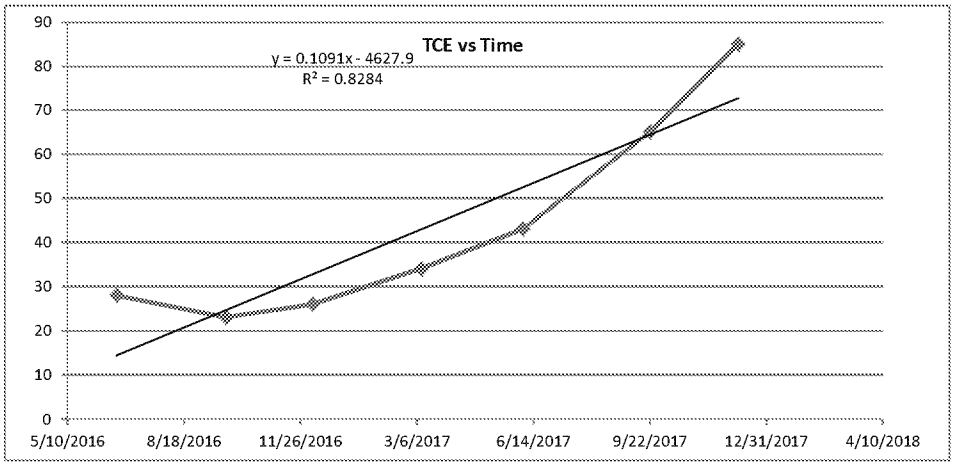
Mann Kendall Statistic (S) =	17.0		0.10912
Number of Rounds (n) =	7		
Average =	43.43		
Standard Deviation =	23.244		
Coefficient of Variation(CV)=	0.535		

Error Check, Blank if No Errors Detected

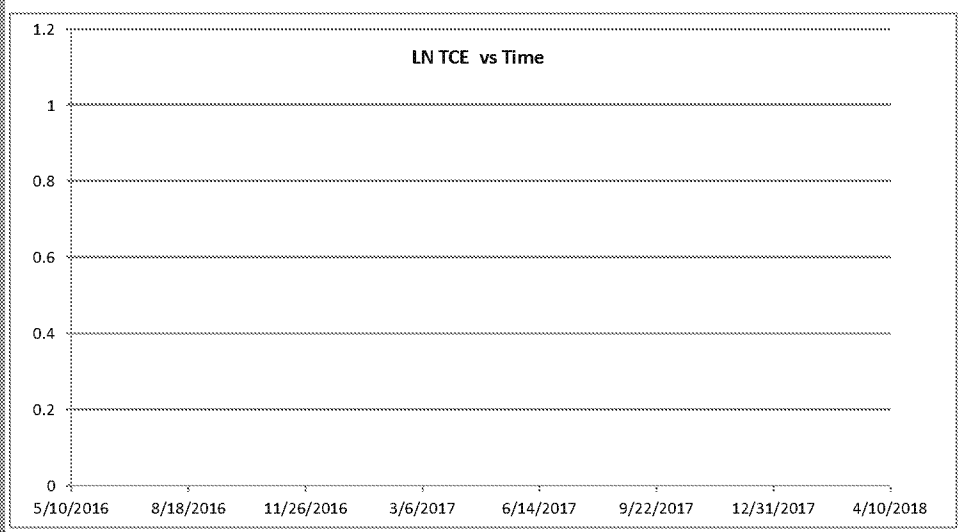
Trend ≥ 80% Confidence Level	INCREASING		
Trend ≥ 90% Confidence Level	INCREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By = BC | Date Feb 28 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE126D2

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	6/21/2016	520	6.253828812	
2	9/23/2016	520	6.253828812	
3	12/6/2016	530	6.272877007	
4	3/10/2017	400	5.991464547	
5	6/9/2017	480	6.173786104	
6	9/22/2017	460	6.131226489	
7	12/7/2017	450	6.109247583	
8				
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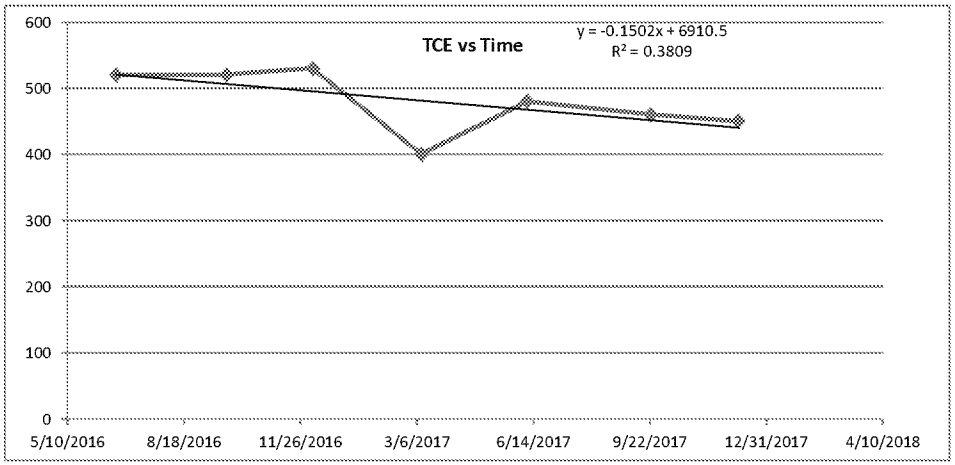
17				
18				

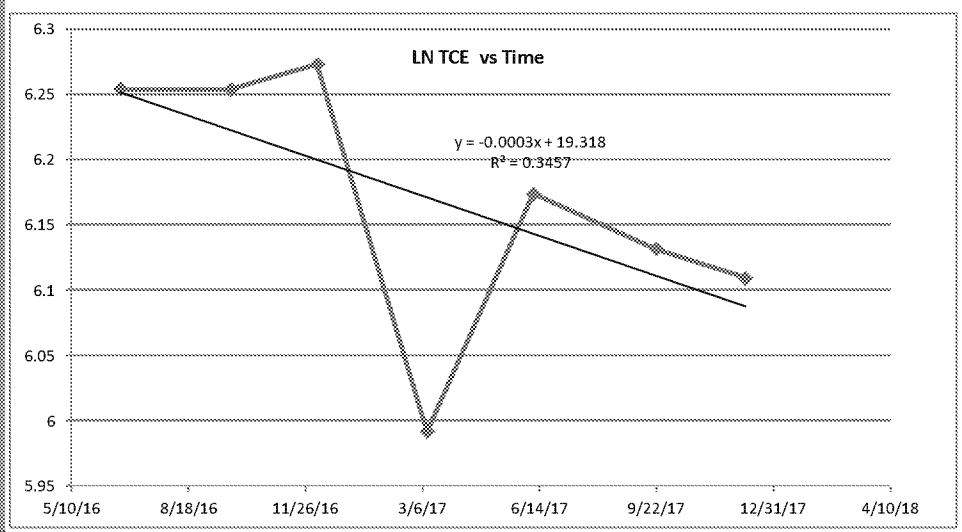
Mann Kendall Statistic (S) =	-10.0	-0.00031	
Number of Rounds (n) =	7		
Average =	480.00		
Standard Deviation =	47.258		
Coefficient of Variation(CV)=	0.098		

Error Check, Blank if No Errors Detected

Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Mar 1 2018





Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE126D3

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	6/21/2016	4		
2	9/23/2016	3.9		
3	12/6/2016	3.3		
4	3/10/2017	2		
5	6/9/2017	2.5		
6	9/22/2017	3.7		
7	12/7/2017	4.3		
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18				

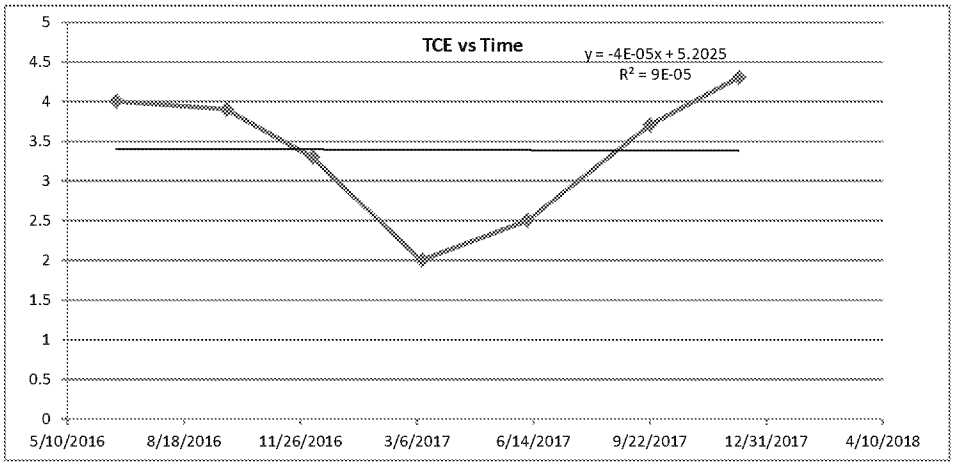
Mann Kendall Statistic (S) =	-1.0		
Number of Rounds (n) =	7		
Average =	3.39		
Standard Deviation =	0.845		
Coefficient of Variation(CV)=	0.250		

Error Check, Blank if No Errors Detected

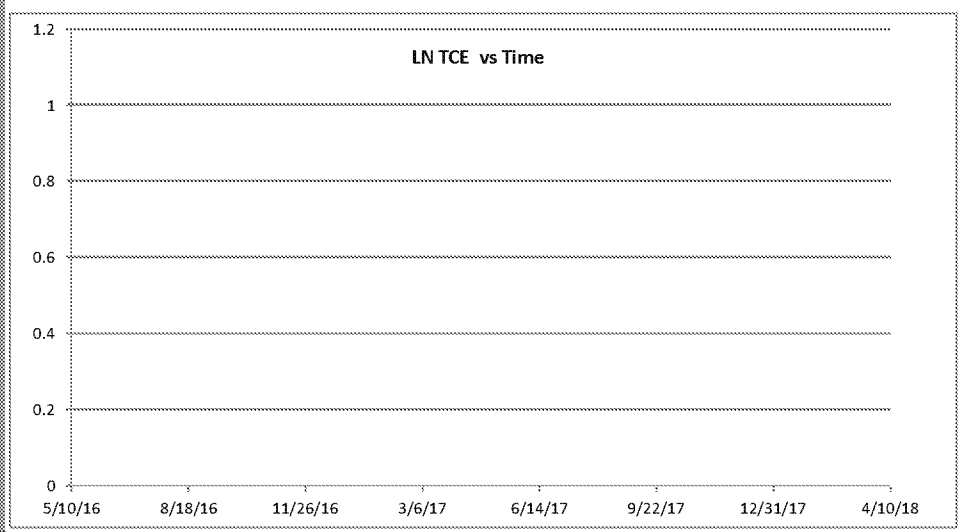
Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	CV <= 1 STABLE		

Data Entry By =	BC	Date =	Mar 1 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE131D1

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	6/23/2016	96		96
2	9/22/2016	110		110
3	12/6/2016	100		100
4	3/10/2017	110		110
5	6/2/2017	130		130
6	9/20/2017	140		140
7	12/7/2017	140		140
8				
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15				
16				
17				
18				

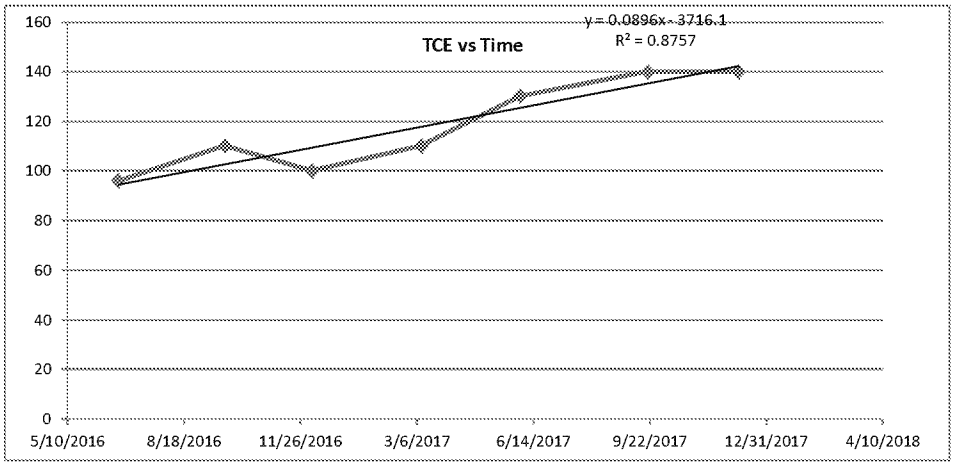
Mann Kendall Statistic (S) =	17.0		0.08957
Number of Rounds (n) =	7		
Average =	118.00		
Standard Deviation =	18.475		
Coefficient of Variation(CV)=	0.157		

Error Check, Blank if No Errors Detected

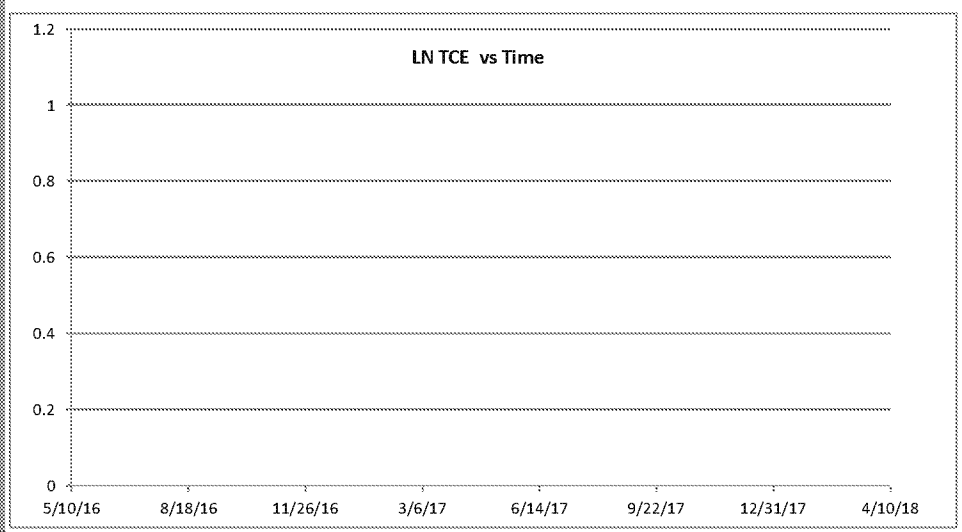
Trend ≥ 80% Confidence Level	INCREASING		
Trend ≥ 90% Confidence Level	INCREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Mar 1 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE131D2

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	6/23/2016	46		46
2	9/22/2016	42		42
3	12/6/2016	54		54
4	3/10/2017	45		45
5	6/2/2017	45		45
6	9/20/2017	67		67
7	12/7/2017	67		67
8				
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15				
16				
17				
18				

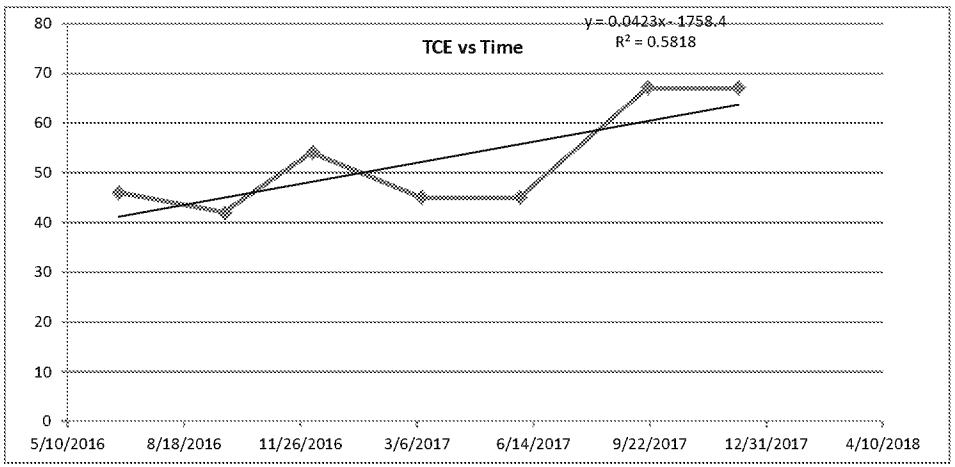
Mann Kendall Statistic (S) =	9.0		0.04230
Number of Rounds (n) =	7		
Average =	52.29		
Standard Deviation =	10.704		
Coefficient of Variation(CV)=	0.205		

Error Check, Blank if No Errors Detected

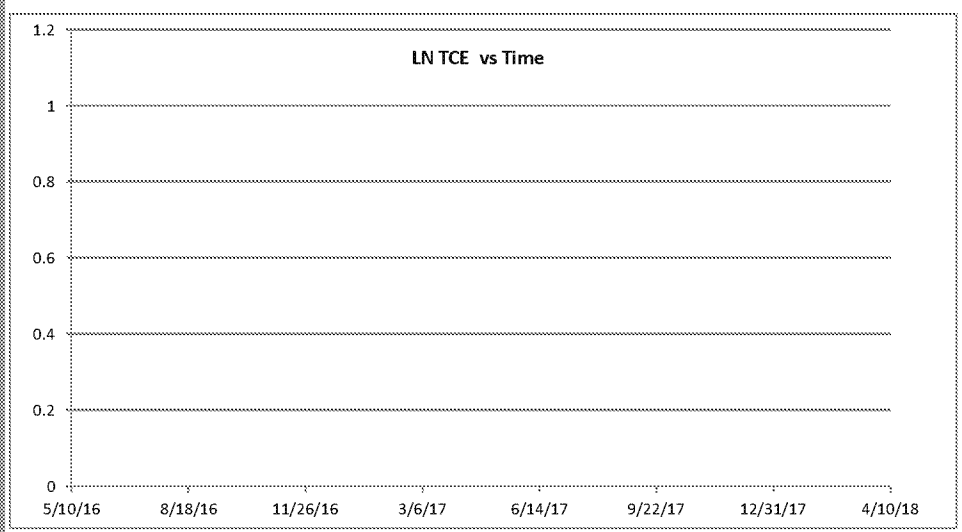
Trend ≥ 80% Confidence Level	INCREASING		
Trend ≥ 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Mar 1 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = RE131D3

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	6/23/2016	6.1		6.1
2	9/22/2016	6.1		6.1
3	12/6/2016	6.6		6.6
4	3/10/2017	6.3		6.3
5	6/2/2017	6.3		6.3
6	9/20/2017	9.1		9.1
7	12/7/2017	9.5		9.5
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14				
15				
16				
17				
18				

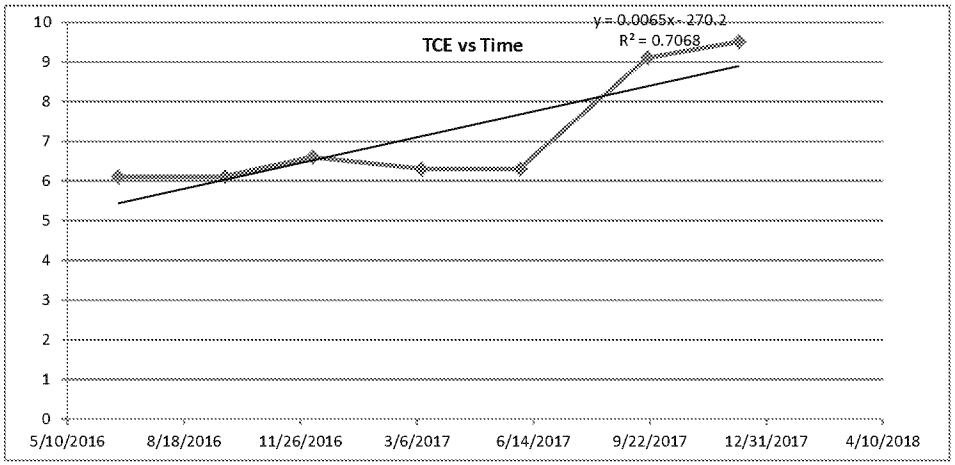
Mann Kendall Statistic (S) =	15.0		0.00648
Number of Rounds (n) =	7		
Average =	7.14		
Standard Deviation =	1.488		
Coefficient of Variation(CV)=	0.208		

Error Check, Blank if No Errors Detected

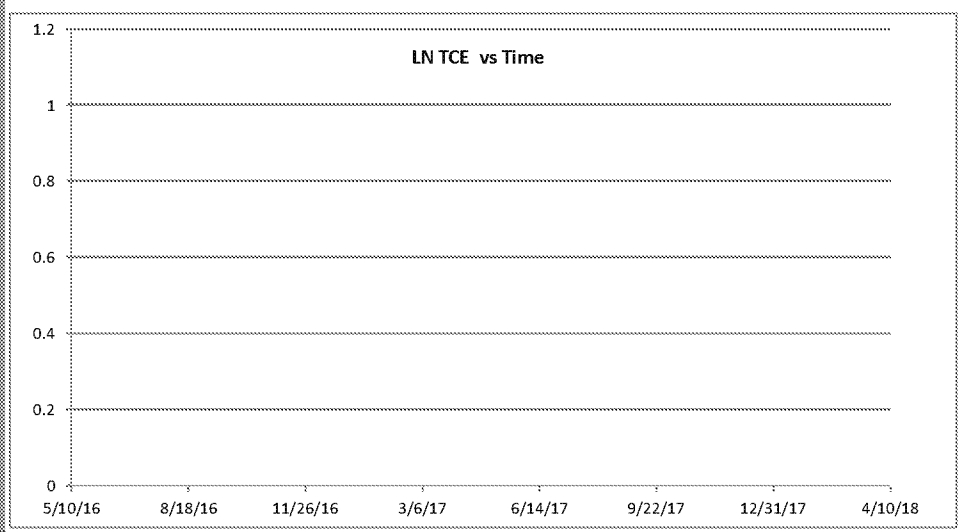
Trend ≥ 80% Confidence Level	INCREASING		
Trend ≥ 90% Confidence Level	INCREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By = BC **Date =** Mar 1 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number** = TT101D

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/13/2014	52		52
2	5/27/2014	57		57
3	9/25/2014	66		66
4	12/9/2014	67		67
5	3/24/2015	61		61
6	5/21/2015	68		68
7	6/22/2015	66		66
8	9/29/2015	67		67
9	12/17/2015	74		74
10	3/16/2016	67		67
11	6/21/2016	73		73
12	9/26/2016	69		69
13	12/6/2016	68		68
14	3/7/2017	70		70
15	6/1/2017	85		85
16	9/18/2017	62		62
17	12/8/2017	66		66
18				

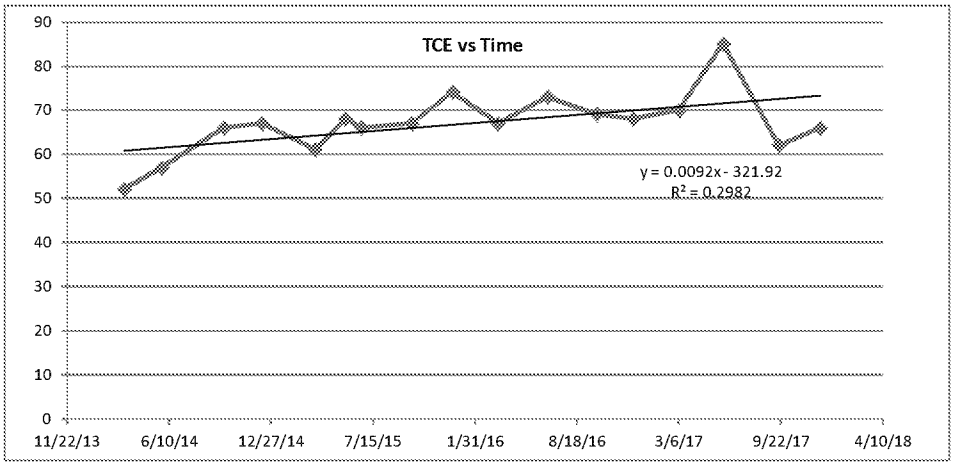
Mann Kendall Statistic (S) =	55.0		0.00917
Number of Rounds (n) =	17		
Average =	66.94		
Standard Deviation =	7.128		
Coefficient of Variation(CV)=	0.106		

Error Check, Blank if No Errors Detected

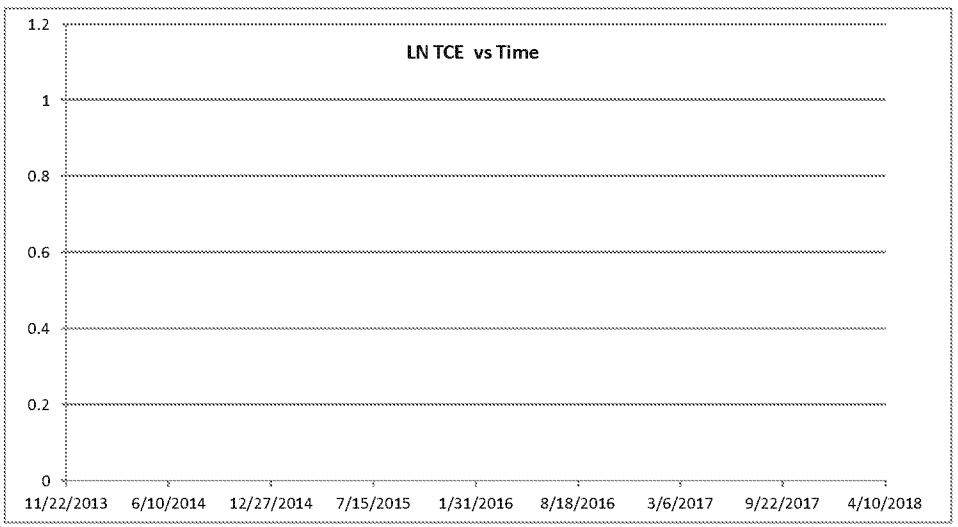
Trend ≥ 80% Confidence Level	INCREASING		
Trend ≥ 90% Confidence Level	INCREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Feb 27 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage	Well Number =	TT101D1

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/13/2014	170		170
2	5/27/2014	93		93
3	9/25/2014	160		160
4	12/9/2014	160		160
5	3/24/2015	170		170
6	5/21/2015	170		170
7	6/22/2015	180		180
8	9/29/2015	170		170
9	12/17/2015	200		200
10	3/16/2016	180		180
11	6/21/2016	190		190
12	9/21/2016	220		220
13	12/6/2016	190		190
14	3/7/2017	190		190
15	6/1/2017	200		200
16	9/18/2017	170		170
17	12/8/2017	170		170
18				

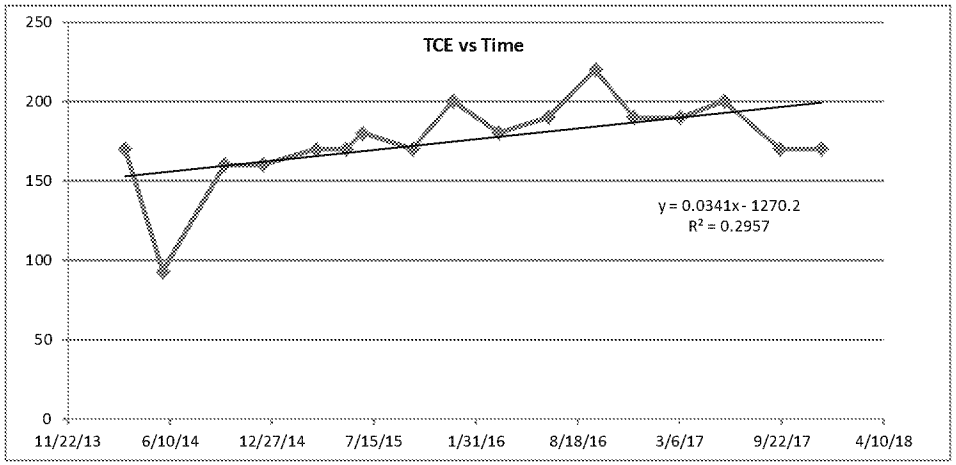
Mann Kendall Statistic (S) =	61.0		0.03411
Number of Rounds (n) =	17		
Average =	175.47		
Standard Deviation =	26.599		
Coefficient of Variation(CV)=	0.152		

Error Check, Blank if No Errors Detected

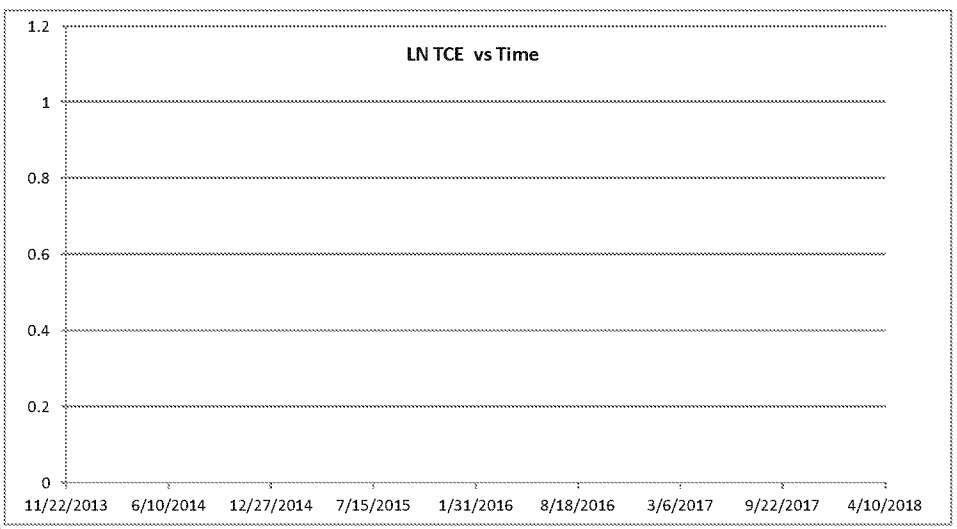
Trend ≥ 80% Confidence Level	INCREASING		
Trend ≥ 90% Confidence Level	INCREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By =	BC	Date =	Feb 27 2018

TCE Concentration Trend



LN TCE Concentration Trend



Mann-Kendall Statistical Test and First Order Change Rate

Site Name = Bethpage | **Well Number =** TT101D2

Event Number	Sampling Date (most recent last)	TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
	Compound ->			
1	3/13/2014	250		250
2	5/27/2014	300		300
3	9/25/2014	560		560
4	12/9/2014	520		520
5	3/24/2015	480		480
6	5/21/2015	620		620
7	6/22/2015	620		620
8	9/29/2015	640		640
9	12/17/2015	510		510
10	3/16/2016	590		590
11	6/21/2016	690		690
12	9/26/2016	680		680
13	12/6/2016	740		740
14	3/7/2017	780		780
15	6/1/2017	670		670
16	9/18/2017	630		630
17	12/8/2017	840		840
18				

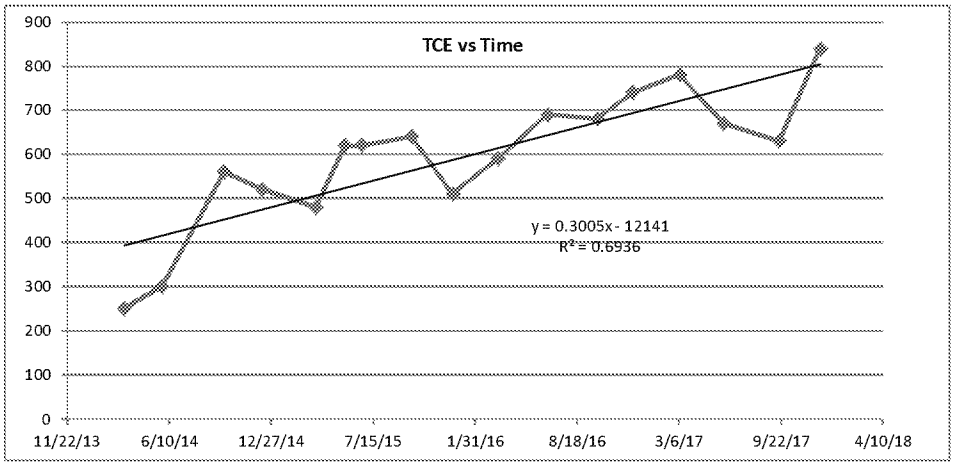
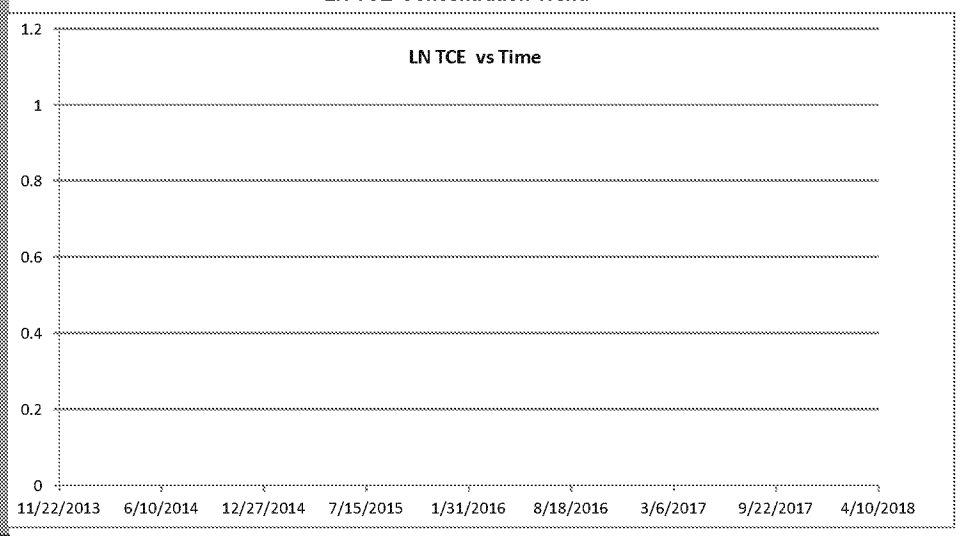
Mann Kendall Statistic (S) =	91.0		0.30051
Number of Rounds (n) =	17		
Average =	595.29		
Standard Deviation =	153.098		
Coefficient of Variation(CV)=	0.257		

Error Check, Blank if No Errors Detected

Trend ≥ 80% Confidence Level	INCREASING		
Trend ≥ 90% Confidence Level	INCREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By = BC **Date =** Feb 27 2018

TCE Concentration Trend



LN TCE Concentration Trend