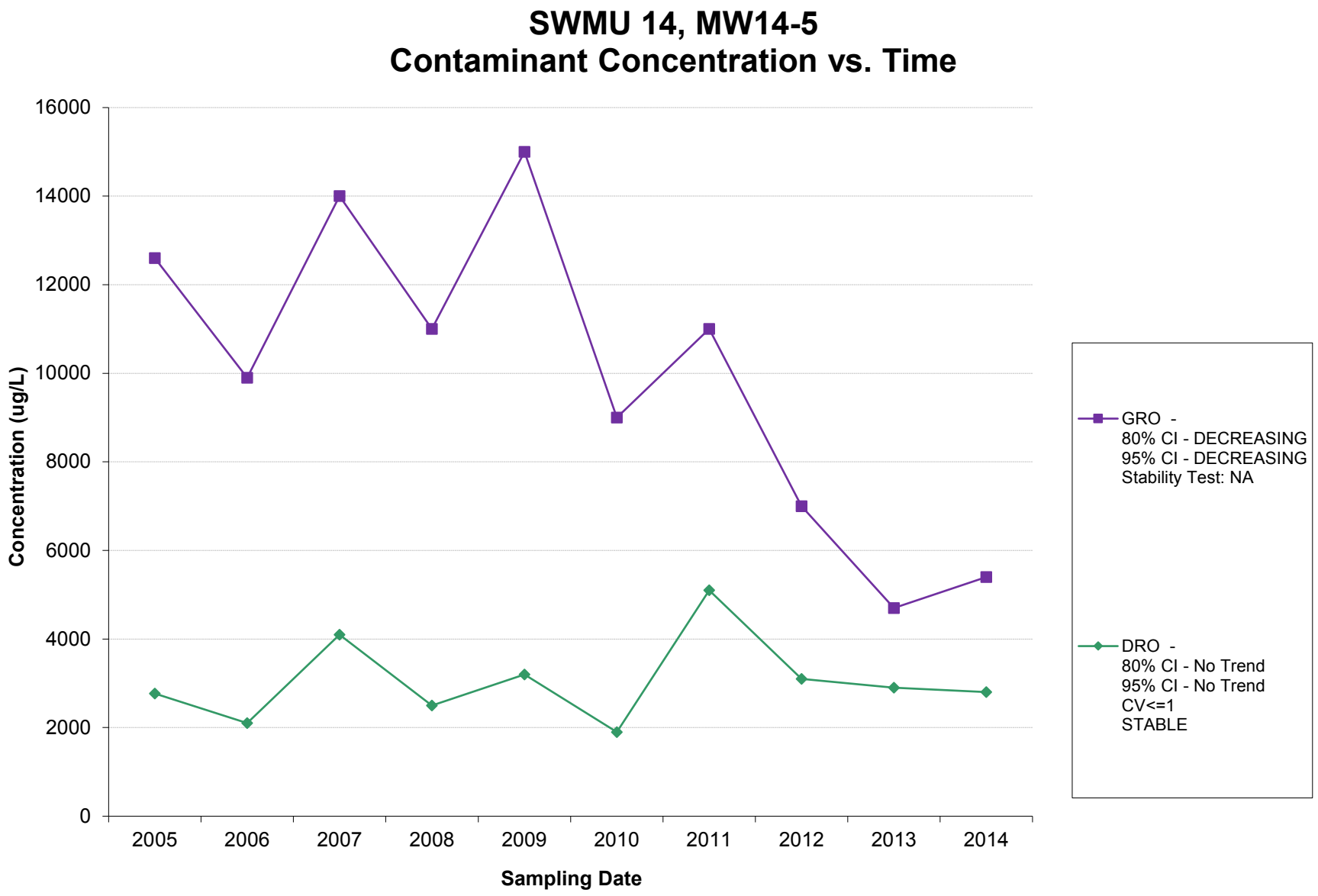

SWMU 14, MW14-5
Contaminant Concentration vs. Time
Concentration (ug/L)
16000
14000
12000
10000
8000
6000
4000
2000
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Sampling Date
GRO -
80% CI - DECREASING
95% CI - DECREASING
Stability Test: NA
DRO -
80% CI - No Trend
95% CI - No Trend
CV<=1
STABLE

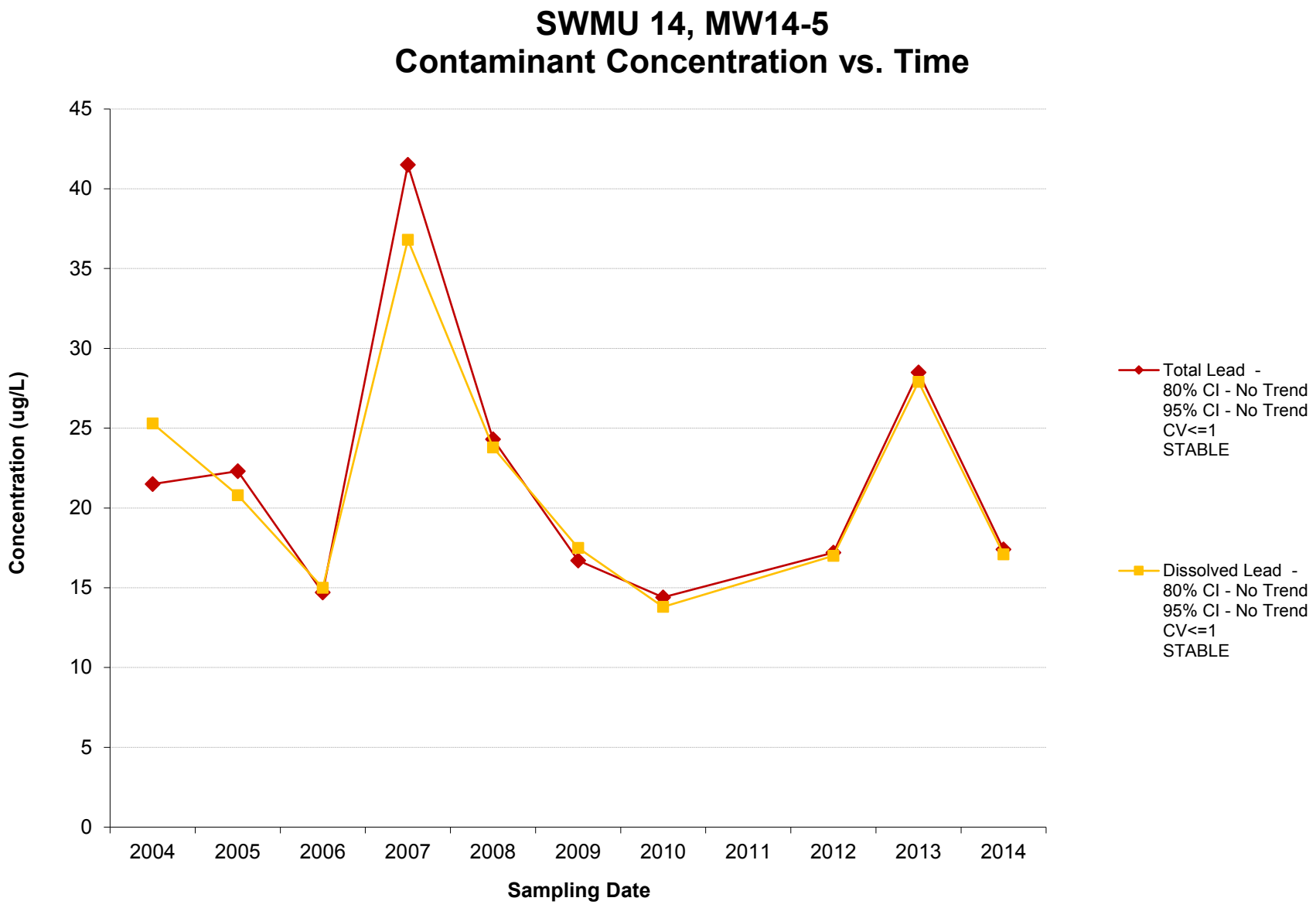
Mann-Kendall Statistical Test

Site Name =	2014 Adak Long Term Monitoring TO 05	Site ID No. =	SWMU 14	Well Number =	MW14-5

Event Number	Sampling Date (most recent last)	Total Lead Concentration (leave blank if no data)	Dissolved Lead Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
	Compound ->	**Total Lead**	**Dissolved Lead**				
1	10/01/04	**21.5**	**25.3**				
2	10/01/05	**22.3**	**20.8**				
3	10/01/06	14.7	15.0				
4	10/01/07	**41.5**	**36.8**				
5	10/01/08	**24.3**	**23.8**				
6	10/01/09	**16.7**	**17.5**				
7	10/01/10	14.4	13.8				
8	10/01/12	**17.2**	**17.0**				
9	10/01/13	**28.5**	**27.9**				
10	10/01/14	**17.4**	**17.1**				
	Mann Kendall Statistic (S) =	-1	-9	0	0	0	0
	Number of Rounds (n) =	10	10	0	0	0	0
	Average =	21.85	21.50	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	Standard Deviation =	8.241	7.090	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	Coefficient of Variation(CV)=	0.377	0.330	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected				N<4	N<4	N<4	N<4
Trend at 80% Confidence Level		No Trend	No Trend	N<4	N<4	N<4	N<4
Trend at 95% Confidence Level		No Trend	No Trend	N<4	N<4	N<4	N<4
Stability Test, If No Trend Exists at 80% Confidence Level		CV<=1 STABLE	CV<=1 STABLE	n<4 n<4	n<4 n<4	n<4 n<4	n<4 n<4

Data Entry By =	RB	Date =	12/8/2014	Checked By =	CA

NOTE: Values shown in bold font are above site endpoint criteria.


SWMU 14, MW14-5
Contaminant Concentration vs. Time
Concentration (ug/L)
45
40
35
30
25
20
15
10
5
0
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Sampling Date
Total Lead -
80% CI - No Trend
95% CI - No Trend
CV<=1
STABLE
Dissolved Lead -
80% CI - No Trend
95% CI - No Trend
CV<=1
STABLE

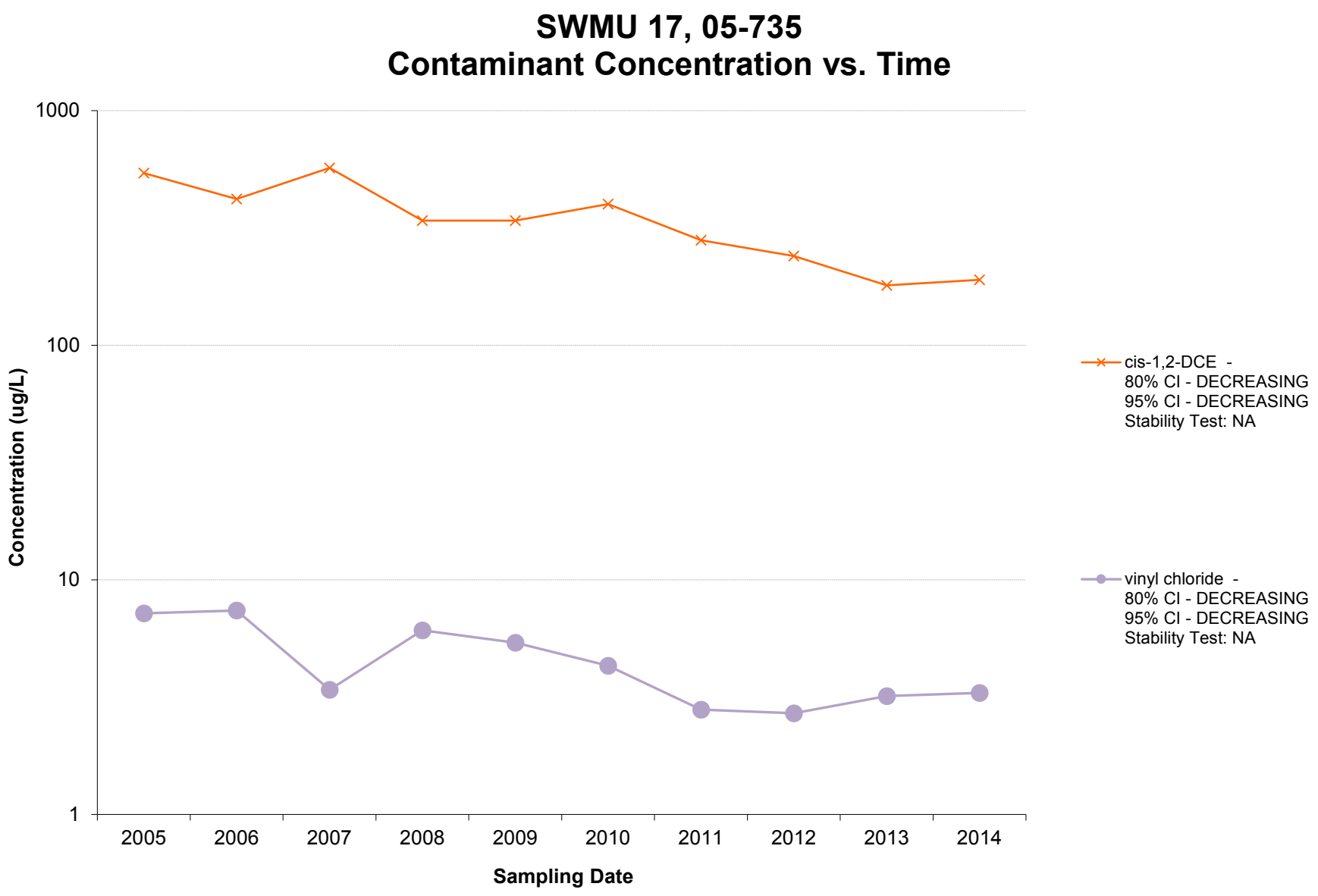
Mann-Kendall Statistical Test

Site Name =	2014 Adak Long Term Monitoring TO 05	Site ID No. =	SWMU 17	Well Number =	05-735

	Compound ->	cis-1,2-DCE	vinyl chloride				
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data - 0 if ND)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	10/01/05	**542**	**7.2**				
2	10/01/06	**420**	**7.4**				
3	10/01/07	**570**	**3.4**				
4	10/01/08	**340**	**6.1**				
5	10/01/09	**340**	**5.4**				
6	10/01/10	**400**	**4.3**				
7	10/01/11	**280**	**2.8**				
8	10/01/12	**240**	**2.7**				
9	10/01/13	**180**	**3.2**				
10	10/01/14	**190**	**3.3**				
	Mann Kendall Statistic (S) =	-34	-27	0	0	0	0
	Number of Rounds (n) =	10	10	0	0	0	0
	Average =	350.20	4.58	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	Standard Deviation =	135.139	1.811	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	Coefficient of Variation(CV)=	0.386	0.395	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected				N<4	N<4	N<4	N<4
Trend at 80% Confidence Level		DECREASING	DECREASING	N<4	N<4	N<4	N<4
Trend at 95% Confidence Level		DECREASING	DECREASING	N<4	N<4	N<4	N<4
Stability Test, If No Trend Exists at 80% Confidence Level		NA	NA	n<4 n<4	n<4 n<4	n<4 n<4	n<4 n<4

Data Entry By =	RB	Date =	12/8/2014	Checked By =	CA

NOTE: Values shown in bold font are above site endpoint criteria.


SWMU 17, 05-735
Contaminant Concentration vs. Time
1000
100
10
1
Concentration (ug/L)
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Sampling Date
cis-1,2-DCE -
80% CI - DECREASING
95% CI - DECREASING
Stability Test: NA
vinyl chloride -
80% CI - DECREASING
95% CI - DECREASING
Stability Test: NA

Mann-Kendall Statistical Test

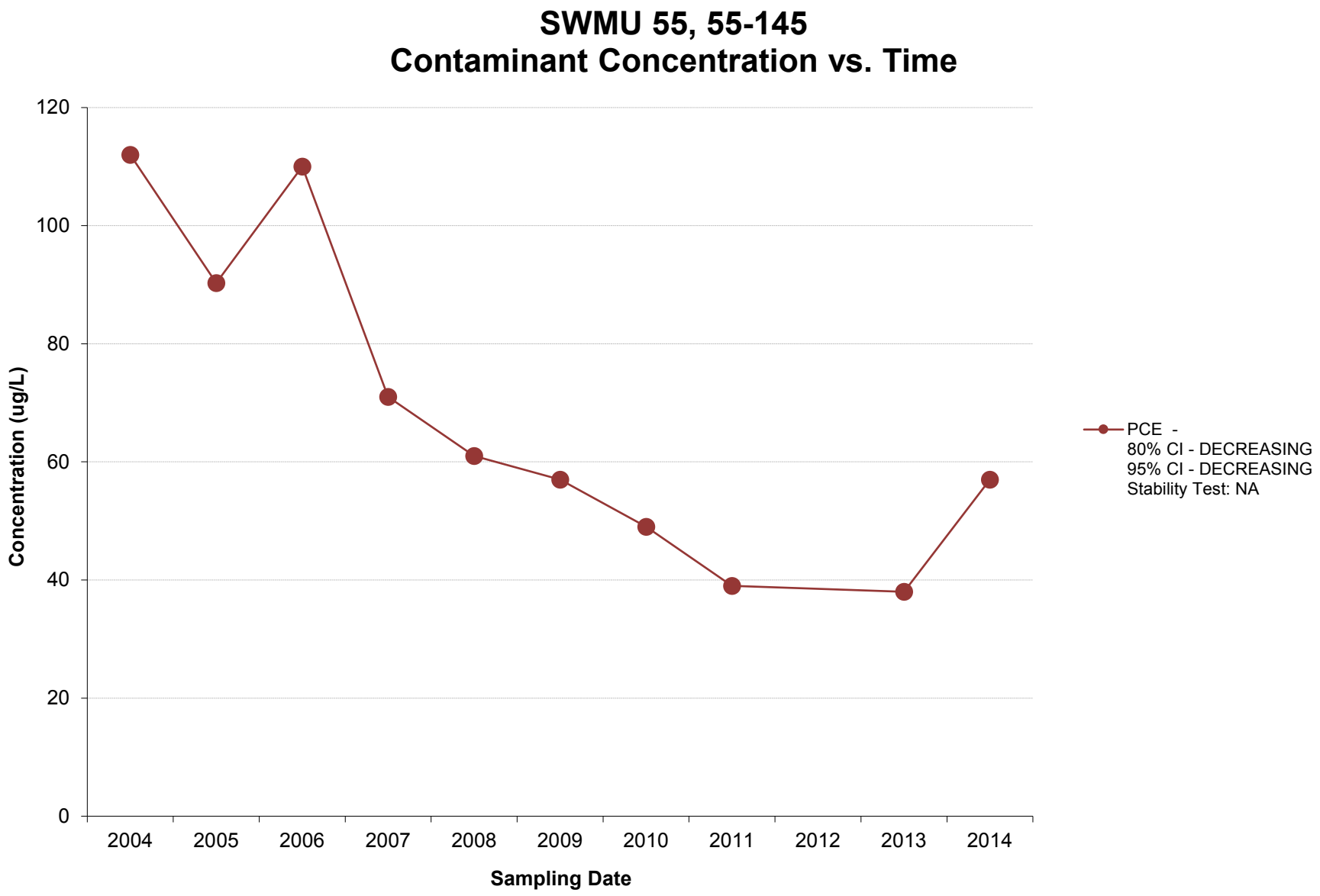
Site Name =	2014 Adak Long Term Monitoring TO 05	Site ID No. =	SWMU 55	Well Number =	55-145

	Compound ->	PCE					
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data - 0 if ND)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	10/01/04	**112**					
2	10/01/05	**90.3**					
3	10/01/06	**110**					
4	10/01/07	**71**					
5	10/01/08	**61**					
6	10/01/09	**57**					
7	10/01/10	**49**					
8	10/01/11	**39**					
9	10/01/13	**38**					
10	10/01/14	**57**					

Mann Kendall Statistic (S) =	-36	0	0	0	0	0
Number of Rounds (n) =	10	0	0	0	0	0
Average =	68.43	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =	27.075	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=	0.396	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected		N<4	N<4	N<4	N<4	N<4
Trend at 80% Confidence Level	DECREASING	N<4	N<4	N<4	N<4	N<4
Trend at 95% Confidence Level	DECREASING	N<4	N<4	N<4	N<4	N<4
Stability Test, If No Trend Exists at 80% Confidence Level	NA	n<4 n<4	n<4 n<4	n<4 n<4	n<4 n<4	n<4 n<4

Data Entry By =	RB	Date =	12/8/2014	Checked By =	CA

NOTE: Values shown in bold font are above site endpoint criteria.


SWMU 55, 55-145
Contaminant Concentration vs. Time
Concentration (ug/L)
120
100
80
60
40
20
0
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Sampling Date
PCE -
80% CI - DECREASING
95% CI - DECREASING
Stability Test: NA

Mann-Kendall Statistical Test

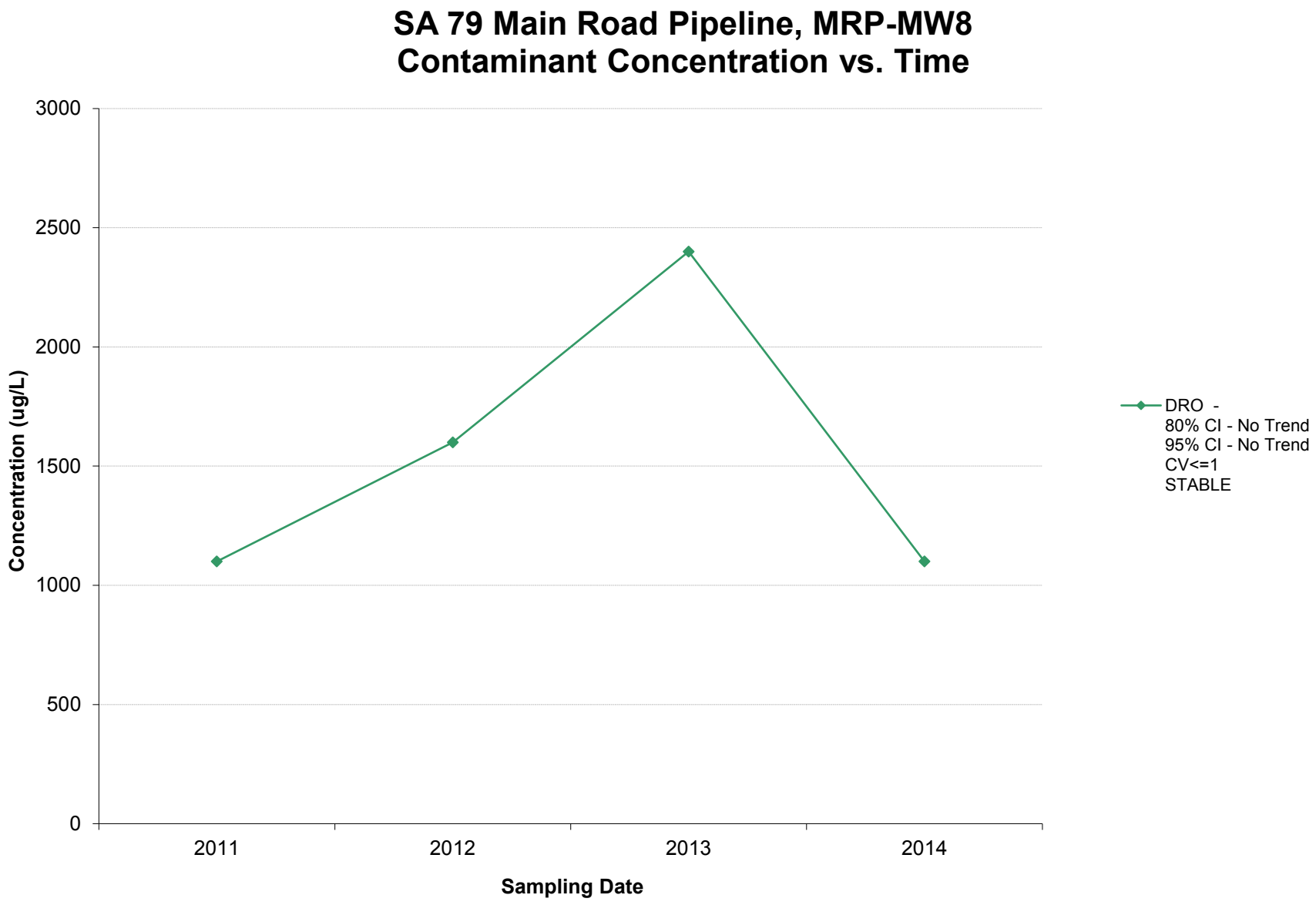
Site Name =	2014 Adak Long Term Monitoring TO 05	Site ID No. =	SWMU 60	Well Number =	650

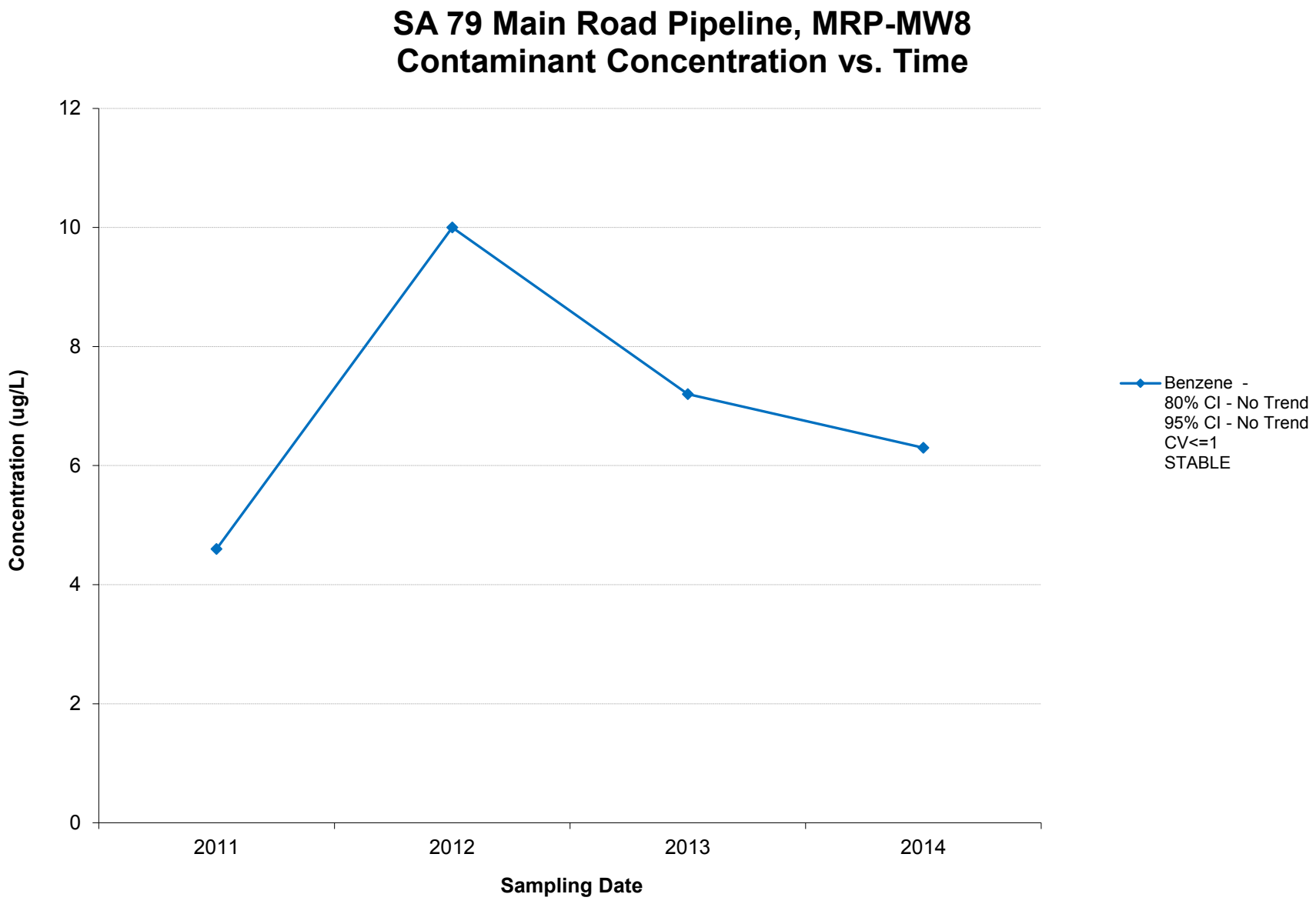
Event Number	Sampling Date (most recent last)	DRO Concentration (leave blank if no data)	Benzene Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
	Compound ->	DRO	Benzene				
1	10/01/11	1,100	4.6				
2	10/01/12	**1,600**	**10**				
3	10/01/13	**2,400**	**7.2**				
4	10/01/14	1,100	**6.3**				
5							
6							
7							
8							
9							
10							

Mann Kendall Statistic (S) =	1	0	0	0	0	0
Number of Rounds (n) =	4	4	0	0	0	0
Average =	1550.00	7.03	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =	613.732	2.257	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=	0.396	0.321	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected			N<4	N<4	N<4	N<4
Trend at 80% Confidence Level	No Trend	No Trend	N<4	N<4	N<4	N<4
Trend at 95% Confidence Level	No Trend	No Trend	N<4	N<4	N<4	N<4
Stability Test, If No Trend Exists at 80% Confidence Level	CV<=1 STABLE	CV<=1 STABLE	n<4 n<4	n<4 n<4	n<4 n<4	n<4 n<4

Data Entry By =	RB	Date =	12/8/2014	Checked By =	CA

NOTE: Values shown in bold font are above site endpoint criteria.


SA 79 Main Road Pipeline, MRP-MW8
Contaminant Concentration vs. Time
Concentration (ug/L)
3000
2500
2000
1500
1000
500
0
2011
2012
2013
2014
Sampling Date
DRO -
80% CI - No Trend
95% CI - No Trend
CV<=1
STABLE


SA 79 Main Road Pipeline, MRP-MW8
Contaminant Concentration vs. Time
Concentration (ug/L)
12
10
8
6
4
2
0
2011
2012
2013
2014
Sampling Date
Benzene -
80% CI - No Trend
95% CI - No Trend
CV<=1
STABLE

Mann-Kendall Statistical Test

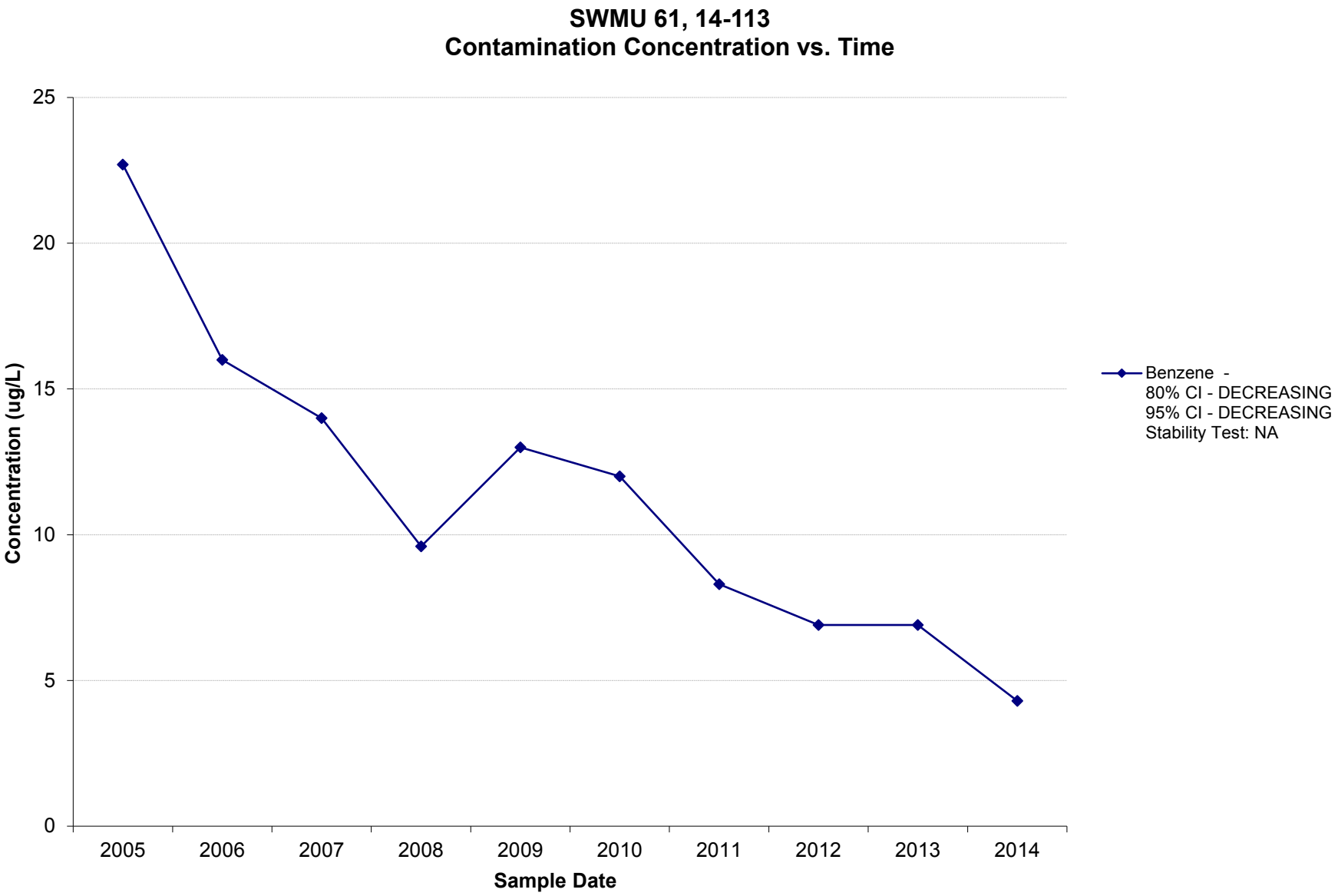
Site Name =	2014 Adak Long Term Monitoring TO 05	Site ID No. =	SWMU 61	Well Number =	14-113

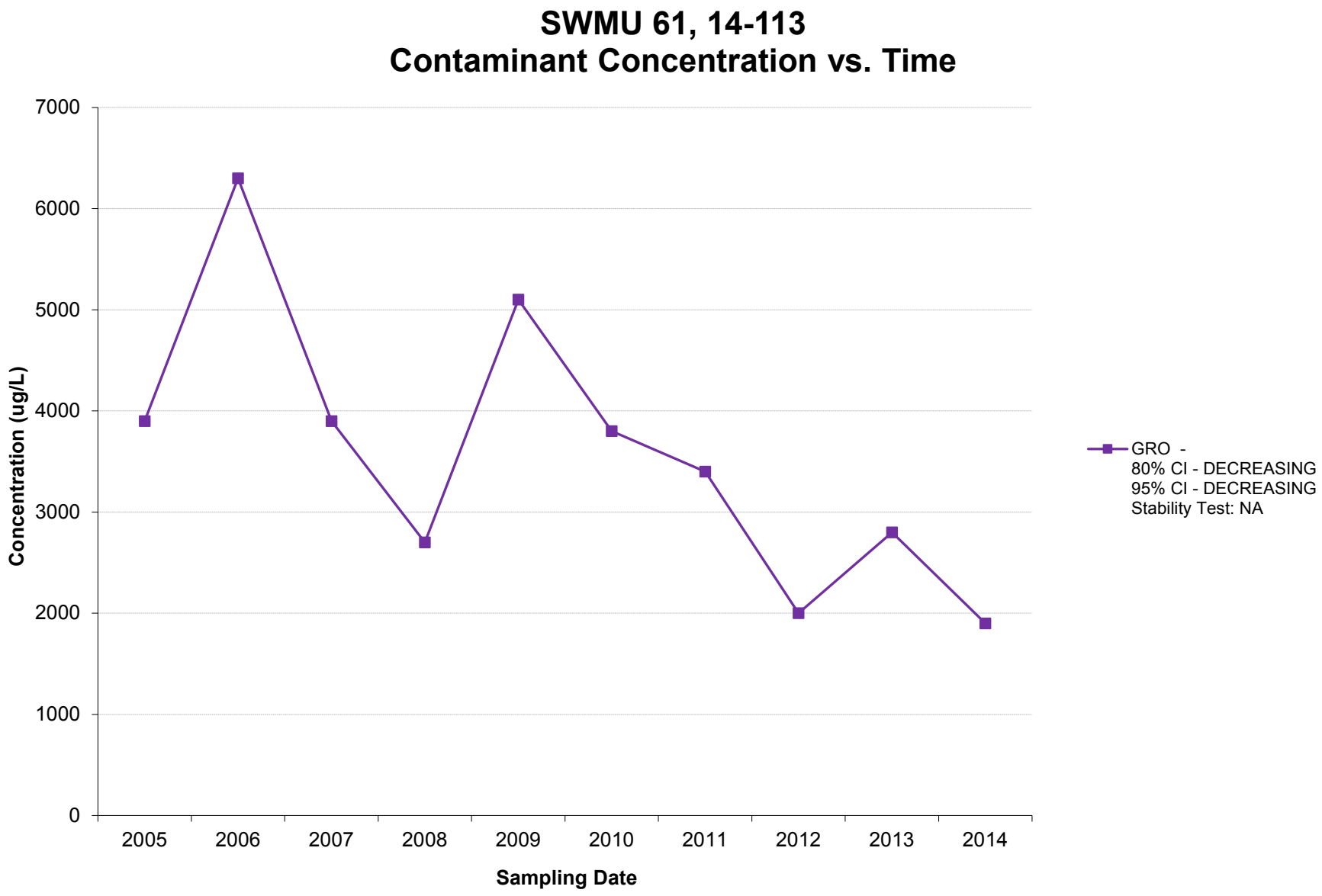
	Compound ->	Benzene	GRO				
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	10/01/05	**22.7**	**3,900**				
2	10/01/06	**16**	**6,300**				
3	10/01/07	**14**	**3,900**				
4	10/01/08	**9.6**	**2,700**				
5	10/01/09	**13**	**5,100**				
6	10/01/10	**12**	**3,800**				
7	10/01/11	**8.3**	**3,400**				
8	10/01/12	**6.9**	2,000				
9	10/01/13	**6.9**	**2,800**				
10	10/01/14	4.3	1,900				

Mann Kendall Statistic (S) =	-40	-28	0	0	0	0
Number of Rounds (n) =	10	10	0	0	0	0
Average =	11.37	3580.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =	5.398	1362.025	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=	0.475	0.380	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected			N<4	N<4	N<4	N<4
Trend at 80% Confidence Level	DECREASING	DECREASING	N<4	N<4	N<4	N<4
Trend at 95% Confidence Level	DECREASING	DECREASING	N<4	N<4	N<4	N<4
Stability Test, If No Trend Exists at 80% Confidence Level	NA	NA	n<4 n<4	n<4 n<4	n<4 n<4	n<4 n<4

Data Entry By =	RB	Date =	12/8/2014	Checked By =	CA

NOTE: Values shown in bold font are above site endpoint criteria.


SWMU 61, 14-113
Contamination Concentration vs. Time
Concentration (ug/L)
25
20
15
10
5
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Sample Date
Benzene -
80% CI - DECREASING
95% CI - DECREASING
Stability Test: NA


SWMU 61, 14-113
Contaminant Concentration vs. Time
Concentration (ug/L)
7000
6000
5000
4000
3000
2000
1000
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Sampling Date
GRO -
80% CI - DECREASING
95% CI - DECREASING
Stability Test: NA

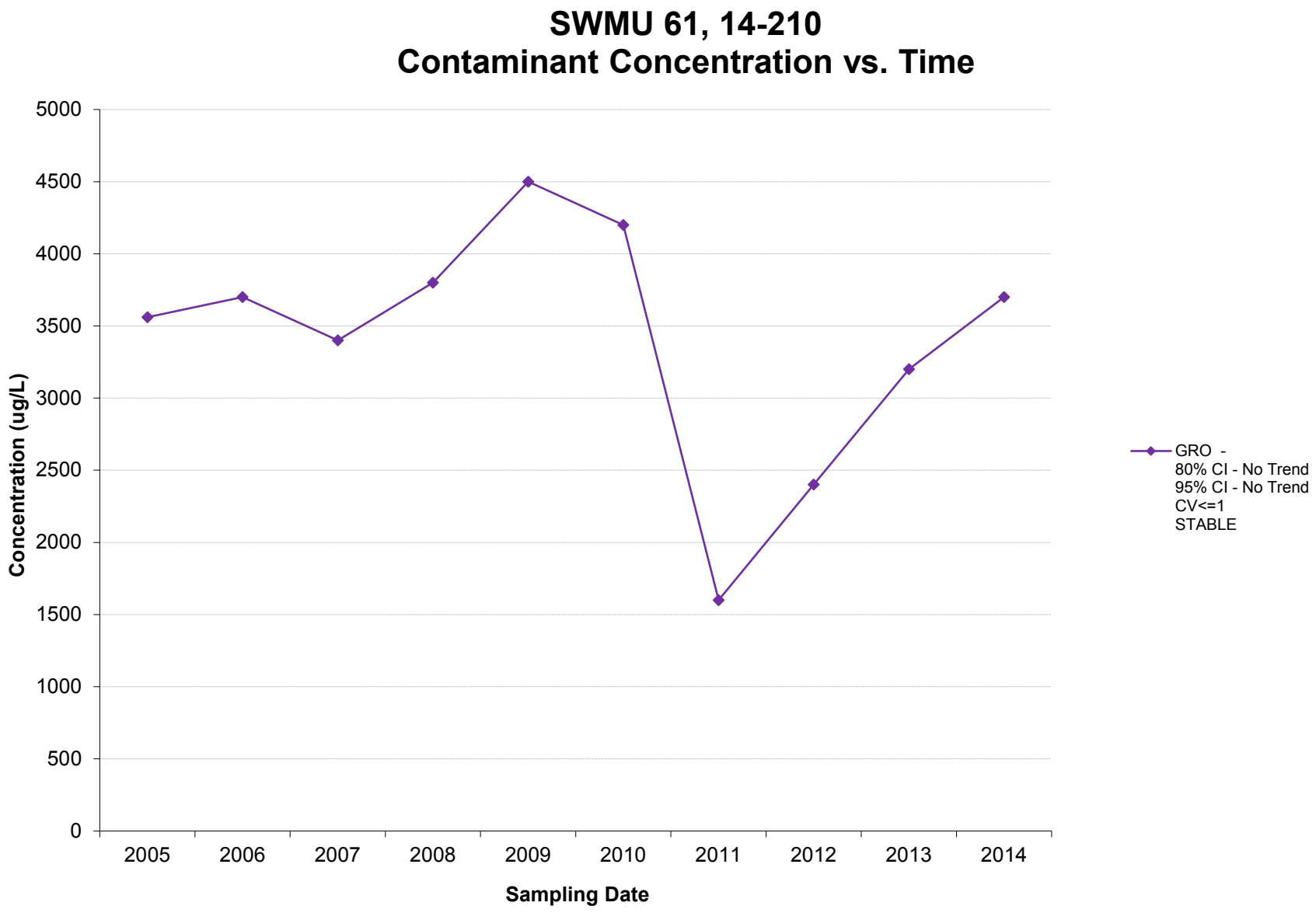
Mann-Kendall Statistical Test

Site Name =	2014 Adak Long Term Monitoring TO 05	Site ID No. =	SWMU 61	Well Number =	14-210

	Compound ->	GRO					
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	10/01/05	**3,560**					
2	10/01/06	**3,700**					
3	10/01/07	**3,400**					
4	10/01/08	**3,800**					
5	10/01/09	**4,500**					
6	10/01/10	**4,200**					
7	10/01/11	1,600					
8	10/01/12	**2,400**					
9	10/01/13	**3,200**					
10	10/01/14	**3,700**					

Mann Kendall Statistic (S) =	-4	0	0	0	0	0
Number of Rounds (n) =	10	0	0	0	0	0
Average =	3406.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =	849.525	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=	0.249	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected		N<4	N<4	N<4	N<4	N<4
Trend at **80% Confidence Level**	**No Trend**	N<4	N<4	N<4	N<4	N<4
Trend at **95% Confidence Level**	**No Trend**	N<4	N<4	N<4	N<4	N<4
Stability Test, If No Trend Exists at 80% Confidence Level	**CV<=1**	n<4	n<4	n<4	n<4	n<4
	STABLE	n<4	n<4	n<4	n<4	n<4

Data Entry By =	RB	Date =	12/8/2014	Checked By =	CA


SWMU 61, 14-210
Contaminant Concentration vs. Time
Concentration (ug/L)
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Sampling Date
GRO -
80% CI - No Trend
95% CI - No Trend
CV<=1
STABLE

Mann-Kendall Statistical Test

Site Name =	2014 Adak Long Term Monitoring TO 05	Site ID No. =	SWMU 61	Well Number =	TFB-MW4B

	Compound ->	Benzene	GRO	Toluene	Ethylbenzene	Xylenes	
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	10/01/05	**49.5**	**46,700**	**4,580**	**1,750**	**12,500**	
2	10/01/06	**31**	**40,000**	**3,500**	**1,400**	**10,800**	
3	10/01/07	**39**	**41,000**	**4,100**	**1,700**	**12,800**	
4	10/01/08	**29**	**53,000**	**4,400**	**1,600**	**12,600**	
5	10/01/09	**31**	**50,000**	**4,800**	**2,000**	**14,900**	
6	10/01/10	**30**	**46,000**	**4,600**	**2,100**	**15,700**	
7	10/01/11	**23**	**51,000**	**4,100**	**1,900**	**15,300**	
8	10/01/12	**24**	**36,000**	**4,800**	**2,100**	**15,600**	
9	10/01/13	**20**	**43,000**	**4,000**	**1,900**	**13,900**	
10	10/01/14	**20**	**40,000**	**4,300**	**1,900**	**14,200**	

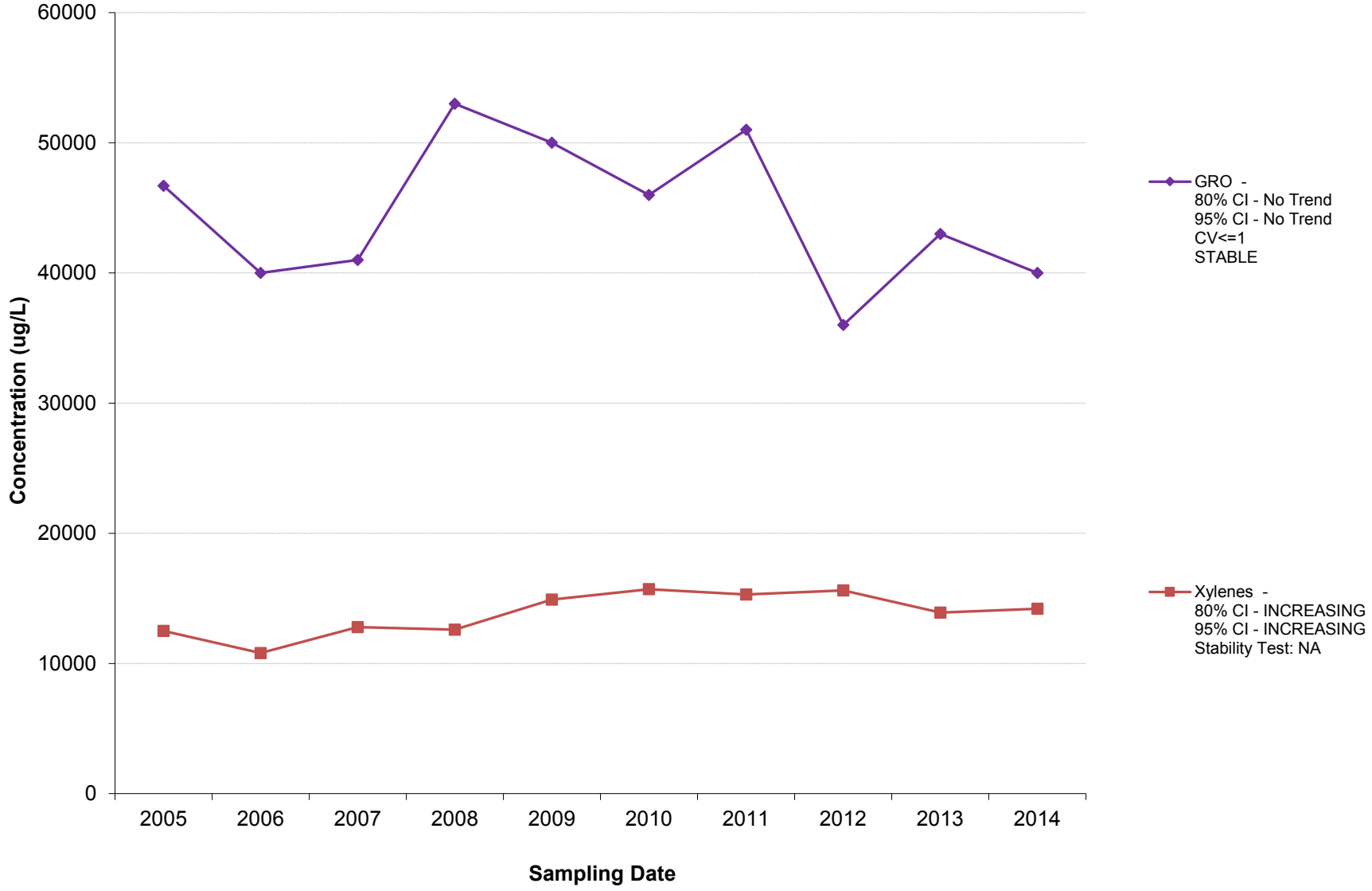
Mann Kendall Statistic (S) =	-35	-8	3	17	21	0
Number of Rounds (n) =	10	10	10	10	10	0
Average =	29.65	44670.00	4318.00	1835.00	13830.00	#DIV/0!
Standard Deviation =	9.117	5565.778	406.224	223.669	1619.362	#DIV/0!
Coefficient of Variation(CV)=	0.307	0.125	0.094	0.122	0.117	#DIV/0!

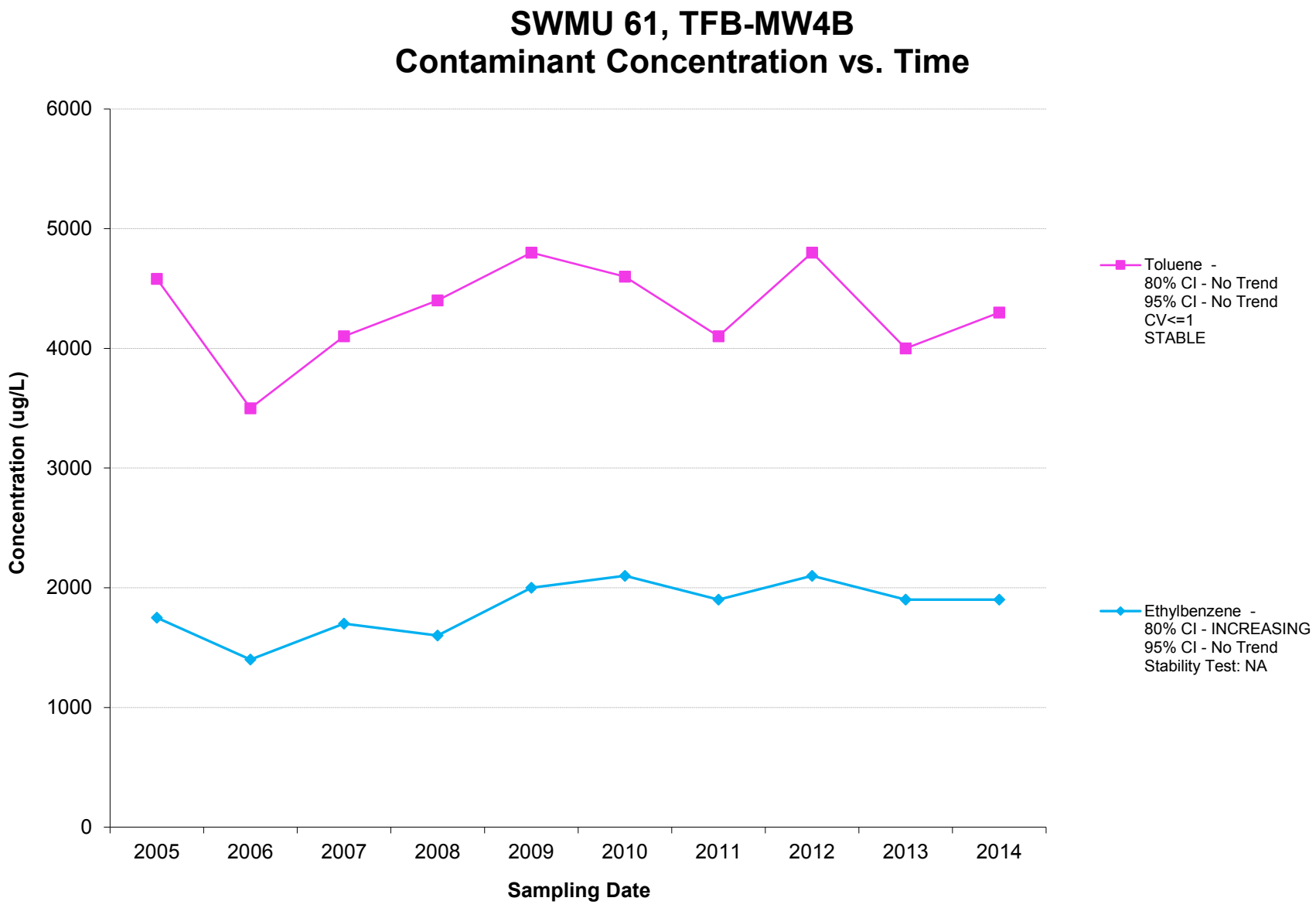
Error Check, Blank if No Errors Detected						N<4
Trend at 80% Confidence Level	DECREASING	No Trend	No Trend	INCREASING	INCREASING	N<4
Trend at 95% Confidence Level	DECREASING	No Trend	No Trend	No Trend	INCREASING	N<4
Stability Test, If No Trend Exists at 80% Confidence Level	NA	CV<=1 STABLE	CV<=1 STABLE	NA	NA	n<4 n<4

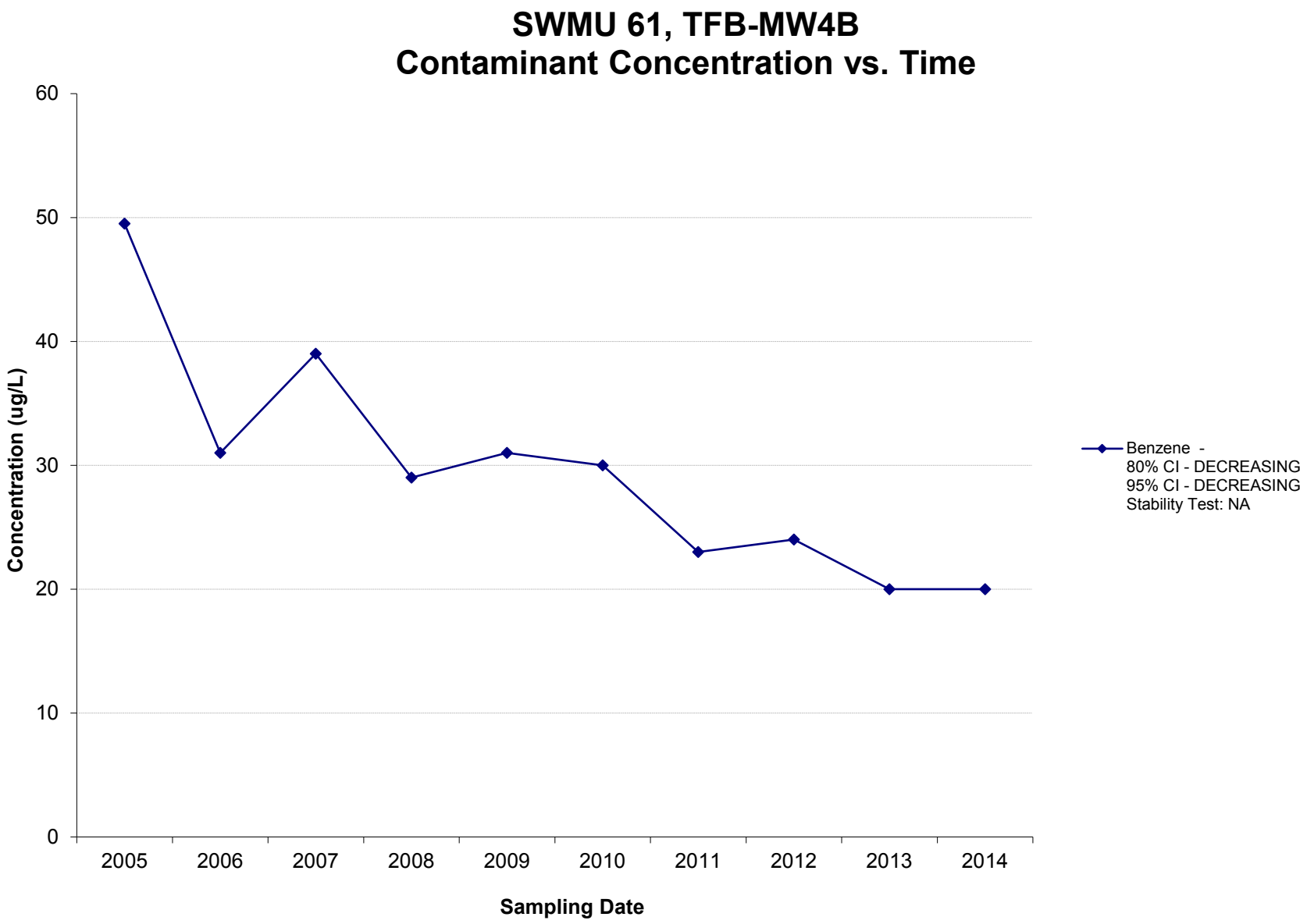
Data Entry By =	RB	Date =	12/8/2014	Checked By =	CA

NOTE: Values shown in bold font are above site endpoint criteria.

SWMU 61, TFB-MW4B
Contaminant Concentration vs. Time




SWMU 61, TFB-MW4B
Contaminant Concentration vs. Time
Concentration (ug/L)
6000
5000
4000
3000
2000
1000
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Sampling Date
Toluene -
80% CI - No Trend
95% CI - No Trend
CV<=1
STABLE
Ethylbenzene -
80% CI - INCREASING
95% CI - No Trend
Stability Test: NA


SWMU 61, TFB-MW4B
Contaminant Concentration vs. Time
Concentration (ug/L)
60
50
40
30
20
10
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Sampling Date
Benzene -
80% CI - DECREASING
95% CI - DECREASING
Stability Test: NA

Mann-Kendall Statistical Test

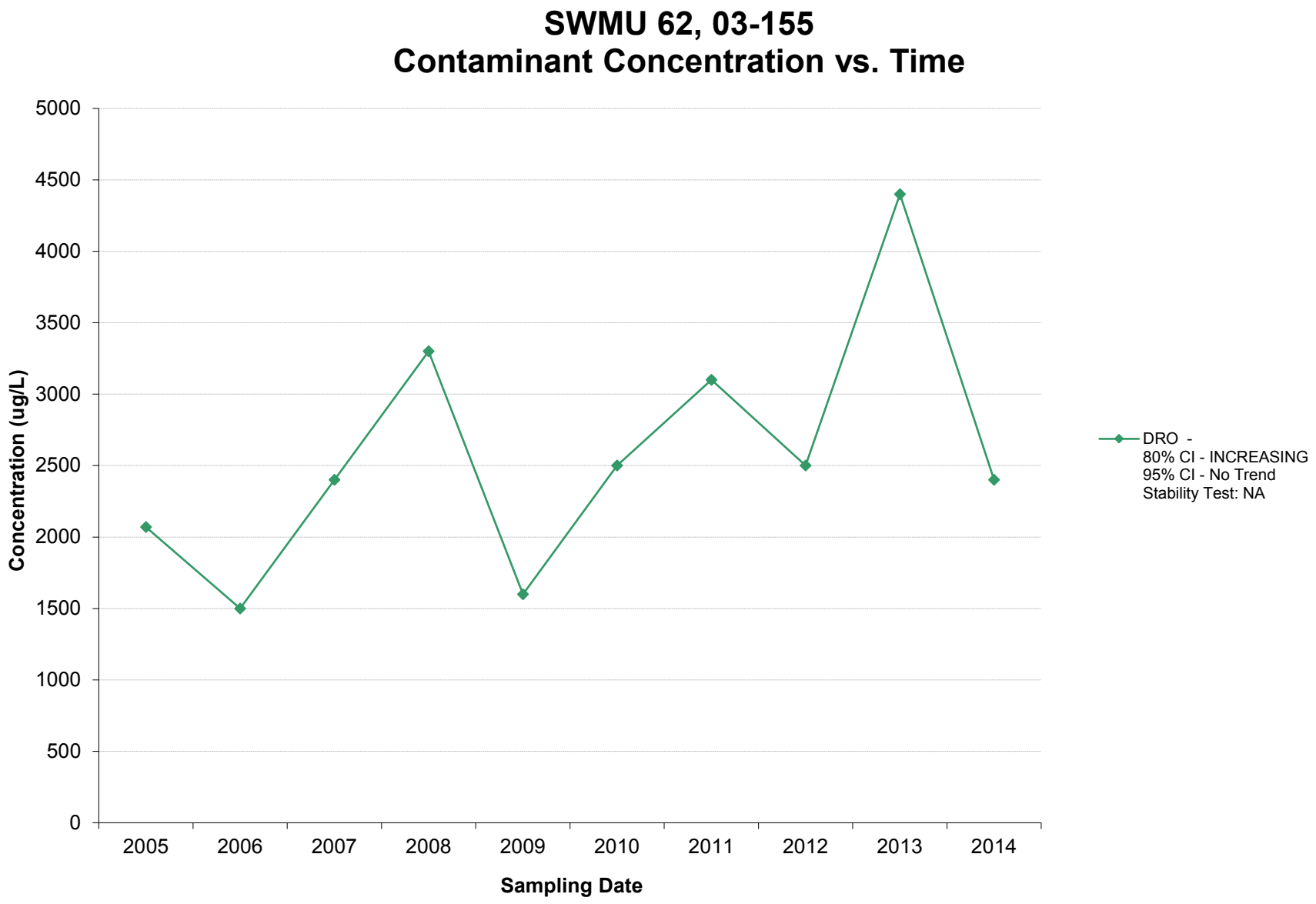
Site Name =	2014 Adak Long Term Monitoring TO 05	Site ID No. =	SWMU 62	Well Number =	03-155

Event Number	Sampling Date (most recent last)	Compound -> DRO Concentration (leave blank if no data - 0 if ND)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	10/01/05	**2,070**					
2	10/01/06	1,500					
3	10/01/07	**2,400**					
4	10/01/08	**3,300**					
5	10/01/09	**1,600**					
6	10/01/10	**2,500**					
7	10/01/11	**3,100**					
8	10/01/12	**2,500**					
9	10/01/13	**4,400**					
10	10/01/14	**2,400**					

Mann Kendall Statistic (S) =	17	0	0	0	0	0
Number of Rounds (n) =	10	0	0	0	0	0
Average =	2577.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =	854.115	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=	0.331	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected		N<4	N<4	N<4	N<4	N<4
Trend at 80% Confidence Level	INCREASING	N<4	N<4	N<4	N<4	N<4
Trend at 95% Confidence Level	No Trend	N<4	N<4	N<4	N<4	N<4
Stability Test, If No Trend Exists at 80% Confidence Level	NA	n<4 n<4	n<4 n<4	n<4 n<4	n<4 n<4	n<4 n<4

Data Entry By =	RB	Date =	12/8/2014	Checked By =	CA

NOTE: Values shown in bold font are above site endpoint criteria.


SWMU 62, 03-155
Contaminant Concentration vs. Time
Concentration (ug/L)
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Sampling Date
DRO -
80% CI - INCREASING
95% CI - No Trend
Stability Test: NA

Mann-Kendall Statistical Test

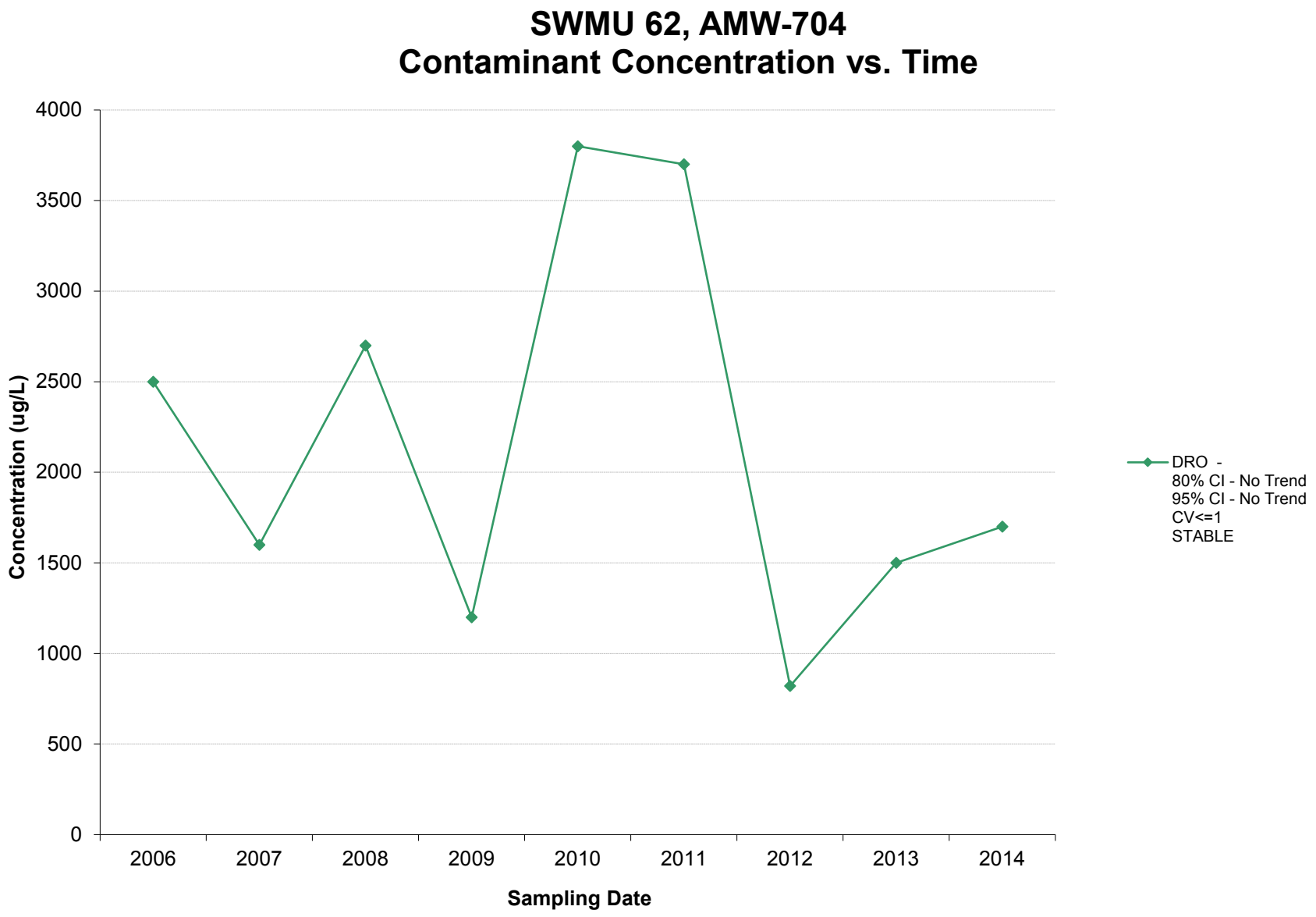
Site Name =	2014 Adak Long Term Monitoring TO 05	Site ID No. =	SWMU 62	Well Number =	AMW-704

	Compound ->	DRO					
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data - 0 if ND)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	10/01/06	**2,500**					
2	10/01/07	**1,600**					
3	10/01/08	**2,700**					
4	10/01/09	1,200					
5	10/01/10	**3,800**					
6	10/01/11	**3,700**					
7	10/01/12	820					
8	10/01/13	1,500					
9	10/01/14	**1,700**					
10							

Mann Kendall Statistic (S) =	-4	0	0	0	0	0
Number of Rounds (n) =	9	0	0	0	0	0
Average =	2168.89	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =	1069.211	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=	0.493	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected		N<4	N<4	N<4	N<4	N<4
Trend at 80% Confidence Level	No Trend	N<4	N<4	N<4	N<4	N<4
Trend at 95% Confidence Level	No Trend	N<4	N<4	N<4	N<4	N<4
Stability Test, If No Trend Exists at 80% Confidence Level	CV<=1	n<4	n<4	n<4	n<4	n<4
	STABLE	n<4	n<4	n<4	n<4	n<4

Data Entry By =	RB	Date =	12/8/2014	Checked By =	CA

NOTE: Values shown in bold font are above site endpoint criteria.


SWMU 62, AMW-704
Contaminant Concentration vs. Time
Concentration (ug/L)
4000
3500
3000
2500
2000
1500
1000
500
0
2006
2007
2008
2009
2010
2011
2012
2013
2014
Sampling Date
DRO -
80% CI - No Trend
95% CI - No Trend
CV<=1
STABLE

Mann-Kendall Statistical Test

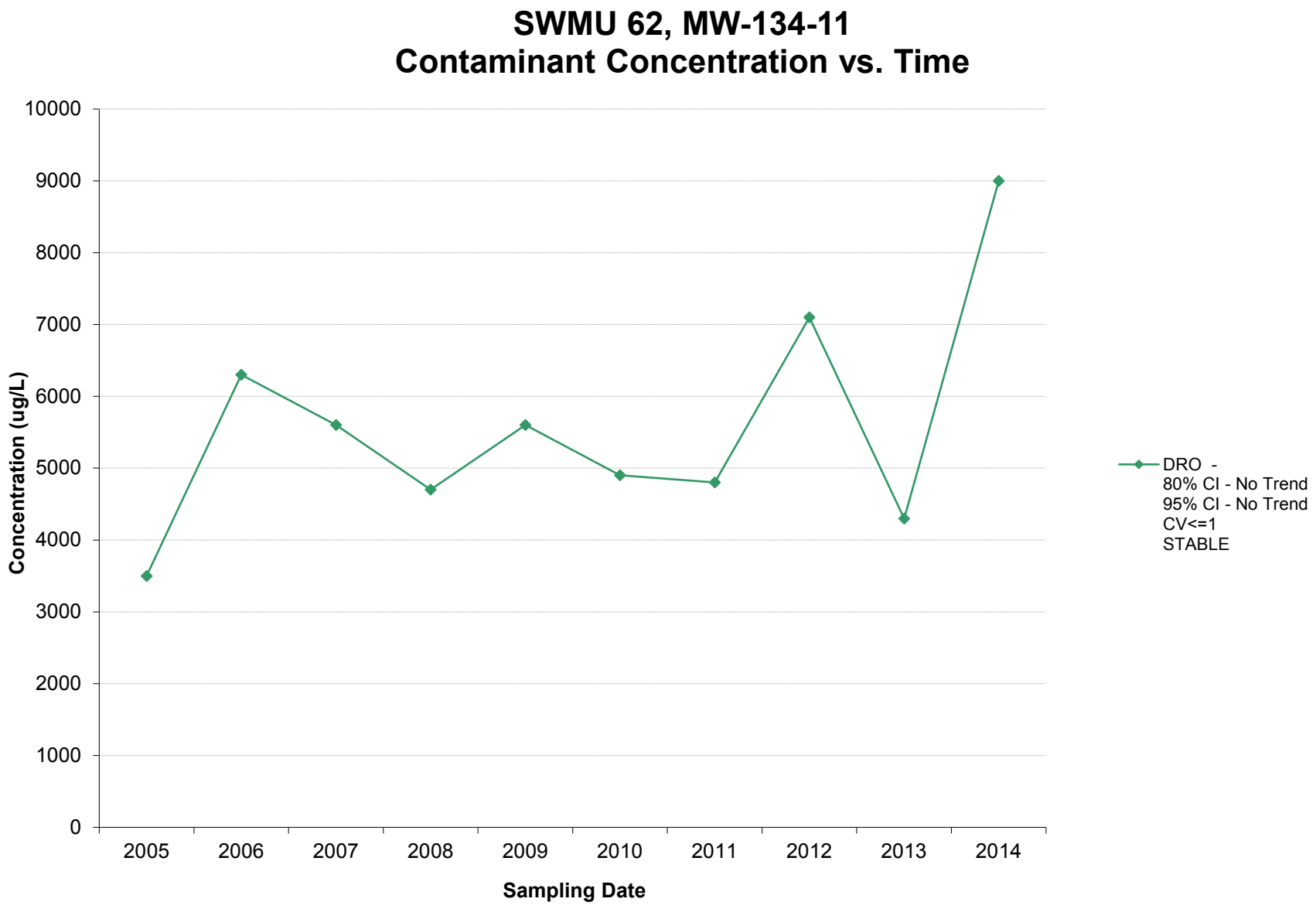
Site Name =	2014 Adak Long Term Monitoring TO 05	Site ID No. =	SWMU 62	Well Number =	MW-134-11

	Compound ->	DRO					
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data - 0 if ND)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	10/01/05	**3,500**					
2	10/01/06	**6,300**					
3	10/01/07	**5,600**					
4	10/01/08	**4,700**					
5	10/01/09	**5,600**					
6	10/01/10	**4,900**					
7	10/01/11	**4,800**					
8	10/01/12	**7,100**					
9	10/01/13	**4,300**					
10	10/01/14	**9,000**					

Mann Kendall Statistic (S) =	8	0	0	0	0	0
Number of Rounds (n) =	10	0	0	0	0	0
Average =	5580.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =	1575.366	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=	0.282	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected		N<4	N<4	N<4	N<4	N<4
Trend at 80% Confidence Level	No Trend	N<4	N<4	N<4	N<4	N<4
Trend at 95% Confidence Level	No Trend	N<4	N<4	N<4	N<4	N<4
Stability Test, If No Trend Exists at 80% Confidence Level	CV<=1 STABLE	n<4 n<4	n<4 n<4	n<4 n<4	n<4 n<4	n<4 n<4

Data Entry By =	RB	Date =	12/8/2014	Checked By =	CA

NOTE: Values shown in bold font are above site endpoint criteria.


SWMU 62, MW-134-11
Contaminant Concentration vs. Time
Concentration (ug/L)
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Sampling Date
DRO -
80% CI - No Trend
95% CI - No Trend
CV<=1
STABLE

Mann-Kendall Statistical Test

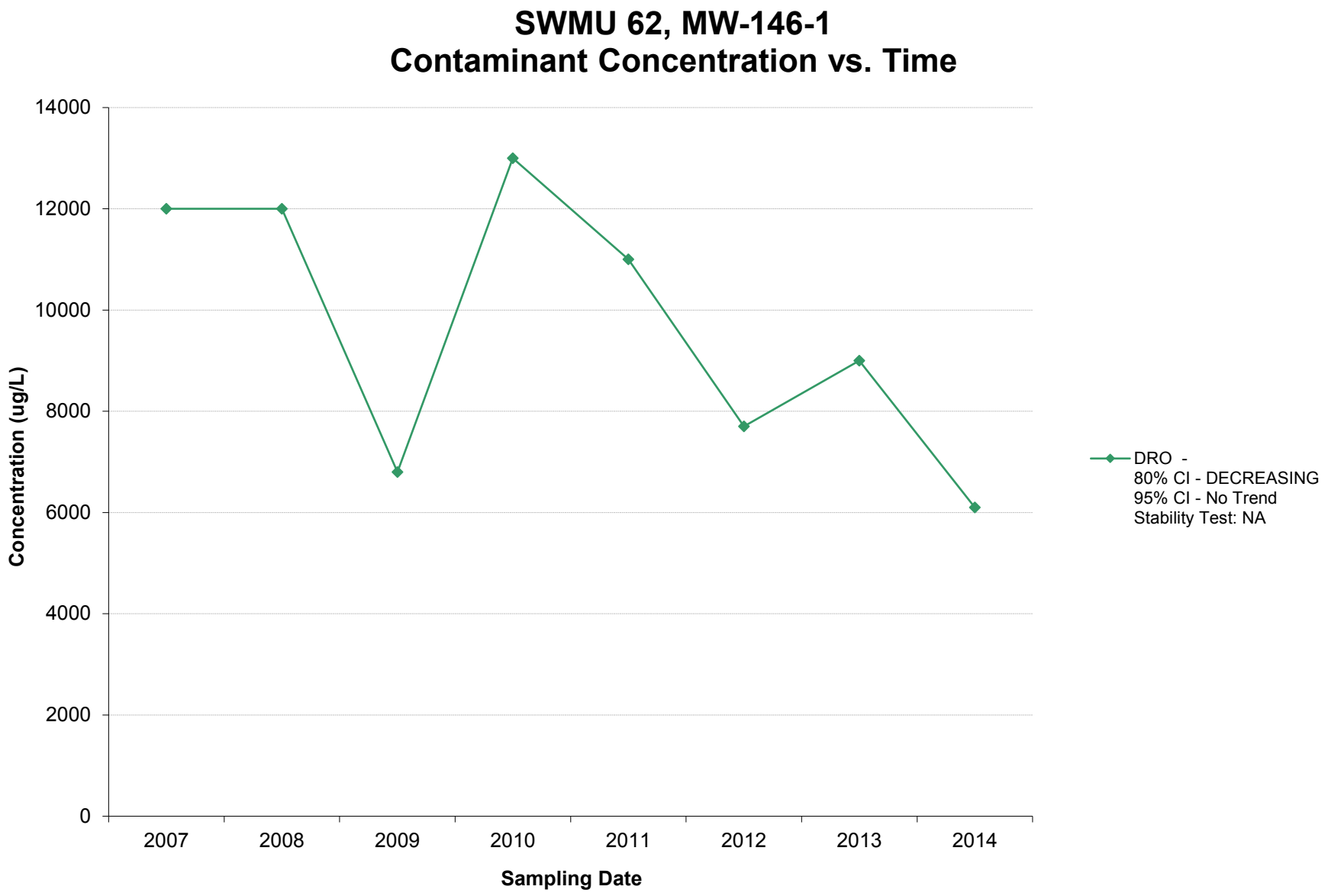
Site Name =	2014 Adak Long Term Monitoring TO 05	Site ID No. =	SWMU 62	Well Number =	MW-146-1

	Compound ->	DRO					
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	10/01/07	**12,000**					
2	10/01/08	**12,000**					
3	10/01/09	**6,800**					
4	10/01/10	**13,000**					
5	10/01/11	**11,000**					
6	10/01/12	**7,700**					
7	10/01/13	**9,000**					
8	10/01/14	**6,100**					
9							
10							

Mann Kendall Statistic (S) =	-13	0	0	0	0	0
Number of Rounds (n) =	8	0	0	0	0	0
Average =	9700.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =	2646.291	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=	0.273	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected		N<4	N<4	N<4	N<4	N<4
Trend at **80% Confidence Level**	**DECREASING**	N<4	N<4	N<4	N<4	N<4
Trend at **95% Confidence Level**	**No Trend**	N<4	N<4	N<4	N<4	N<4
Stability Test, If No Trend Exists at		n<4	n<4	n<4	n<4	n<4
80% Confidence Level	**NA**	n<4	n<4	n<4	n<4	n<4

Data Entry By =	RB	Date =	12/8/2014	Checked By =	CA

NOTE: Values shown in bold font are above site endpoint criteria.


SWMU 62, MW-146-1
Contaminant Concentration vs. Time
Concentration (ug/L)
14000
12000
10000
8000
6000
4000
2000
0
2007
2008
2009
2010
2011
2012
2013
2014
Sampling Date
DRO -
80% CI - DECREASING
95% CI - No Trend
Stability Test: NA

Mann-Kendall Statistical Test

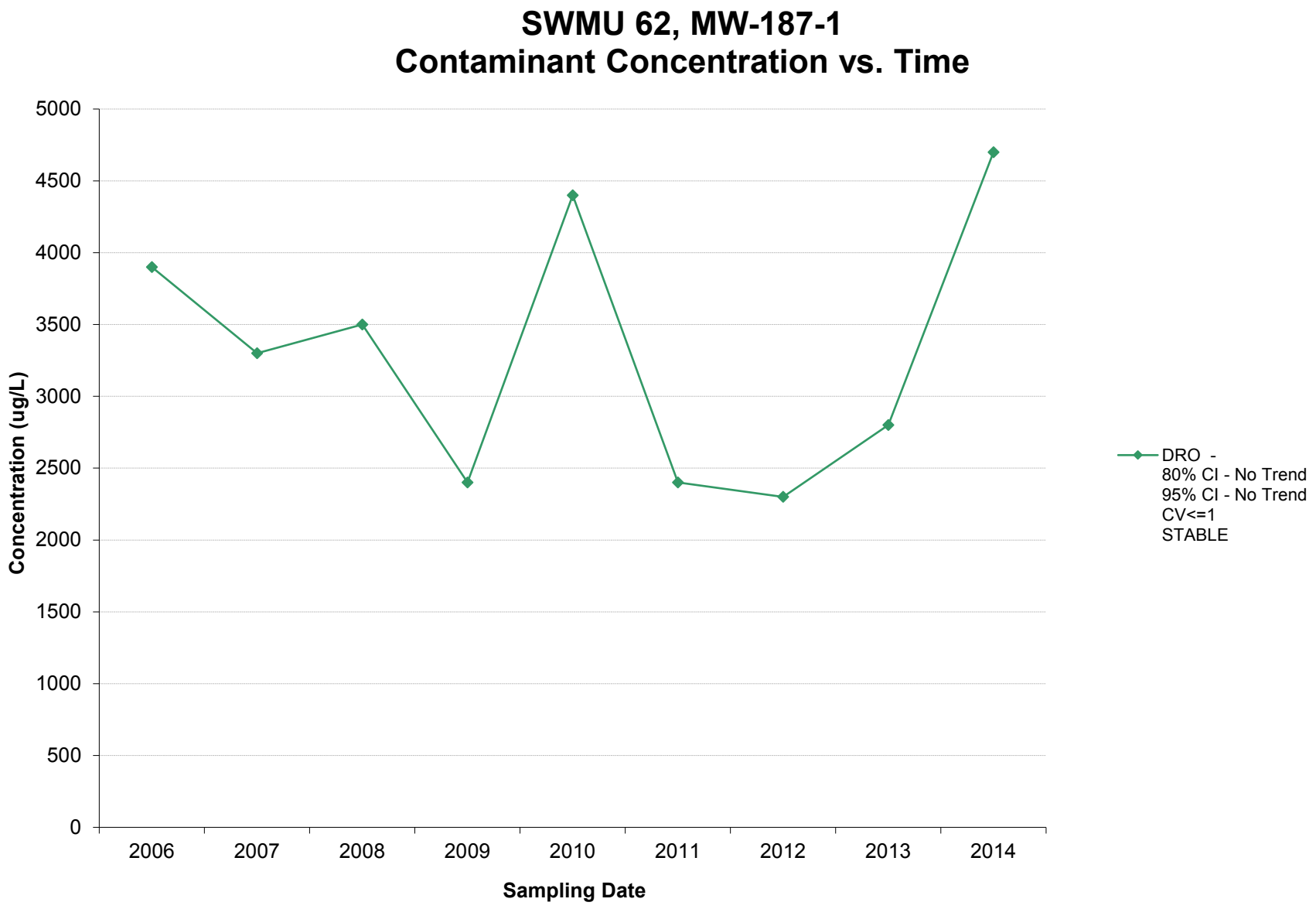
Site Name =	2014 Adak Long Term Monitoring TO 05	Site ID No. =	SWMU 62	Well Number =	MW-187-1

	Compound ->	DRO					
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data - 0 if ND)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	10/01/06	**3,900**					
2	10/01/07	**3,300**					
3	10/01/08	**3,500**					
4	10/01/09	**2,400**					
5	10/01/10	**4,400**					
6	10/01/11	**2,400**					
7	10/01/12	**2,300**					
8	10/01/13	**2,800**					
9	10/01/14	**4,700**					
10							

Mann Kendall Statistic (S) =	-3	0	0	0	0	0
Number of Rounds (n) =	9	0	0	0	0	0
Average =	3300.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =	897.218	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=	0.272	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected		N<4	N<4	N<4	N<4	N<4
Trend at 80% Confidence Level	No Trend	N<4	N<4	N<4	N<4	N<4
Trend at 95% Confidence Level	No Trend	N<4	N<4	N<4	N<4	N<4
Stability Test, If No Trend Exists at 80% Confidence Level	CV<=1	n<4	n<4	n<4	n<4	n<4
	STABLE	n<4	n<4	n<4	n<4	n<4

Data Entry By =	RB	Date =	12/8/2014	Checked By =	CA

NOTE: Values shown in bold font are above site endpoint criteria.


SWMU 62, MW-187-1
Contaminant Concentration vs. Time
Concentration (ug/L)
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
2006
2007
2008
2009
2010
2011
2012
2013
2014
Sampling Date
DRO -
80% CI - No Trend
95% CI - No Trend
CV<=1
STABLE

Mann-Kendall Statistical Test

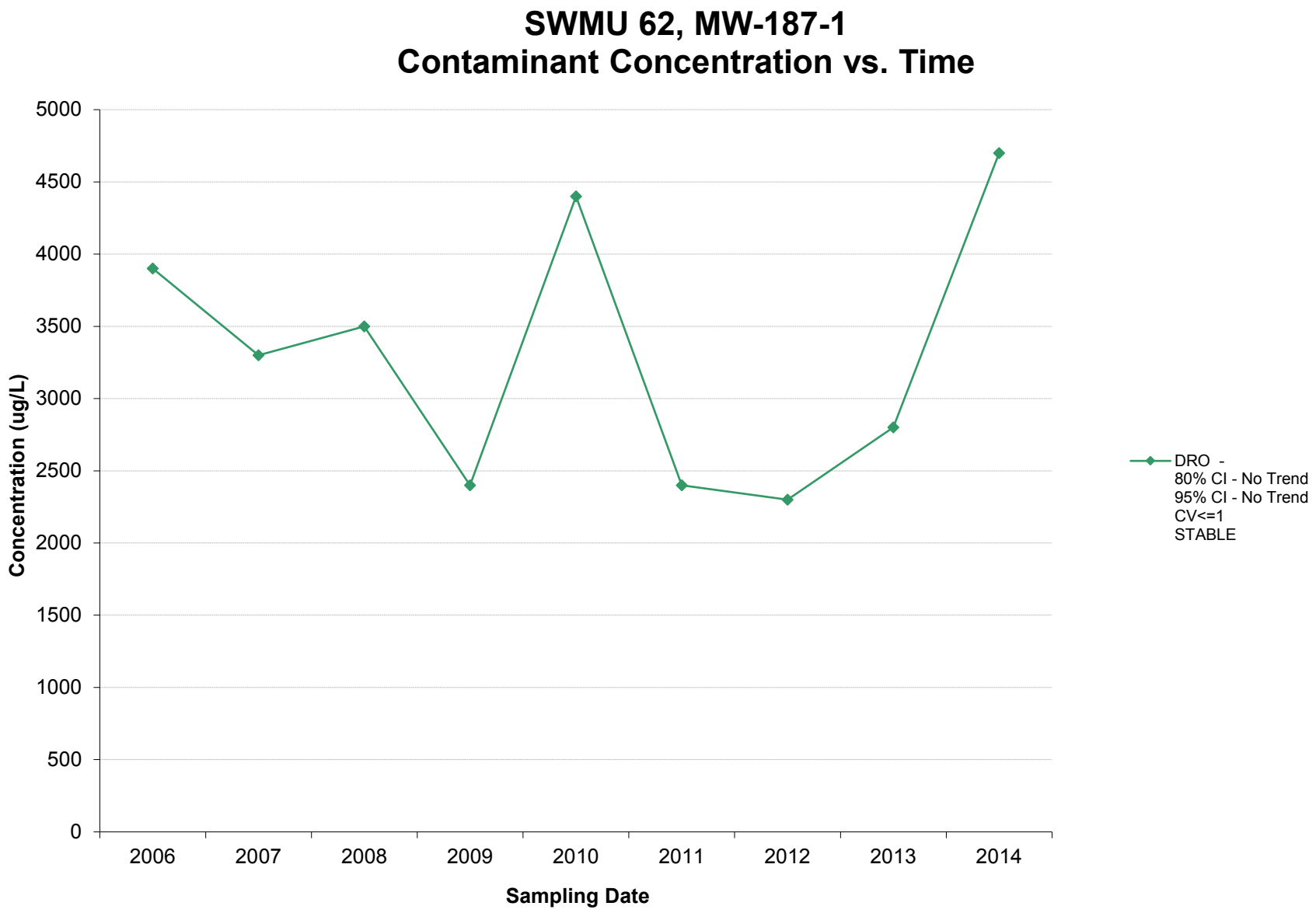
Site Name =	2014 Adak Long Term Monitoring TO 05	Site ID No. =	SWMU 62	Well Number =	MW-187-1

	Compound ->	DRO					
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data - 0 if ND)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	10/01/06	**3,900**					
2	10/01/07	**3,300**					
3	10/01/08	**3,500**					
4	10/01/09	**2,400**					
5	10/01/10	**4,400**					
6	10/01/11	**2,400**					
7	10/01/12	**2,300**					
8	10/01/13	**2,800**					
9	10/01/14	**4,700**					
10							

Mann Kendall Statistic (S) =	-3	0	0	0	0	0
Number of Rounds (n) =	9	0	0	0	0	0
Average =	3300.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =	897.218	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=	0.272	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected		N<4	N<4	N<4	N<4	N<4
Trend at **80% Confidence Level**	**No Trend**	N<4	N<4	N<4	N<4	N<4
Trend at **95% Confidence Level**	**No Trend**	N<4	N<4	N<4	N<4	N<4
Stability Test, If No Trend Exists at 80% Confidence Level	**CV<=1**	n<4	n<4	n<4	n<4	n<4
	STABLE	n<4	n<4	n<4	n<4	n<4

Data Entry By =	RB	Date =	12/8/2014	Checked By =	CA

NOTE: Values shown in bold font are above site endpoint criteria.


SWMU 62, MW-187-1
Contaminant Concentration vs. Time
Concentration (ug/L)
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
2006
2007
2008
2009
2010
2011
2012
2013
2014
Sampling Date
DRO -
80% CI - No Trend
95% CI - No Trend
CV<=1
STABLE

Mann-Kendall Statistical Test

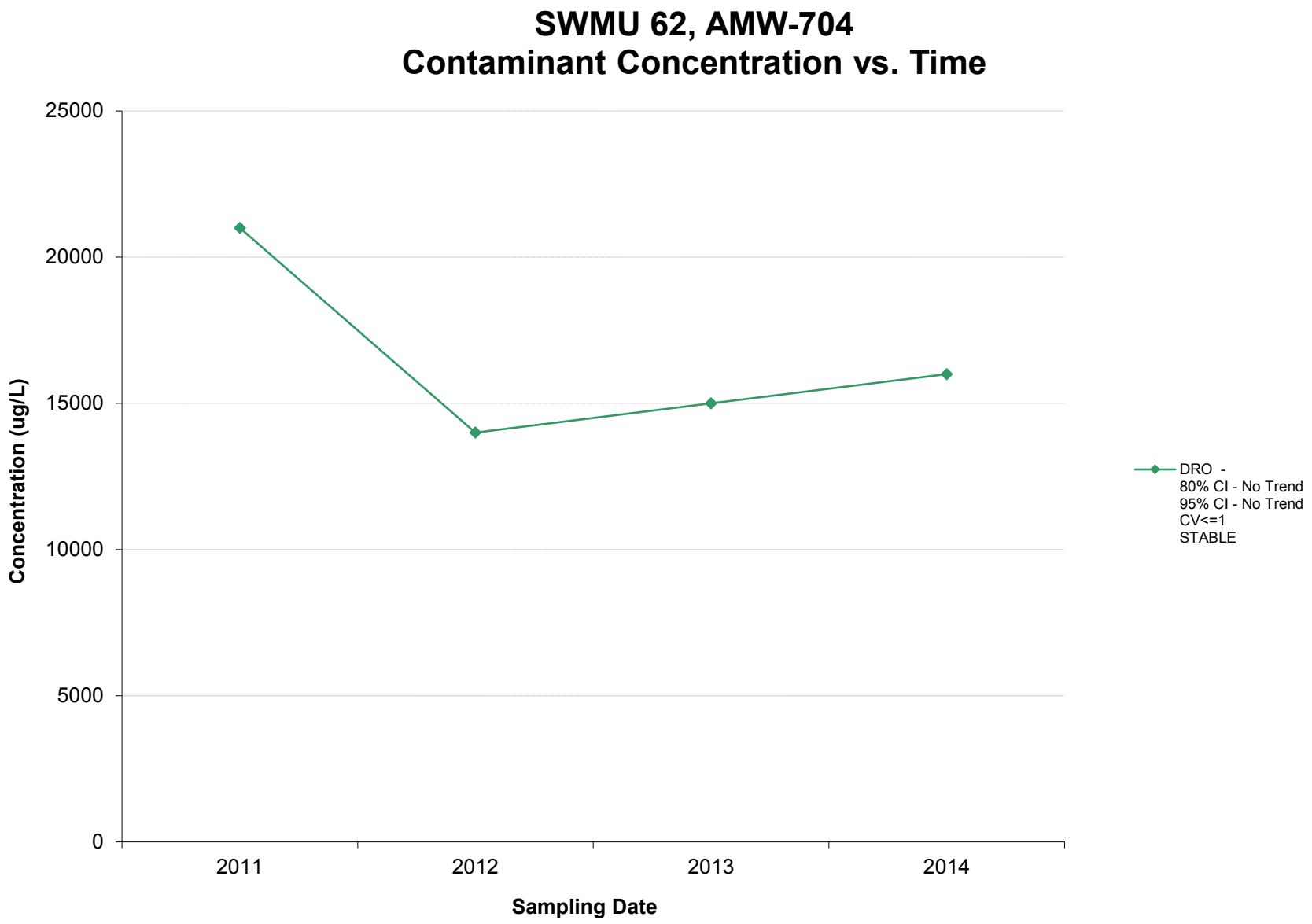
Site Name =	2014 Adak Long Term Monitoring TO 05	Site ID No. =	SWMU 62	Well Number =	MW-303-7

Event Number	Sampling Date (most recent last)	Compound -> DRO Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	10/01/11	**21,000**					
2	10/01/12	**14000**					
3	10/01/13	**15,000**					
4	10/01/14	**16,000**					
5							
6							
7							
8							
9							
10							

Mann Kendall Statistic (S) =	0	0	0	0	0	0
Number of Rounds (n) =	4	0	0	0	0	0
Average =	16500.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =	3109.126	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=	0.188	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected		N<4	N<4	N<4	N<4	N<4
Trend at 80% Confidence Level	No Trend	N<4	N<4	N<4	N<4	N<4
Trend at 95% Confidence Level	No Trend	N<4	N<4	N<4	N<4	N<4
Stability Test, If No Trend Exists at 80% Confidence Level	CV<=1	n<4	n<4	n<4	n<4	n<4
	STABLE	n<4	n<4	n<4	n<4	n<4

Data Entry By =	RB	Date =	12/8/2014	Checked By =	CA

NOTE: Values shown in bold font are above site endpoint criteria.


SWMU 62, AMW-704
Contaminant Concentration vs. Time
25000
20000
15000
10000
5000
0
Concentration (ug/L)
2011
2012
2013
2014
Sampling Date
DRO -
80% CI - No Trend
95% CI - No Trend
CV<=1
STABLE

Mann-Kendall Statistical Test

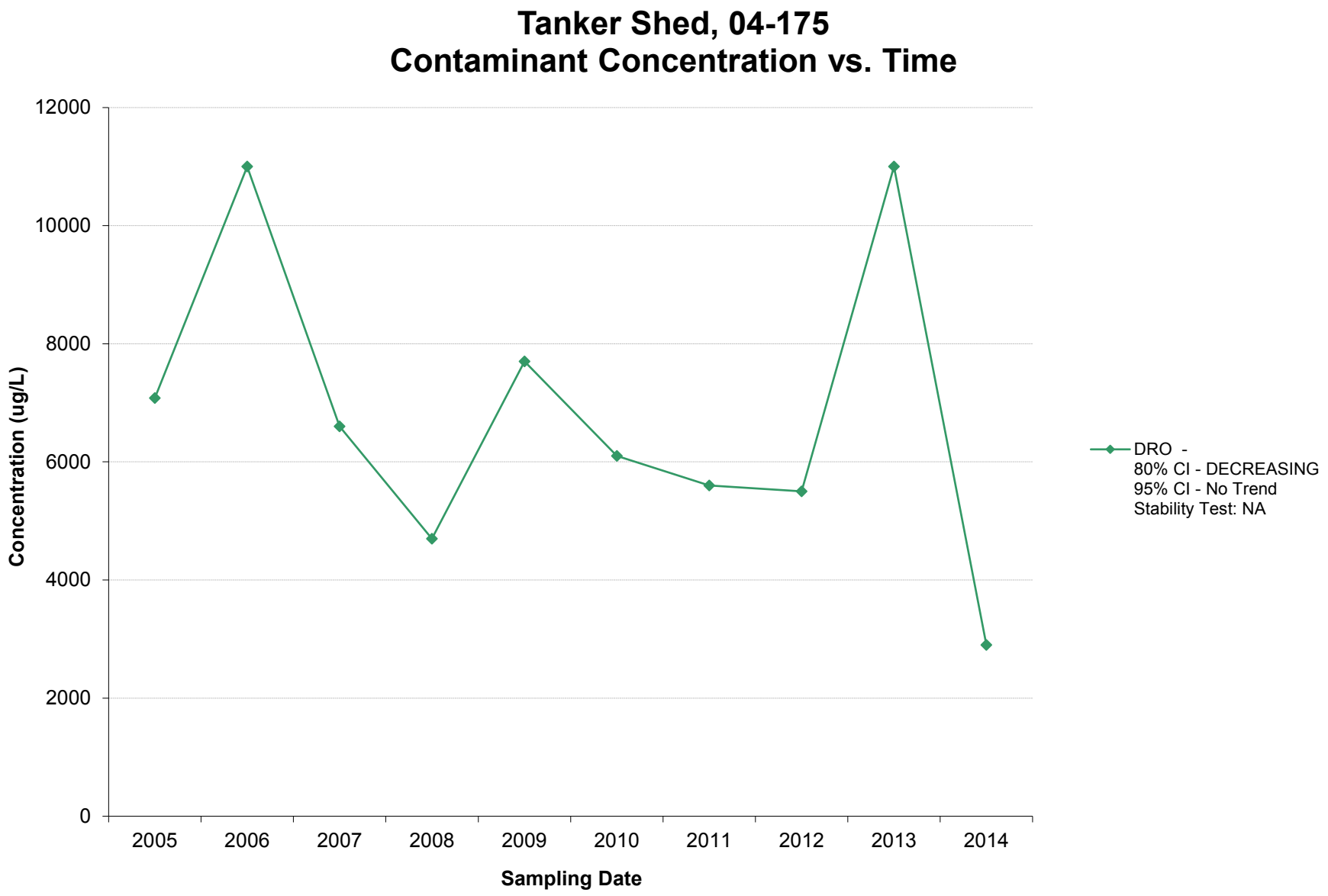
Site Name =	2014 Adak Long Term Monitoring TO 05	Site ID No. =	TANKER SHED	Well Number =	04-175

	Compound ->	DRO					
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	10/01/05	**7,080**					
2	10/01/06	**11,000**					
3	10/01/07	**6,600**					
4	10/01/08	**4,700**					
5	10/01/09	**7,700**					
6	10/01/10	**6,100**					
7	10/01/11	**5,600**					
8	10/01/12	**5,500**					
9	10/01/13	**11,000**					
10	10/01/14	**2,900**					

Mann Kendall Statistic (S) =	-16	0	0	0	0	0
Number of Rounds (n) =	10	0	0	0	0	0
Average =	6818.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =	2570.023	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=	0.377	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected		N<4	N<4	N<4	N<4	N<4
Trend at 80% Confidence Level	DECREASING	N<4	N<4	N<4	N<4	N<4
Trend at 95% Confidence Level	No Trend	N<4	N<4	N<4	N<4	N<4
Stability Test, If No Trend Exists at 80% Confidence Level	NA	n<4 n<4	n<4 n<4	n<4 n<4	n<4 n<4	n<4 n<4

Data Entry By =	RB	Date =	12/8/2014	Checked By =	CA

NOTE: Values shown in bold font are above site endpoint criteria.


Tanker Shed, 04-175
Contaminant Concentration vs. Time
12000
10000
8000
6000
4000
2000
0
Concentration (ug/L)
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Sampling Date
DRO -
80% CI - DECREASING
95% CI - No Trend
Stability Test: NA

Mann-Kendall Statistical Test

Site Name =	2014 Adak Long Term Monitoring TO 05	Site ID No. =	Tanker Shed	Well Number =	04-290

Event Number	Sampling Date (most recent last)	Compound -> DRO Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	10/01/05	**2,890**					
2	10/01/06	**9,000**					
3	10/01/07	1,000					
4	10/01/08	**2,600**					
5	10/01/09	**4,300**					
6	10/01/10	**4,300**					
7	10/01/11	**5,900**					
8	10/01/12	**5,600**					
9	10/01/13	**5,000**					
10	10/01/14	**3,800**					

Mann Kendall Statistic (S) =	8	0	0	0	0	0
Number of Rounds (n) =	10	0	0	0	0	0
Average =	4439.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =	2177.024	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=	0.490	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected		N<4	N<4	N<4	N<4	N<4
Trend at 80% Confidence Level	No Trend	N<4	N<4	N<4	N<4	N<4
Trend at 95% Confidence Level	No Trend	N<4	N<4	N<4	N<4	N<4
Stability Test, If No Trend Exists at 80% Confidence Level	CV<=1	n<4	n<4	n<4	n<4	n<4
	STABLE	n<4	n<4	n<4	n<4	n<4

Data Entry By =	RB	Date =	12/8/2014	Checked By =	CA

NOTE: Values shown in bold font are above site endpoint criteria.

Tanker Shed, 04-290
Contaminant Concentration vs. Time
Concentration (ug/L)
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Sampling Date
DRO -
80% CI - No Trend
95% CI - No Trend
CV<=1
STABLE

Mann-Kendall Statistical Test

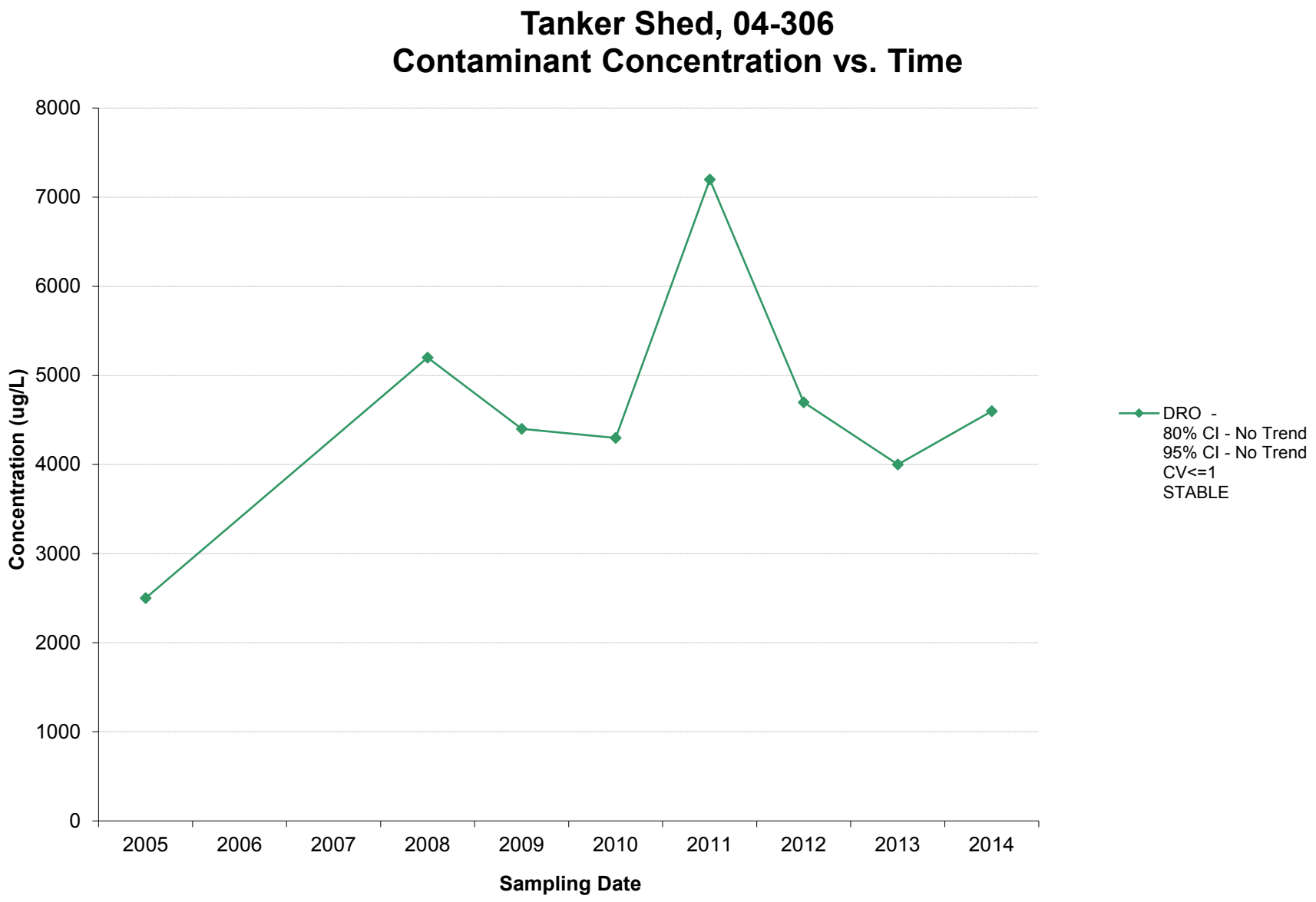
Site Name =	2014 Adak Long Term Monitoring TO 05	Site ID No. =	Tanker Shed	Well Number =	04-306

Event Number	Sampling Date (most recent last)	Compound -> DRO Concentration (leave blank if no data - 0 if ND)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	10/01/05	**2,500**					
2	10/01/08	**5,200**					
3	10/01/09	**4,400**					
4	10/01/10	**4,300**					
5	10/01/11	**7,200**					
6	10/01/12	**4,700**					
7	10/01/13	**4,000**					
8	10/01/14	**4,600**					
9							
10							

Mann Kendall Statistic (S) =	2	0	0	0	0	0
Number of Rounds (n) =	8	0	0	0	0	0
Average =	4612.50	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =	1310.875	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=	0.284	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected		N<4	N<4	N<4	N<4	N<4
Trend at **80% Confidence Level**	**No Trend**	N<4	N<4	N<4	N<4	N<4
Trend at **95% Confidence Level**	**No Trend**	N<4	N<4	N<4	N<4	N<4
Stability Test, If No Trend Exists at 80% Confidence Level	**CV<=1**	n<4	n<4	n<4	n<4	n<4
	STABLE	n<4	n<4	n<4	n<4	n<4

Data Entry By =	RB	Date =	12/8/2014	Checked By =	CA

NOTE: Values shown in bold font are above site endpoint criteria.


Tanker Shed, 04-306
Contaminant Concentration vs. Time
Concentration (ug/L)
8000
7000
6000
5000
4000
3000
2000
1000
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Sampling Date
DRO -
80% CI - No Trend
95% CI - No Trend
CV<=1
STABLE

Concentrations (ppb)

Parameter: Benzene

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Measurements: 41
Total Non-Detect: 1
Percent Non-Detects: 2.43902%
Total Background Measurements: 0
There are 0 background locations

Loc.	Meas.	ND	Date	Conc.	Original

There are 3 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
08-202	14	0 (0%)	10/1/2000	22	22
			10/1/2001	17.8	17.8
			10/1/2002	18	18
			10/1/2003	24	24
			10/1/2004	16	16
			10/1/2005	14.6	14.6
			10/1/2006	13 J	13 J
			10/1/2007	14	14
			10/1/2008	16	16
			10/1/2009	12	12
			10/1/2010	12	12
			10/1/2012	9.6	9.6
			10/1/2013	9.3	9.3
			10/1/2014	9.9	9.9
14-113	12	0 (0%)	10/1/2003	34	34
			10/1/2004	30.8 J	30.8 J
			10/1/2005	22.7 J	22.7 J
			10/1/2006	16	16
			10/1/2007	14	14
			10/1/2008	9.6 D	9.6 D
			10/1/2009	13 D	13 D
			10/1/2010	12	12
			10/1/2011	8.3	8.3
			10/1/2012	6.9 J	6.9 J
			10/1/2013	6.9	6.9
			10/1/2014	4.3	4.3
TFB-MW4B	15	1 (6.66667%)	10/1/2000	ND<10 U	ND<20 U
			10/1/2001	54	54
			10/1/2002	50 J	50 J
			10/1/2003	73 J	73 J
			10/1/2004	69 J	69 J
			10/1/2005	49.5 J	49.5 J
			10/1/2006	31	31
			10/1/2007	39 D	39 D
			10/1/2008	29 D	29 D
			10/1/2009	31 D	31 D
			10/1/2010	30 D	30 D
			10/1/2011	23 D	23 D

			10/1/2012	24 D	24 D
			10/1/2013	20 D	20 D
			10/1/2014	20 D	20 D

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Concentrations (ppb)

Parameter: cis12DCE

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Measurements: 14
Total Non-Detect: 0
Percent Non-Detects: 0%
Total Background Measurements: 0
There are 0 background locations

Loc.	Meas.	ND	Date	Conc.	Original

There is 1 compliance location

Loc.	Meas.	ND	Date	Conc.	Original
05-735	14	0 (0%)	10/1/2001	189	189
			10/1/2002	420	420
			10/1/2003	730	730
			10/1/2004	483 J	483 J
			10/1/2005	542 J	542 J
			10/1/2006	420	420
			10/1/2007	570 D	570 D
			10/1/2008	340 JD	340 JD
			10/1/2009	340 D	340 D
			10/1/2010	400 D	400 D
			10/1/2011	280 DJ	280 DJ
			10/1/2012	240 D	240 D
			10/1/2013	180 D	180 D
			10/1/2014	190 D	190 D

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Concentrations (ppb)

Parameter: DRO

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Measurements: 63
Total Non-Detect: 0
Percent Non-Detects: 0%
Total Background Measurements: 0
There are 0 background locations

Loc.	Meas.	ND	Date	Conc.	Original

There are 6 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
03-420	12	0 (0%)	10/1/2001	12300	12300
			10/1/2002	4900	4900
			10/1/2003	4900	4900
			10/1/2004	5454	5454
			10/1/2005	5650 J	5650 J
			10/1/2006	3800	3800
			10/1/2007	2400 Y	2400 Y
			10/1/2008	3300 Y	3300 Y
			10/1/2009	2200 Y	2200 Y
			10/1/2011	4300 Y	4300 Y
			10/1/2013	3300 Y	3300 Y
			10/1/2014	3400 Y	3400 Y
03-421	5	0 (0%)	10/1/2009	15000 Y	15000 Y
			10/1/2010	3800	3800
			10/1/2011	19000 Y	19000 Y
			10/1/2013	3000 Y	3000 Y
			10/1/2014	2400 Y	2400 Y
MRP-MW8	14	0 (0%)	10/1/2001	2790	2790
			10/1/2002	2700	2700
			10/1/2003	3600	3600
			10/1/2004	3890	3890
			10/1/2005	3700	3700
			10/1/2006	4300	4300
			10/1/2007	4700 Y	4700 Y
			10/1/2008	3400 Y	3400 Y
			10/1/2009	3000 Y	3000 Y
			10/1/2010	2700 Y	2700 Y
			10/1/2011	3700 Y	3700 Y
			10/1/2012	3900 Y	3900 Y
			10/1/2013	3600 Y	3600 Y
			10/1/2014	3400 Y	3400 Y
02-230	14	0 (0%)	10/1/2001	4230	4230
			10/1/2002	3500	3500
			10/1/2003	3900	3900
			10/1/2004	5760	5760
			10/1/2005	4060 J	4060 J
			10/1/2006	5500	5500

			10/1/2007	4800 Y	4800 Y
			10/1/2008	5000 Y	5000 Y
			10/1/2009	2400 Y	2400 Y
			10/1/2010	4000 Y	4000 Y
			10/1/2011	4200 Y	4200 Y
			10/1/2012	3200 Y	3200 Y
			10/1/2013	3500 Y	3500 Y
			10/1/2014	4300 Y	4300 Y
MW-146-1	8	0 (0%)	10/1/2007	12000 Y	12000 Y
			10/1/2008	12000 Y	12000 Y
			10/1/2009	6800 Y	6800 Y
			10/1/2010	13000 Y	13000 Y
			10/1/2011	11000 Y	11000 Y
			10/1/2012	7700 Y	7700 Y
			10/1/2013	9000 Y	9000 Y
			10/1/2014	6100 Y	6100 Y
04-175	10	0 (0%)	10/1/2005	7080 J	7080 J
			10/1/2006	11000	11000
			10/1/2007	6600 Y	6600 Y
			10/1/2008	4700 Y	4700 Y
			10/1/2009	7700 Y	7700 Y
			10/1/2010	6100 Y	6100 Y
			10/1/2011	5600 Y	5600 Y
			10/1/2012	5500 Y	5500 Y
			10/1/2013	11000 Y	11000 Y
			10/1/2014	2900 Y	2900 Y

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Concentrations (ppb)

Parameter: GRO

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Measurements: 66
Total Non-Detect: 0
Percent Non-Detects: 0%
Total Background Measurements: 0
There are 0 background locations

Loc.	Meas.	ND	Date	Conc.	Original

There are 6 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
03-502	9	0 (0%)	10/1/2006	8200	8200
			10/1/2007	6700 DY	6700 DY
			10/1/2008	5300 Y	5300 Y
			10/1/2009	3600 Y	3600 Y
			10/1/2010	1500 Y	1500 Y
			10/1/2011	3200 Y	3200 Y
			10/1/2012	3400 Y	3400 Y
			10/1/2013	3300 Y	3300 Y
			10/1/2014	2500 Y	2500 Y
04-100	12	0 (0%)	10/1/2003	1600	1600
			10/1/2004	5300 J	5300 J
			10/1/2005	4420 J	4420 J
			10/1/2006	5200 J	5200 J
			10/1/2007	4400 Y	4400 Y
			10/1/2008	4000 Z	4000 Z
			10/1/2009	4400 Z	4400 Z
			10/1/2010	3100 Y	3100 Y
			10/1/2011	2900 Y	2900 Y
			10/1/2012	3800 Y	3800 Y
			10/1/2013	2900 Y	2900 Y
			10/1/2014	3800 DY	3800 DY
04-210	10	0 (0%)	10/1/2005	4580 J	4580 J
			10/1/2006	6400	6400
			10/1/2007	8300 DY	8300 DY
			10/1/2008	6100 Y	6100 Y
			10/1/2009	6800 Y	6800 Y
			10/1/2010	4800 Y	4800 Y
			10/1/2011	4700 Y	4700 Y
			10/1/2012	6300 Y	6300 Y
			10/1/2013	5500 Y	5500 Y
			10/1/2014	3900 Y	3900 Y
04-213	9	0 (0%)	10/1/2006	3800 J	3800 J
			10/1/2007	5900 Y	5900 Y
			10/1/2008	6900 Z	6900 Z
			10/1/2009	4400 Z	4400 Z
			10/1/2010	3300 Y	3300 Y
			10/1/2011	4000 Y	4000 Y

			10/1/2012	3900 Y	3900 Y
			10/1/2013	3200 Y	3200 Y
			10/1/2014	2800 Y	2800 Y
MW14-5	14	0 (0%)	10/1/2001	15900	15900
			10/1/2002	12000	12000
			10/1/2003	13000	13000
			10/1/2004	16100 J	16100 J
			10/1/2005	12600 J	12600 J
			10/1/2006	9900	9900
			10/1/2007	14000 DY	14000 DY
			10/1/2008	11000 DY	11000 DY
			10/1/2009	15000 DY	15000 DY
			10/1/2010	9000 DY	9000 DY
			10/1/2011	11000 DY	11000 DY
			10/1/2012	7000 Y	7000 Y
			10/1/2013	4700 Y	4700 Y
			10/1/2014	5400 YJ	5400 YJ
14-113	12	0 (0%)	10/1/2003	2000	2000
			10/1/2004	6880 J	6880 J
			10/1/2005	3900 J	3900 J
			10/1/2006	6300	6300
			10/1/2007	3900 Z	3900 Z
			10/1/2008	2700 Z	2700 Z
			10/1/2009	5100 Z	5100 Z
			10/1/2010	3800 Y	3800 Y
			10/1/2011	3400 Y	3400 Y
			10/1/2012	2000 Y	2000 Y
			10/1/2013	2800 Z	2800 Z
			10/1/2014	1900 Y	1900 Y

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Concentrations (ppb)

Parameter: PCE

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Measurements: 13
Total Non-Detect: 0
Percent Non-Detects: 0%
Total Background Measurements: 0
There are 0 background locations

Loc.	Meas.	ND	Date	Conc.	Original

There is 1 compliance location

Loc.	Meas.	ND	Date	Conc.	Original
55-145	13	0 (0%)	10/1/2001	180	180
			10/1/2002	130	130
			10/1/2003	170	170
			10/1/2004	112	112
			10/1/2005	90.3	90.3
			10/1/2006	110	110
			10/1/2007	71	71
			10/1/2008	61	61
			10/1/2009	57	57
			10/1/2010	49	49
			10/1/2011	39	39
			10/1/2013	38	38
			10/1/2014	57 J	57 J

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Concentrations (ppb)

Parameter: VinylChloride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Measurements: 14
Total Non-Detect: 0
Percent Non-Detects: 0%
Total Background Measurements: 0
There are 0 background locations

Loc.	Meas.	ND	Date	Conc.	Original

There is 1 compliance location

Loc.	Meas.	ND	Date	Conc.	Original
05-735	14	0 (0%)	10/1/2001	4.18	4.18
			10/1/2002	5.6 J	5.6 J
			10/1/2003	7	7
			10/1/2004	6.7 J	6.7 J
			10/1/2005	7.2 J	7.2 J
			10/1/2006	7.4	7.4
			10/1/2007	3.4 D	3.4 D
			10/1/2008	6.1	6.1
			10/1/2009	5.4	5.4
			10/1/2010	4.3	4.3
			10/1/2011	2.8	2.8
			10/1/2012	2.7	2.7
			10/1/2013	3.2	3.2
			10/1/2014	3.3	3.3

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Sen's Slope Analysis

Parameter: GRO

Location: 03-502

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

80% Confidence Level

Xj	Xk	(Xj - Xk)/(j-k)	Q
6700 DY (10/1/2007)	8200 (10/1/2006)	(6700 - 8200)/(2 - 1)	-1500
5300 Y (10/1/2008)	8200 (10/1/2006)	(5300 - 8200)/(3 - 1)	-1450
3600 Y (10/1/2009)	8200 (10/1/2006)	(3600 - 8200)/(4 - 1)	-1533.33
1500 Y (10/1/2010)	8200 (10/1/2006)	(1500 - 8200)/(5 - 1)	-1675
3200 Y (10/1/2011)	8200 (10/1/2006)	(3200 - 8200)/(6 - 1)	-1000
3400 Y (10/1/2012)	8200 (10/1/2006)	(3400 - 8200)/(7 - 1)	-800
3300 Y (10/1/2013)	8200 (10/1/2006)	(3300 - 8200)/(8 - 1)	-700
2500 Y (10/1/2014)	8200 (10/1/2006)	(2500 - 8200)/(9 - 1)	-712.5
5300 Y (10/1/2008)	6700 DY (10/1/2007)	(5300 - 6700)/(3 - 2)	-1400
3600 Y (10/1/2009)	6700 DY (10/1/2007)	(3600 - 6700)/(4 - 2)	-1550
1500 Y (10/1/2010)	6700 DY (10/1/2007)	(1500 - 6700)/(5 - 2)	-1733.33
3200 Y (10/1/2011)	6700 DY (10/1/2007)	(3200 - 6700)/(6 - 2)	-875
3400 Y (10/1/2012)	6700 DY (10/1/2007)	(3400 - 6700)/(7 - 2)	-660
3300 Y (10/1/2013)	6700 DY (10/1/2007)	(3300 - 6700)/(8 - 2)	-566.667
2500 Y (10/1/2014)	6700 DY (10/1/2007)	(2500 - 6700)/(9 - 2)	-600
3600 Y (10/1/2009)	5300 Y (10/1/2008)	(3600 - 5300)/(4 - 3)	-1700
1500 Y (10/1/2010)	5300 Y (10/1/2008)	(1500 - 5300)/(5 - 3)	-1900
3200 Y (10/1/2011)	5300 Y (10/1/2008)	(3200 - 5300)/(6 - 3)	-700
3400 Y (10/1/2012)	5300 Y (10/1/2008)	(3400 - 5300)/(7 - 3)	-475
3300 Y (10/1/2013)	5300 Y (10/1/2008)	(3300 - 5300)/(8 - 3)	-400
2500 Y (10/1/2014)	5300 Y (10/1/2008)	(2500 - 5300)/(9 - 3)	-466.667
1500 Y (10/1/2010)	3600 Y (10/1/2009)	(1500 - 3600)/(5 - 4)	-2100
3200 Y (10/1/2011)	3600 Y (10/1/2009)	(3200 - 3600)/(6 - 4)	-200
3400 Y (10/1/2012)	3600 Y (10/1/2009)	(3400 - 3600)/(7 - 4)	-66.6667
3300 Y (10/1/2013)	3600 Y (10/1/2009)	(3300 - 3600)/(8 - 4)	-75
2500 Y (10/1/2014)	3600 Y (10/1/2009)	(2500 - 3600)/(9 - 4)	-220
3200 Y (10/1/2011)	1500 Y (10/1/2010)	(3200 - 1500)/(6 - 5)	1700
3400 Y (10/1/2012)	1500 Y (10/1/2010)	(3400 - 1500)/(7 - 5)	950
3300 Y (10/1/2013)	1500 Y (10/1/2010)	(3300 - 1500)/(8 - 5)	600
2500 Y (10/1/2014)	1500 Y (10/1/2010)	(2500 - 1500)/(9 - 5)	250
3400 Y (10/1/2012)	3200 Y (10/1/2011)	(3400 - 3200)/(7 - 6)	200
3300 Y (10/1/2013)	3200 Y (10/1/2011)	(3300 - 3200)/(8 - 6)	50
2500 Y (10/1/2014)	3200 Y (10/1/2011)	(2500 - 3200)/(9 - 6)	-233.333
3300 Y (10/1/2013)	3400 Y (10/1/2012)	(3300 - 3400)/(8 - 7)	-100
2500 Y (10/1/2014)	3400 Y (10/1/2012)	(2500 - 3400)/(9 - 7)	-450
2500 Y (10/1/2014)	3300 Y (10/1/2013)	(2500 - 3300)/(9 - 8)	-800

Number of Q values = 36

Ordered Q Values

n	Q
1	-2100
2	-1900
3	-1733.33
4	-1700
5	-1675
6	-1550
7	-1533.33
8	-1500
9	-1450
10	-1400
11	-1000
12	-875
13	-800
14	-800
15	-712.5
16	-700
17	-700
18	-660
19	-600
20	-566.667
21	-475
22	-466.667
23	-450
24	-400
25	-233.333
26	-220
27	-200
28	-100
29	-75
30	-66.6667
31	50
32	200
33	250
34	600
35	950
36	1700

Sen's Estimator (Median Q) is -630

Time Period	Observations
10/1/2006	1
10/1/2007	1
10/1/2008	1
10/1/2009	1
10/1/2010	1
10/1/2011	1
10/1/2012	1
10/1/2013	1
10/1/2014	1

There are 0 time periods with multiple data

A = 0
B = 0
C = 0
D = 0
E = 0

F = 0
a = 1656
b = 4536
c = 144
Group Variance = 92
For 80% confidence interval (two-tailed), Z at (1-0.8)/2 = 1.28155
C = 12.2922
M1 = (36 - 12.2922)/2.0 = 11.8539
M2 = (36 + 12.2922)/2.0 + 1 = 25.1461
Lower limit is -875 = Q(12)
Upper limit is -233.333 = Q(25)
-233.333 < 0 indicating a downward trend in data.

Sen's Slope Analysis

Parameter: GRO

Location: 04-100

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

80% Confidence Level

Xj	Xk	(Xj - Xk)/(j-k)	Q
5300 J (10/1/2004)	1600 (10/1/2003)	(5300 - 1600)/(2 - 1)	3700
4420 J (10/1/2005)	1600 (10/1/2003)	(4420 - 1600)/(3 - 1)	1410
5200 J (10/1/2006)	1600 (10/1/2003)	(5200 - 1600)/(4 - 1)	1200
4400 Y (10/1/2007)	1600 (10/1/2003)	(4400 - 1600)/(5 - 1)	700
4000 Z (10/1/2008)	1600 (10/1/2003)	(4000 - 1600)/(6 - 1)	480
4400 Z (10/1/2009)	1600 (10/1/2003)	(4400 - 1600)/(7 - 1)	466.667
3100 Y (10/1/2010)	1600 (10/1/2003)	(3100 - 1600)/(8 - 1)	214.286
2900 Y (10/1/2011)	1600 (10/1/2003)	(2900 - 1600)/(9 - 1)	162.5
3800 Y (10/1/2012)	1600 (10/1/2003)	(3800 - 1600)/(10 - 1)	244.444
2900 Y (10/1/2013)	1600 (10/1/2003)	(2900 - 1600)/(11 - 1)	130
3800 DY (10/1/2014)	1600 (10/1/2003)	(3800 - 1600)/(12 - 1)	200
4420 J (10/1/2005)	5300 J (10/1/2004)	(4420 - 5300)/(3 - 2)	-880
5200 J (10/1/2006)	5300 J (10/1/2004)	(5200 - 5300)/(4 - 2)	-50
4400 Y (10/1/2007)	5300 J (10/1/2004)	(4400 - 5300)/(5 - 2)	-300
4000 Z (10/1/2008)	5300 J (10/1/2004)	(4000 - 5300)/(6 - 2)	-325
4400 Z (10/1/2009)	5300 J (10/1/2004)	(4400 - 5300)/(7 - 2)	-180
3100 Y (10/1/2010)	5300 J (10/1/2004)	(3100 - 5300)/(8 - 2)	-366.667
2900 Y (10/1/2011)	5300 J (10/1/2004)	(2900 - 5300)/(9 - 2)	-342.857
3800 Y (10/1/2012)	5300 J (10/1/2004)	(3800 - 5300)/(10 - 2)	-187.5
2900 Y (10/1/2013)	5300 J (10/1/2004)	(2900 - 5300)/(11 - 2)	-266.667
3800 DY (10/1/2014)	5300 J (10/1/2004)	(3800 - 5300)/(12 - 2)	-150
5200 J (10/1/2006)	4420 J (10/1/2005)	(5200 - 4420)/(4 - 3)	780
4400 Y (10/1/2007)	4420 J (10/1/2005)	(4400 - 4420)/(5 - 3)	-10
4000 Z (10/1/2008)	4420 J (10/1/2005)	(4000 - 4420)/(6 - 3)	-140
4400 Z (10/1/2009)	4420 J (10/1/2005)	(4400 - 4420)/(7 - 3)	-5
3100 Y (10/1/2010)	4420 J (10/1/2005)	(3100 - 4420)/(8 - 3)	-264
2900 Y (10/1/2011)	4420 J (10/1/2005)	(2900 - 4420)/(9 - 3)	-253.333
3800 Y (10/1/2012)	4420 J (10/1/2005)	(3800 - 4420)/(10 - 3)	-88.5714
2900 Y (10/1/2013)	4420 J (10/1/2005)	(2900 - 4420)/(11 - 3)	-190
3800 DY (10/1/2014)	4420 J (10/1/2005)	(3800 - 4420)/(12 - 3)	-68.8889
4400 Y (10/1/2007)	5200 J (10/1/2006)	(4400 - 5200)/(5 - 4)	-800
4000 Z (10/1/2008)	5200 J (10/1/2006)	(4000 - 5200)/(6 - 4)	-600
4400 Z (10/1/2009)	5200 J (10/1/2006)	(4400 - 5200)/(7 - 4)	-266.667
3100 Y (10/1/2010)	5200 J (10/1/2006)	(3100 - 5200)/(8 - 4)	-525
2900 Y (10/1/2011)	5200 J (10/1/2006)	(2900 - 5200)/(9 - 4)	-460
3800 Y (10/1/2012)	5200 J (10/1/2006)	(3800 - 5200)/(10 - 4)	-233.333
2900 Y (10/1/2013)	5200 J (10/1/2006)	(2900 - 5200)/(11 - 4)	-328.571
3800 DY (10/1/2014)	5200 J (10/1/2006)	(3800 - 5200)/(12 - 4)	-175
4000 Z (10/1/2008)	4400 Y (10/1/2007)	(4000 - 4400)/(6 - 5)	-400
4400 Z (10/1/2009)	4400 Y (10/1/2007)	(4400 - 4400)/(7 - 5)	0
3100 Y (10/1/2010)	4400 Y (10/1/2007)	(3100 - 4400)/(8 - 5)	-433.333
2900 Y (10/1/2011)	4400 Y (10/1/2007)	(2900 - 4400)/(9 - 5)	-375
3800 Y (10/1/2012)	4400 Y (10/1/2007)	(3800 - 4400)/(10 - 5)	-120

2900 Y (10/1/2013)	4400 Y (10/1/2007)	(2900 - 4400)/(11 - 5)	-250
3800 DY (10/1/2014)	4400 Y (10/1/2007)	(3800 - 4400)/(12 - 5)	-85.7143
4400 Z (10/1/2009)	4000 Z (10/1/2008)	(4400 - 4000)/(7 - 6)	400
3100 Y (10/1/2010)	4000 Z (10/1/2008)	(3100 - 4000)/(8 - 6)	-450
2900 Y (10/1/2011)	4000 Z (10/1/2008)	(2900 - 4000)/(9 - 6)	-366.667
3800 Y (10/1/2012)	4000 Z (10/1/2008)	(3800 - 4000)/(10 - 6)	-50
2900 Y (10/1/2013)	4000 Z (10/1/2008)	(2900 - 4000)/(11 - 6)	-220
3800 DY (10/1/2014)	4000 Z (10/1/2008)	(3800 - 4000)/(12 - 6)	-33.3333
3100 Y (10/1/2010)	4400 Z (10/1/2009)	(3100 - 4400)/(8 - 7)	-1300
2900 Y (10/1/2011)	4400 Z (10/1/2009)	(2900 - 4400)/(9 - 7)	-750
3800 Y (10/1/2012)	4400 Z (10/1/2009)	(3800 - 4400)/(10 - 7)	-200
2900 Y (10/1/2013)	4400 Z (10/1/2009)	(2900 - 4400)/(11 - 7)	-375
3800 DY (10/1/2014)	4400 Z (10/1/2009)	(3800 - 4400)/(12 - 7)	-120
2900 Y (10/1/2011)	3100 Y (10/1/2010)	(2900 - 3100)/(9 - 8)	-200
3800 Y (10/1/2012)	3100 Y (10/1/2010)	(3800 - 3100)/(10 - 8)	350
2900 Y (10/1/2013)	3100 Y (10/1/2010)	(2900 - 3100)/(11 - 8)	-66.6667
3800 DY (10/1/2014)	3100 Y (10/1/2010)	(3800 - 3100)/(12 - 8)	175
3800 Y (10/1/2012)	2900 Y (10/1/2011)	(3800 - 2900)/(10 - 9)	900
2900 Y (10/1/2013)	2900 Y (10/1/2011)	(2900 - 2900)/(11 - 9)	0
3800 DY (10/1/2014)	2900 Y (10/1/2011)	(3800 - 2900)/(12 - 9)	300
2900 Y (10/1/2013)	3800 Y (10/1/2012)	(2900 - 3800)/(11 - 10)	-900
3800 DY (10/1/2014)	3800 Y (10/1/2012)	(3800 - 3800)/(12 - 10)	0
3800 DY (10/1/2014)	2900 Y (10/1/2013)	(3800 - 2900)/(12 - 11)	900

Number of Q values = 66

Ordered Q Values

n	Q
1	-1300
2	-900
3	-880
4	-800
5	-750
6	-600
7	-525
8	-460
9	-450
10	-433.333
11	-400
12	-375
13	-375
14	-366.667
15	-366.667
16	-342.857
17	-328.571
18	-325
19	-300
20	-266.667
21	-266.667
22	-264

23	-253.333
24	-250
25	-233.333
26	-220
27	-200
28	-200
29	-190
30	-187.5
31	-180
32	-175
33	-150
34	-140
35	-120
36	-120
37	-88.5714
38	-85.7143
39	-68.8889
40	-66.6667
41	-50
42	-50
43	-33.3333
44	-10
45	-5
46	0
47	0
48	0
49	130
50	162.5
51	175
52	200
53	214.286
54	244.444
55	300
56	350
57	400
58	466.667
59	480
60	700
61	780
62	900
63	900
64	1200
65	1410
66	3700

Sen's Estimator (Median Q) is -145

Tied Group	Value	Members
1	4400	2
2	2900	2
3	3800	2

Time Period	Observations
10/1/2003	1
10/1/2004	1
10/1/2005	1
10/1/2006	1
10/1/2007	1

10/1/2008	1
10/1/2009	1
10/1/2010	1
10/1/2011	1
10/1/2012	1
10/1/2013	1
10/1/2014	1

There are 0 time periods with multiple data

A = 54
B = 0
C = 0
D = 0
E = 6
F = 0
a = 3828
b = 11880
c = 264
Group Variance = 209.667
For 80% confidence interval (two-tailed), Z at (1-0.8)/2 = 1.28155
C = 18.5567
M1 = (66 - 18.5567)/2.0 = 23.7217
M2 = (66 + 18.5567)/2.0 + 1 = 43.2783
Lower limit is -250 = Q(24)
Upper limit is -33.3333 = Q(43)
-33.3333 < 0 indicating a downward trend in data.

Sen's Slope Analysis

Parameter: GRO

Location: 04-210

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

80% Confidence Level

Xj	Xk	(Xj - Xk)/(j-k)	Q
6400 (10/1/2006)	4580 J (10/1/2005)	(6400 - 4580)/(2 - 1)	1820
8300 DY (10/1/2007)	4580 J (10/1/2005)	(8300 - 4580)/(3 - 1)	1860
6100 Y (10/1/2008)	4580 J (10/1/2005)	(6100 - 4580)/(4 - 1)	506.667
6800 Y (10/1/2009)	4580 J (10/1/2005)	(6800 - 4580)/(5 - 1)	555
4800 Y (10/1/2010)	4580 J (10/1/2005)	(4800 - 4580)/(6 - 1)	44
4700 Y (10/1/2011)	4580 J (10/1/2005)	(4700 - 4580)/(7 - 1)	20
6300 Y (10/1/2012)	4580 J (10/1/2005)	(6300 - 4580)/(8 - 1)	245.714
5500 Y (10/1/2013)	4580 J (10/1/2005)	(5500 - 4580)/(9 - 1)	115
3900 Y (10/1/2014)	4580 J (10/1/2005)	(3900 - 4580)/(10 - 1)	-75.5556
8300 DY (10/1/2007)	6400 (10/1/2006)	(8300 - 6400)/(3 - 2)	1900
6100 Y (10/1/2008)	6400 (10/1/2006)	(6100 - 6400)/(4 - 2)	-150
6800 Y (10/1/2009)	6400 (10/1/2006)	(6800 - 6400)/(5 - 2)	133.333
4800 Y (10/1/2010)	6400 (10/1/2006)	(4800 - 6400)/(6 - 2)	-400
4700 Y (10/1/2011)	6400 (10/1/2006)	(4700 - 6400)/(7 - 2)	-340
6300 Y (10/1/2012)	6400 (10/1/2006)	(6300 - 6400)/(8 - 2)	-16.6667
5500 Y (10/1/2013)	6400 (10/1/2006)	(5500 - 6400)/(9 - 2)	-128.571
3900 Y (10/1/2014)	6400 (10/1/2006)	(3900 - 6400)/(10 - 2)	-312.5
6100 Y (10/1/2008)	8300 DY (10/1/2007)	(6100 - 8300)/(4 - 3)	-2200
6800 Y (10/1/2009)	8300 DY (10/1/2007)	(6800 - 8300)/(5 - 3)	-750
4800 Y (10/1/2010)	8300 DY (10/1/2007)	(4800 - 8300)/(6 - 3)	-1166.67
4700 Y (10/1/2011)	8300 DY (10/1/2007)	(4700 - 8300)/(7 - 3)	-900
6300 Y (10/1/2012)	8300 DY (10/1/2007)	(6300 - 8300)/(8 - 3)	-400
5500 Y (10/1/2013)	8300 DY (10/1/2007)	(5500 - 8300)/(9 - 3)	-466.667
3900 Y (10/1/2014)	8300 DY (10/1/2007)	(3900 - 8300)/(10 - 3)	-628.571
6800 Y (10/1/2009)	6100 Y (10/1/2008)	(6800 - 6100)/(5 - 4)	700
4800 Y (10/1/2010)	6100 Y (10/1/2008)	(4800 - 6100)/(6 - 4)	-650
4700 Y (10/1/2011)	6100 Y (10/1/2008)	(4700 - 6100)/(7 - 4)	-466.667
6300 Y (10/1/2012)	6100 Y (10/1/2008)	(6300 - 6100)/(8 - 4)	50
5500 Y (10/1/2013)	6100 Y (10/1/2008)	(5500 - 6100)/(9 - 4)	-120
3900 Y (10/1/2014)	6100 Y (10/1/2008)	(3900 - 6100)/(10 - 4)	-366.667
4800 Y (10/1/2010)	6800 Y (10/1/2009)	(4800 - 6800)/(6 - 5)	-2000
4700 Y (10/1/2011)	6800 Y (10/1/2009)	(4700 - 6800)/(7 - 5)	-1050
6300 Y (10/1/2012)	6800 Y (10/1/2009)	(6300 - 6800)/(8 - 5)	-166.667
5500 Y (10/1/2013)	6800 Y (10/1/2009)	(5500 - 6800)/(9 - 5)	-325
3900 Y (10/1/2014)	6800 Y (10/1/2009)	(3900 - 6800)/(10 - 5)	-580
4700 Y (10/1/2011)	4800 Y (10/1/2010)	(4700 - 4800)/(7 - 6)	-100
6300 Y (10/1/2012)	4800 Y (10/1/2010)	(6300 - 4800)/(8 - 6)	750
5500 Y (10/1/2013)	4800 Y (10/1/2010)	(5500 - 4800)/(9 - 6)	233.333
3900 Y (10/1/2014)	4800 Y (10/1/2010)	(3900 - 4800)/(10 - 6)	-225
6300 Y (10/1/2012)	4700 Y (10/1/2011)	(6300 - 4700)/(8 - 7)	1600
5500 Y (10/1/2013)	4700 Y (10/1/2011)	(5500 - 4700)/(9 - 7)	400

3900 Y (10/1/2014)	4700 Y (10/1/2011)	(3900 - 4700)/(10 - 7)	-266.667
5500 Y (10/1/2013)	6300 Y (10/1/2012)	(5500 - 6300)/(9 - 8)	-800
3900 Y (10/1/2014)	6300 Y (10/1/2012)	(3900 - 6300)/(10 - 8)	-1200
3900 Y (10/1/2014)	5500 Y (10/1/2013)	(3900 - 5500)/(10 - 9)	-1600

Number of Q values = 45

Ordered Q Values

n	Q
1	-2200
2	-2000
3	-1600
4	-1200
5	-1166.67
6	-1050
7	-900
8	-800
9	-750
10	-650
11	-628.571
12	-580
13	-466.667
14	-466.667
15	-400
16	-400
17	-366.667
18	-340
19	-325
20	-312.5
21	-266.667
22	-225
23	-166.667
24	-150
25	-128.571
26	-120
27	-100
28	-75.5556
29	-16.6667
30	20
31	44
32	50
33	115
34	133.333
35	233.333
36	245.714
37	400
38	506.667
39	555
40	700
41	750
42	1600
43	1820
44	1860
45	1900

Sen's Estimator (Median Q) is -166.667

Time Period	Observations
10/1/2005	1
10/1/2006	1
10/1/2007	1
10/1/2008	1
10/1/2009	1
10/1/2010	1
10/1/2011	1
10/1/2012	1
10/1/2013	1
10/1/2014	1

There are 0 time periods with multiple data

A = 0
B = 0
C = 0
D = 0
E = 0
F = 0
a = 2250
b = 6480
c = 180
Group Variance = 125
For 80% confidence interval (two-tailed), Z at (1-0.8)/2 = 1.28155
C = 14.3282
M1 = (45 - 14.3282)/2.0 = 15.3359
M2 = (45 + 14.3282)/2.0 + 1 = 30.6641
Lower limit is -400 = Q(15)
Upper limit is 44 = Q(31)
-400 < 0 < 44 indicating no trend in data.

Sen's Slope Analysis

Parameter: GRO

Location: 04-213

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

80% Confidence Level

Xj	Xk	(Xj - Xk)/(j-k)	Q
5900 Y (10/1/2007)	3800 J (10/1/2006)	(5900 - 3800)/(2 - 1)	2100
6900 Z (10/1/2008)	3800 J (10/1/2006)	(6900 - 3800)/(3 - 1)	1550
4400 Z (10/1/2009)	3800 J (10/1/2006)	(4400 - 3800)/(4 - 1)	200
3300 Y (10/1/2010)	3800 J (10/1/2006)	(3300 - 3800)/(5 - 1)	-125
4000 Y (10/1/2011)	3800 J (10/1/2006)	(4000 - 3800)/(6 - 1)	40
3900 Y (10/1/2012)	3800 J (10/1/2006)	(3900 - 3800)/(7 - 1)	16.6667
3200 Y (10/1/2013)	3800 J (10/1/2006)	(3200 - 3800)/(8 - 1)	-85.7143
2800 Y (10/1/2014)	3800 J (10/1/2006)	(2800 - 3800)/(9 - 1)	-125
6900 Z (10/1/2008)	5900 Y (10/1/2007)	(6900 - 5900)/(3 - 2)	1000
4400 Z (10/1/2009)	5900 Y (10/1/2007)	(4400 - 5900)/(4 - 2)	-750
3300 Y (10/1/2010)	5900 Y (10/1/2007)	(3300 - 5900)/(5 - 2)	-866.667
4000 Y (10/1/2011)	5900 Y (10/1/2007)	(4000 - 5900)/(6 - 2)	-475
3900 Y (10/1/2012)	5900 Y (10/1/2007)	(3900 - 5900)/(7 - 2)	-400
3200 Y (10/1/2013)	5900 Y (10/1/2007)	(3200 - 5900)/(8 - 2)	-450
2800 Y (10/1/2014)	5900 Y (10/1/2007)	(2800 - 5900)/(9 - 2)	-442.857
4400 Z (10/1/2009)	6900 Z (10/1/2008)	(4400 - 6900)/(4 - 3)	-2500
3300 Y (10/1/2010)	6900 Z (10/1/2008)	(3300 - 6900)/(5 - 3)	-1800
4000 Y (10/1/2011)	6900 Z (10/1/2008)	(4000 - 6900)/(6 - 3)	-966.667
3900 Y (10/1/2012)	6900 Z (10/1/2008)	(3900 - 6900)/(7 - 3)	-750
3200 Y (10/1/2013)	6900 Z (10/1/2008)	(3200 - 6900)/(8 - 3)	-740
2800 Y (10/1/2014)	6900 Z (10/1/2008)	(2800 - 6900)/(9 - 3)	-683.333
3300 Y (10/1/2010)	4400 Z (10/1/2009)	(3300 - 4400)/(5 - 4)	-1100
4000 Y (10/1/2011)	4400 Z (10/1/2009)	(4000 - 4400)/(6 - 4)	-200
3900 Y (10/1/2012)	4400 Z (10/1/2009)	(3900 - 4400)/(7 - 4)	-166.667
3200 Y (10/1/2013)	4400 Z (10/1/2009)	(3200 - 4400)/(8 - 4)	-300
2800 Y (10/1/2014)	4400 Z (10/1/2009)	(2800 - 4400)/(9 - 4)	-320
4000 Y (10/1/2011)	3300 Y (10/1/2010)	(4000 - 3300)/(6 - 5)	700
3900 Y (10/1/2012)	3300 Y (10/1/2010)	(3900 - 3300)/(7 - 5)	300
3200 Y (10/1/2013)	3300 Y (10/1/2010)	(3200 - 3300)/(8 - 5)	-33.3333
2800 Y (10/1/2014)	3300 Y (10/1/2010)	(2800 - 3300)/(9 - 5)	-125
3900 Y (10/1/2012)	4000 Y (10/1/2011)	(3900 - 4000)/(7 - 6)	-100
3200 Y (10/1/2013)	4000 Y (10/1/2011)	(3200 - 4000)/(8 - 6)	-400
2800 Y (10/1/2014)	4000 Y (10/1/2011)	(2800 - 4000)/(9 - 6)	-400
3200 Y (10/1/2013)	3900 Y (10/1/2012)	(3200 - 3900)/(8 - 7)	-700
2800 Y (10/1/2014)	3900 Y (10/1/2012)	(2800 - 3900)/(9 - 7)	-550
2800 Y (10/1/2014)	3200 Y (10/1/2013)	(2800 - 3200)/(9 - 8)	-400

Number of Q values = 36

Ordered Q Values

n	Q
1	-2500
2	-1800
3	-1100
4	-966.667
5	-866.667
6	-750
7	-750
8	-740
9	-700
10	-683.333
11	-550
12	-475
13	-450
14	-442.857
15	-400
16	-400
17	-400
18	-400
19	-320
20	-300
21	-200
22	-166.667
23	-125
24	-125
25	-125
26	-100
27	-85.7143
28	-33.3333
29	16.6667
30	40
31	200
32	300
33	700
34	1000
35	1550
36	2100

Sen's Estimator (Median Q) is -360

Time Period	Observations
10/1/2006	1
10/1/2007	1
10/1/2008	1
10/1/2009	1
10/1/2010	1
10/1/2011	1
10/1/2012	1
10/1/2013	1
10/1/2014	1

There are 0 time periods with multiple data

A = 0
B = 0
C = 0
D = 0
E = 0

F = 0
a = 1656
b = 4536
c = 144
Group Variance = 92
For 80% confidence interval (two-tailed), Z at (1-0.8)/2 = 1.28155
C = 12.2922
M1 = (36 - 12.2922)/2.0 = 11.8539
M2 = (36 + 12.2922)/2.0 + 1 = 25.1461
Lower limit is -475 = Q(12)
Upper limit is -125 = Q(25)
-125 < 0 indicating a downward trend in data.

Sen's Slope Analysis

Parameter: DRO

Location: 03-420

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

80% Confidence Level

Xj	Xk	(Xj - Xk)/(j-k)	Q
4900 (10/1/2002)	12300 (10/1/2001)	(4900 - 12300)/(2 - 1)	-7400
4900 (10/1/2003)	12300 (10/1/2001)	(4900 - 12300)/(3 - 1)	-3700
5454 (10/1/2004)	12300 (10/1/2001)	(5454 - 12300)/(4 - 1)	-2282
5650 J (10/1/2005)	12300 (10/1/2001)	(5650 - 12300)/(5 - 1)	-1662.5
3800 (10/1/2006)	12300 (10/1/2001)	(3800 - 12300)/(6 - 1)	-1700
2400 Y (10/1/2007)	12300 (10/1/2001)	(2400 - 12300)/(7 - 1)	-1650
3300 Y (10/1/2008)	12300 (10/1/2001)	(3300 - 12300)/(8 - 1)	-1285.71
2200 Y (10/1/2009)	12300 (10/1/2001)	(2200 - 12300)/(9 - 1)	-1262.5
4300 Y (10/1/2011)	12300 (10/1/2001)	(4300 - 12300)/(10 - 1)	-888.889
3300 Y (10/1/2013)	12300 (10/1/2001)	(3300 - 12300)/(11 - 1)	-900
3400 Y (10/1/2014)	12300 (10/1/2001)	(3400 - 12300)/(12 - 1)	-809.091
4900 (10/1/2003)	4900 (10/1/2002)	(4900 - 4900)/(3 - 2)	0
5454 (10/1/2004)	4900 (10/1/2002)	(5454 - 4900)/(4 - 2)	277
5650 J (10/1/2005)	4900 (10/1/2002)	(5650 - 4900)/(5 - 2)	250
3800 (10/1/2006)	4900 (10/1/2002)	(3800 - 4900)/(6 - 2)	-275
2400 Y (10/1/2007)	4900 (10/1/2002)	(2400 - 4900)/(7 - 2)	-500
3300 Y (10/1/2008)	4900 (10/1/2002)	(3300 - 4900)/(8 - 2)	-266.667
2200 Y (10/1/2009)	4900 (10/1/2002)	(2200 - 4900)/(9 - 2)	-385.714
4300 Y (10/1/2011)	4900 (10/1/2002)	(4300 - 4900)/(10 - 2)	-75
3300 Y (10/1/2013)	4900 (10/1/2002)	(3300 - 4900)/(11 - 2)	-177.778
3400 Y (10/1/2014)	4900 (10/1/2002)	(3400 - 4900)/(12 - 2)	-150
5454 (10/1/2004)	4900 (10/1/2003)	(5454 - 4900)/(4 - 3)	554
5650 J (10/1/2005)	4900 (10/1/2003)	(5650 - 4900)/(5 - 3)	375
3800 (10/1/2006)	4900 (10/1/2003)	(3800 - 4900)/(6 - 3)	-366.667
2400 Y (10/1/2007)	4900 (10/1/2003)	(2400 - 4900)/(7 - 3)	-625
3300 Y (10/1/2008)	4900 (10/1/2003)	(3300 - 4900)/(8 - 3)	-320
2200 Y (10/1/2009)	4900 (10/1/2003)	(2200 - 4900)/(9 - 3)	-450
4300 Y (10/1/2011)	4900 (10/1/2003)	(4300 - 4900)/(10 - 3)	-85.7143
3300 Y (10/1/2013)	4900 (10/1/2003)	(3300 - 4900)/(11 - 3)	-200
3400 Y (10/1/2014)	4900 (10/1/2003)	(3400 - 4900)/(12 - 3)	-166.667
5650 J (10/1/2005)	5454 (10/1/2004)	(5650 - 5454)/(5 - 4)	196
3800 (10/1/2006)	5454 (10/1/2004)	(3800 - 5454)/(6 - 4)	-827
2400 Y (10/1/2007)	5454 (10/1/2004)	(2400 - 5454)/(7 - 4)	-1018
3300 Y (10/1/2008)	5454 (10/1/2004)	(3300 - 5454)/(8 - 4)	-538.5
2200 Y (10/1/2009)	5454 (10/1/2004)	(2200 - 5454)/(9 - 4)	-650.8
4300 Y (10/1/2011)	5454 (10/1/2004)	(4300 - 5454)/(10 - 4)	-192.333
3300 Y (10/1/2013)	5454 (10/1/2004)	(3300 - 5454)/(11 - 4)	-307.714
3400 Y (10/1/2014)	5454 (10/1/2004)	(3400 - 5454)/(12 - 4)	-256.75
3800 (10/1/2006)	5650 J (10/1/2005)	(3800 - 5650)/(6 - 5)	-1850
2400 Y (10/1/2007)	5650 J (10/1/2005)	(2400 - 5650)/(7 - 5)	-1625
3300 Y (10/1/2008)	5650 J (10/1/2005)	(3300 - 5650)/(8 - 5)	-783.333
2200 Y (10/1/2009)	5650 J (10/1/2005)	(2200 - 5650)/(9 - 5)	-862.5
4300 Y (10/1/2011)	5650 J (10/1/2005)	(4300 - 5650)/(10 - 5)	-270

3300 Y (10/1/2013)	5650 J (10/1/2005)	(3300 - 5650)/(11 - 5)	-391.667
3400 Y (10/1/2014)	5650 J (10/1/2005)	(3400 - 5650)/(12 - 5)	-321.429
2400 Y (10/1/2007)	3800 (10/1/2006)	(2400 - 3800)/(7 - 6)	-1400
3300 Y (10/1/2008)	3800 (10/1/2006)	(3300 - 3800)/(8 - 6)	-250
2200 Y (10/1/2009)	3800 (10/1/2006)	(2200 - 3800)/(9 - 6)	-533.333
4300 Y (10/1/2011)	3800 (10/1/2006)	(4300 - 3800)/(10 - 6)	125
3300 Y (10/1/2013)	3800 (10/1/2006)	(3300 - 3800)/(11 - 6)	-100
3400 Y (10/1/2014)	3800 (10/1/2006)	(3400 - 3800)/(12 - 6)	-66.6667
3300 Y (10/1/2008)	2400 Y (10/1/2007)	(3300 - 2400)/(8 - 7)	900
2200 Y (10/1/2009)	2400 Y (10/1/2007)	(2200 - 2400)/(9 - 7)	-100
4300 Y (10/1/2011)	2400 Y (10/1/2007)	(4300 - 2400)/(10 - 7)	633.333
3300 Y (10/1/2013)	2400 Y (10/1/2007)	(3300 - 2400)/(11 - 7)	225
3400 Y (10/1/2014)	2400 Y (10/1/2007)	(3400 - 2400)/(12 - 7)	200
2200 Y (10/1/2009)	3300 Y (10/1/2008)	(2200 - 3300)/(9 - 8)	-1100
4300 Y (10/1/2011)	3300 Y (10/1/2008)	(4300 - 3300)/(10 - 8)	500
3300 Y (10/1/2013)	3300 Y (10/1/2008)	(3300 - 3300)/(11 - 8)	0
3400 Y (10/1/2014)	3300 Y (10/1/2008)	(3400 - 3300)/(12 - 8)	25
4300 Y (10/1/2011)	2200 Y (10/1/2009)	(4300 - 2200)/(10 - 9)	2100
3300 Y (10/1/2013)	2200 Y (10/1/2009)	(3300 - 2200)/(11 - 9)	550
3400 Y (10/1/2014)	2200 Y (10/1/2009)	(3400 - 2200)/(12 - 9)	400
3300 Y (10/1/2013)	4300 Y (10/1/2011)	(3300 - 4300)/(11 - 10)	-1000
3400 Y (10/1/2014)	4300 Y (10/1/2011)	(3400 - 4300)/(12 - 10)	-450
3400 Y (10/1/2014)	3300 Y (10/1/2013)	(3400 - 3300)/(12 - 11)	100

Number of Q values = 66

Ordered Q Values

n	Q
1	-7400
2	-3700
3	-2282
4	-1850
5	-1700
6	-1662.5
7	-1650
8	-1625
9	-1400
10	-1285.71
11	-1262.5
12	-1100
13	-1018
14	-1000
15	-900
16	-888.889
17	-862.5
18	-827
19	-809.091
20	-783.333
21	-650.8
22	-625

23	-538.5
24	-533.333
25	-500
26	-450
27	-450
28	-391.667
29	-385.714
30	-366.667
31	-321.429
32	-320
33	-307.714
34	-275
35	-270
36	-266.667
37	-256.75
38	-250
39	-200
40	-192.333
41	-177.778
42	-166.667
43	-150
44	-100
45	-100
46	-85.7143
47	-75
48	-66.6667
49	0
50	0
51	25
52	100
53	125
54	196
55	200
56	225
57	250
58	277
59	375
60	400
61	500
62	550
63	554
64	633.333
65	900
66	2100

Sen's Estimator (Median Q) is -291.357

Tied Group	Value	Members
1	4900	2
2	3300	2

Time Period	Observations
10/1/2001	1
10/1/2002	1
10/1/2003	1
10/1/2004	1
10/1/2005	1
10/1/2006	1

10/1/2007	1
10/1/2008	1
10/1/2009	1
10/1/2011	1
10/1/2013	1
10/1/2014	1

There are 0 time periods with multiple data

A = 36
B = 0
C = 0
D = 0
E = 4
F = 0
a = 3828
b = 11880
c = 264
Group Variance = 210.667
For 80% confidence interval (two-tailed), Z at (1-0.8)/2 = 1.28155
C = 18.6009
M1 = (66 - 18.6009)/2.0 = 23.6996
M2 = (66 + 18.6009)/2.0 + 1 = 43.3004
Lower limit is -533.333 = Q(24)
Upper limit is -150 = Q(43)
-150 < 0 indicating a downward trend in data.

Sen's Slope Analysis

Parameter: DRO

Location: 03-421

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

80% Confidence Level

Xj	Xk	(Xj - Xk)/(j-k)	Q
3800 (10/1/2010)	15000 Y (10/1/2009)	(3800 - 15000)/(2 - 1)	-11200
19000 Y (10/1/2011)	15000 Y (10/1/2009)	(19000 - 15000)/(3 - 1)	2000
3000 Y (10/1/2013)	15000 Y (10/1/2009)	(3000 - 15000)/(4 - 1)	-4000
2400 Y (10/1/2014)	15000 Y (10/1/2009)	(2400 - 15000)/(5 - 1)	-3150
19000 Y (10/1/2011)	3800 (10/1/2010)	(19000 - 3800)/(3 - 2)	15200
3000 Y (10/1/2013)	3800 (10/1/2010)	(3000 - 3800)/(4 - 2)	-400
2400 Y (10/1/2014)	3800 (10/1/2010)	(2400 - 3800)/(5 - 2)	-466.667
3000 Y (10/1/2013)	19000 Y (10/1/2011)	(3000 - 19000)/(4 - 3)	-16000
2400 Y (10/1/2014)	19000 Y (10/1/2011)	(2400 - 19000)/(5 - 3)	-8300
2400 Y (10/1/2014)	3000 Y (10/1/2013)	(2400 - 3000)/(5 - 4)	-600

Number of Q values = 10

Ordered Q Values

n	Q
1	-16000
2	-11200
3	-8300
4	-4000
5	-3150
6	-600
7	-466.667
8	-400
9	2000
10	15200

Sen's Estimator (Median Q) is -1875

Time Period	Observations
10/1/2009	1
10/1/2010	1
10/1/2011	1
10/1/2013	1
10/1/2014	1

There are 0 time periods with multiple data

A = 0
B = 0
C = 0
D = 0
E = 0
F = 0
a = 300
b = 540

c = 40
Group Variance = 16.6667
For 80% confidence interval (two-tailed), Z at (1-0.8)/2 = 1.28155
C = 5.23191
M1 = (10 - 5.23191)/2.0 = 2.38405
M2 = (10 + 5.23191)/2.0 + 1 = 8.61595
Lower limit is -11200 = Q(2)
Upper limit is 2000 = Q(9)
-11200 < 0 < 2000 indicating no trend in data.

Sen's Slope Analysis

Parameter: Benzene

Location: 08-202

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

80% Confidence Level

Xj	Xk	(Xj - Xk)/(j-k)	Q
17.8 (10/1/2001)	22 (10/1/2000)	(17.8 - 22)/(2 - 1)	-4.2
18 (10/1/2002)	22 (10/1/2000)	(18 - 22)/(3 - 1)	-2
24 (10/1/2003)	22 (10/1/2000)	(24 - 22)/(4 - 1)	0.666667
16 (10/1/2004)	22 (10/1/2000)	(16 - 22)/(5 - 1)	-1.5
14.6 (10/1/2005)	22 (10/1/2000)	(14.6 - 22)/(6 - 1)	-1.48
13 J (10/1/2006)	22 (10/1/2000)	(13 - 22)/(7 - 1)	-1.5
14 (10/1/2007)	22 (10/1/2000)	(14 - 22)/(8 - 1)	-1.14286
16 (10/1/2008)	22 (10/1/2000)	(16 - 22)/(9 - 1)	-0.75
12 (10/1/2009)	22 (10/1/2000)	(12 - 22)/(10 - 1)	-1.11111
12 (10/1/2010)	22 (10/1/2000)	(12 - 22)/(11 - 1)	-1
9.6 (10/1/2012)	22 (10/1/2000)	(9.6 - 22)/(12 - 1)	-1.12727
9.3 (10/1/2013)	22 (10/1/2000)	(9.3 - 22)/(13 - 1)	-1.05833
9.9 (10/1/2014)	22 (10/1/2000)	(9.9 - 22)/(14 - 1)	-0.930769
18 (10/1/2002)	17.8 (10/1/2001)	(18 - 17.8)/(3 - 2)	0.2
24 (10/1/2003)	17.8 (10/1/2001)	(24 - 17.8)/(4 - 2)	3.1
16 (10/1/2004)	17.8 (10/1/2001)	(16 - 17.8)/(5 - 2)	-0.6
14.6 (10/1/2005)	17.8 (10/1/2001)	(14.6 - 17.8)/(6 - 2)	-0.8
13 J (10/1/2006)	17.8 (10/1/2001)	(13 - 17.8)/(7 - 2)	-0.96
14 (10/1/2007)	17.8 (10/1/2001)	(14 - 17.8)/(8 - 2)	-0.633333
16 (10/1/2008)	17.8 (10/1/2001)	(16 - 17.8)/(9 - 2)	-0.257143
12 (10/1/2009)	17.8 (10/1/2001)	(12 - 17.8)/(10 - 2)	-0.725
12 (10/1/2010)	17.8 (10/1/2001)	(12 - 17.8)/(11 - 2)	-0.644444
9.6 (10/1/2012)	17.8 (10/1/2001)	(9.6 - 17.8)/(12 - 2)	-0.82
9.3 (10/1/2013)	17.8 (10/1/2001)	(9.3 - 17.8)/(13 - 2)	-0.772727
9.9 (10/1/2014)	17.8 (10/1/2001)	(9.9 - 17.8)/(14 - 2)	-0.658333
24 (10/1/2003)	18 (10/1/2002)	(24 - 18)/(4 - 3)	6
16 (10/1/2004)	18 (10/1/2002)	(16 - 18)/(5 - 3)	-1
14.6 (10/1/2005)	18 (10/1/2002)	(14.6 - 18)/(6 - 3)	-1.13333
13 J (10/1/2006)	18 (10/1/2002)	(13 - 18)/(7 - 3)	-1.25
14 (10/1/2007)	18 (10/1/2002)	(14 - 18)/(8 - 3)	-0.8
16 (10/1/2008)	18 (10/1/2002)	(16 - 18)/(9 - 3)	-0.333333
12 (10/1/2009)	18 (10/1/2002)	(12 - 18)/(10 - 3)	-0.857143
12 (10/1/2010)	18 (10/1/2002)	(12 - 18)/(11 - 3)	-0.75
9.6 (10/1/2012)	18 (10/1/2002)	(9.6 - 18)/(12 - 3)	-0.933333
9.3 (10/1/2013)	18 (10/1/2002)	(9.3 - 18)/(13 - 3)	-0.87
9.9 (10/1/2014)	18 (10/1/2002)	(9.9 - 18)/(14 - 3)	-0.736364
16 (10/1/2004)	24 (10/1/2003)	(16 - 24)/(5 - 4)	-8
14.6 (10/1/2005)	24 (10/1/2003)	(14.6 - 24)/(6 - 4)	-4.7
13 J (10/1/2006)	24 (10/1/2003)	(13 - 24)/(7 - 4)	-3.66667
14 (10/1/2007)	24 (10/1/2003)	(14 - 24)/(8 - 4)	-2.5
16 (10/1/2008)	24 (10/1/2003)	(16 - 24)/(9 - 4)	-1.6
12 (10/1/2009)	24 (10/1/2003)	(12 - 24)/(10 - 4)	-2
12 (10/1/2010)	24 (10/1/2003)	(12 - 24)/(11 - 4)	-1.71429
9.6 (10/1/2012)	24 (10/1/2003)	(9.6 - 24)/(12 - 4)	-1.8

9.3 (10/1/2013)	24 (10/1/2003)	(9.3 - 24)/(13 - 4)	-1.63333
9.9 (10/1/2014)	24 (10/1/2003)	(9.9 - 24)/(14 - 4)	-1.41
14.6 (10/1/2005)	16 (10/1/2004)	(14.6 - 16)/(6 - 5)	-1.4
13 J (10/1/2006)	16 (10/1/2004)	(13 - 16)/(7 - 5)	-1.5
14 (10/1/2007)	16 (10/1/2004)	(14 - 16)/(8 - 5)	-0.666667
16 (10/1/2008)	16 (10/1/2004)	(16 - 16)/(9 - 5)	0
12 (10/1/2009)	16 (10/1/2004)	(12 - 16)/(10 - 5)	-0.8
12 (10/1/2010)	16 (10/1/2004)	(12 - 16)/(11 - 5)	-0.666667
9.6 (10/1/2012)	16 (10/1/2004)	(9.6 - 16)/(12 - 5)	-0.914286
9.3 (10/1/2013)	16 (10/1/2004)	(9.3 - 16)/(13 - 5)	-0.8375
9.9 (10/1/2014)	16 (10/1/2004)	(9.9 - 16)/(14 - 5)	-0.677778
13 J (10/1/2006)	14.6 (10/1/2005)	(13 - 14.6)/(7 - 6)	-1.6
14 (10/1/2007)	14.6 (10/1/2005)	(14 - 14.6)/(8 - 6)	-0.3
16 (10/1/2008)	14.6 (10/1/2005)	(16 - 14.6)/(9 - 6)	0.466667
12 (10/1/2009)	14.6 (10/1/2005)	(12 - 14.6)/(10 - 6)	-0.65
12 (10/1/2010)	14.6 (10/1/2005)	(12 - 14.6)/(11 - 6)	-0.52
9.6 (10/1/2012)	14.6 (10/1/2005)	(9.6 - 14.6)/(12 - 6)	-0.833333
9.3 (10/1/2013)	14.6 (10/1/2005)	(9.3 - 14.6)/(13 - 6)	-0.757143
9.9 (10/1/2014)	14.6 (10/1/2005)	(9.9 - 14.6)/(14 - 6)	-0.5875
14 (10/1/2007)	13 J (10/1/2006)	(14 - 13)/(8 - 7)	1
16 (10/1/2008)	13 J (10/1/2006)	(16 - 13)/(9 - 7)	1.5
12 (10/1/2009)	13 J (10/1/2006)	(12 - 13)/(10 - 7)	-0.333333
12 (10/1/2010)	13 J (10/1/2006)	(12 - 13)/(11 - 7)	-0.25
9.6 (10/1/2012)	13 J (10/1/2006)	(9.6 - 13)/(12 - 7)	-0.68
9.3 (10/1/2013)	13 J (10/1/2006)	(9.3 - 13)/(13 - 7)	-0.616667
9.9 (10/1/2014)	13 J (10/1/2006)	(9.9 - 13)/(14 - 7)	-0.442857
16 (10/1/2008)	14 (10/1/2007)	(16 - 14)/(9 - 8)	2
12 (10/1/2009)	14 (10/1/2007)	(12 - 14)/(10 - 8)	-1
12 (10/1/2010)	14 (10/1/2007)	(12 - 14)/(11 - 8)	-0.666667
9.6 (10/1/2012)	14 (10/1/2007)	(9.6 - 14)/(12 - 8)	-1.1
9.3 (10/1/2013)	14 (10/1/2007)	(9.3 - 14)/(13 - 8)	-0.94
9.9 (10/1/2014)	14 (10/1/2007)	(9.9 - 14)/(14 - 8)	-0.683333
12 (10/1/2009)	16 (10/1/2008)	(12 - 16)/(10 - 9)	-4
12 (10/1/2010)	16 (10/1/2008)	(12 - 16)/(11 - 9)	-2
9.6 (10/1/2012)	16 (10/1/2008)	(9.6 - 16)/(12 - 9)	-2.13333
9.3 (10/1/2013)	16 (10/1/2008)	(9.3 - 16)/(13 - 9)	-1.675
9.9 (10/1/2014)	16 (10/1/2008)	(9.9 - 16)/(14 - 9)	-1.22
12 (10/1/2010)	12 (10/1/2009)	(12 - 12)/(11 - 10)	0
9.6 (10/1/2012)	12 (10/1/2009)	(9.6 - 12)/(12 - 10)	-1.2
9.3 (10/1/2013)	12 (10/1/2009)	(9.3 - 12)/(13 - 10)	-0.9
9.9 (10/1/2014)	12 (10/1/2009)	(9.9 - 12)/(14 - 10)	-0.525
9.6 (10/1/2012)	12 (10/1/2010)	(9.6 - 12)/(12 - 11)	-2.4
9.3 (10/1/2013)	12 (10/1/2010)	(9.3 - 12)/(13 - 11)	-1.35
9.9 (10/1/2014)	12 (10/1/2010)	(9.9 - 12)/(14 - 11)	-0.7
9.3 (10/1/2013)	9.6 (10/1/2012)	(9.3 - 9.6)/(13 - 12)	-0.3
9.9 (10/1/2014)	9.6 (10/1/2012)	(9.9 - 9.6)/(14 - 12)	0.15
9.9 (10/1/2014)	9.3 (10/1/2013)	(9.9 - 9.3)/(14 - 13)	0.6

Number of Q values = 91

Ordered Q Values

n	Q
1	-8
2	-4.7
3	-4.2
4	-4
5	-3.66667
6	-2.5
7	-2.4
8	-2.13333
9	-2
10	-2
11	-2
12	-1.8
13	-1.71429
14	-1.675
15	-1.63333
16	-1.6
17	-1.6
18	-1.5
19	-1.5
20	-1.5
21	-1.48
22	-1.41
23	-1.4
24	-1.35
25	-1.25
26	-1.22
27	-1.2
28	-1.14286
29	-1.13333
30	-1.12727
31	-1.11111
32	-1.1
33	-1.05833
34	-1
35	-1
36	-1
37	-0.96
38	-0.94
39	-0.933333
40	-0.930769
41	-0.914286
42	-0.9
43	-0.87
44	-0.857143
45	-0.8375
46	-0.833333
47	-0.82
48	-0.8
49	-0.8
50	-0.8
51	-0.772727
52	-0.757143

53	-0.75
54	-0.75
55	-0.736364
56	-0.725
57	-0.7
58	-0.683333
59	-0.68
60	-0.677778
61	-0.666667
62	-0.666667
63	-0.666667
64	-0.658333
65	-0.65
66	-0.644444
67	-0.633333
68	-0.616667
69	-0.6
70	-0.5875
71	-0.525
72	-0.52
73	-0.442857
74	-0.333333
75	-0.333333
76	-0.3
77	-0.3
78	-0.257143
79	-0.25
80	0
81	0
82	0.15
83	0.2
84	0.466667
85	0.6
86	0.666667
87	1
88	1.5
89	2
90	3.1
91	6

Sen's Estimator (Median Q) is -0.833333

Tied Group	Value	Members
1	16	2
2	12	2

Time Period	Observations
10/1/2000	1
10/1/2001	1
10/1/2002	1
10/1/2003	1
10/1/2004	1
10/1/2005	1
10/1/2006	1
10/1/2007	1
10/1/2008	1
10/1/2009	1
10/1/2010	1

10/1/2012	1
10/1/2013	1
10/1/2014	1

There are 0 time periods with multiple data

A = 36
B = 0
C = 0
D = 0
E = 4
F = 0
a = 6006
b = 19656
c = 364
Group Variance = 331.667
For 80% confidence interval (two-tailed), Z at (1-0.8)/2 = 1.28155
C = 23.3392
M1 = (91 - 23.3392)/2.0 = 33.8304
M2 = (91 + 23.3392)/2.0 + 1 = 58.1696
Lower limit is -1 = Q(34)
Upper limit is -0.683333 = Q(58)
-0.683333 < 0 indicating a downward trend in data.

Sen's Slope Analysis

Parameter: DRO

Location: MRP-MW8

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

80% Confidence Level

Xj	Xk	(Xj - Xk)/(j-k)	Q
2700 (10/1/2002)	2790 (10/1/2001)	(2700 - 2790)/(2 - 1)	-90
3600 (10/1/2003)	2790 (10/1/2001)	(3600 - 2790)/(3 - 1)	405
3890 (10/1/2004)	2790 (10/1/2001)	(3890 - 2790)/(4 - 1)	366.667
3700 (10/1/2005)	2790 (10/1/2001)	(3700 - 2790)/(5 - 1)	227.5
4300 (10/1/2006)	2790 (10/1/2001)	(4300 - 2790)/(6 - 1)	302
4700 Y (10/1/2007)	2790 (10/1/2001)	(4700 - 2790)/(7 - 1)	318.333
3400 Y (10/1/2008)	2790 (10/1/2001)	(3400 - 2790)/(8 - 1)	87.1429
3000 Y (10/1/2009)	2790 (10/1/2001)	(3000 - 2790)/(9 - 1)	26.25
2700 Y (10/1/2010)	2790 (10/1/2001)	(2700 - 2790)/(10 - 1)	-10
3700 Y (10/1/2011)	2790 (10/1/2001)	(3700 - 2790)/(11 - 1)	91
3900 Y (10/1/2012)	2790 (10/1/2001)	(3900 - 2790)/(12 - 1)	100.909
3600 Y (10/1/2013)	2790 (10/1/2001)	(3600 - 2790)/(13 - 1)	67.5
3400 Y (10/1/2014)	2790 (10/1/2001)	(3400 - 2790)/(14 - 1)	46.9231
3600 (10/1/2003)	2700 (10/1/2002)	(3600 - 2700)/(3 - 2)	900
3890 (10/1/2004)	2700 (10/1/2002)	(3890 - 2700)/(4 - 2)	595
3700 (10/1/2005)	2700 (10/1/2002)	(3700 - 2700)/(5 - 2)	333.333
4300 (10/1/2006)	2700 (10/1/2002)	(4300 - 2700)/(6 - 2)	400
4700 Y (10/1/2007)	2700 (10/1/2002)	(4700 - 2700)/(7 - 2)	400
3400 Y (10/1/2008)	2700 (10/1/2002)	(3400 - 2700)/(8 - 2)	116.667
3000 Y (10/1/2009)	2700 (10/1/2002)	(3000 - 2700)/(9 - 2)	42.8571
2700 Y (10/1/2010)	2700 (10/1/2002)	(2700 - 2700)/(10 - 2)	0
3700 Y (10/1/2011)	2700 (10/1/2002)	(3700 - 2700)/(11 - 2)	111.111
3900 Y (10/1/2012)	2700 (10/1/2002)	(3900 - 2700)/(12 - 2)	120
3600 Y (10/1/2013)	2700 (10/1/2002)	(3600 - 2700)/(13 - 2)	81.8182
3400 Y (10/1/2014)	2700 (10/1/2002)	(3400 - 2700)/(14 - 2)	58.3333
3890 (10/1/2004)	3600 (10/1/2003)	(3890 - 3600)/(4 - 3)	290
3700 (10/1/2005)	3600 (10/1/2003)	(3700 - 3600)/(5 - 3)	50
4300 (10/1/2006)	3600 (10/1/2003)	(4300 - 3600)/(6 - 3)	233.333
4700 Y (10/1/2007)	3600 (10/1/2003)	(4700 - 3600)/(7 - 3)	275
3400 Y (10/1/2008)	3600 (10/1/2003)	(3400 - 3600)/(8 - 3)	-40
3000 Y (10/1/2009)	3600 (10/1/2003)	(3000 - 3600)/(9 - 3)	-100
2700 Y (10/1/2010)	3600 (10/1/2003)	(2700 - 3600)/(10 - 3)	-128.571
3700 Y (10/1/2011)	3600 (10/1/2003)	(3700 - 3600)/(11 - 3)	12.5
3900 Y (10/1/2012)	3600 (10/1/2003)	(3900 - 3600)/(12 - 3)	33.3333
3600 Y (10/1/2013)	3600 (10/1/2003)	(3600 - 3600)/(13 - 3)	0
3400 Y (10/1/2014)	3600 (10/1/2003)	(3400 - 3600)/(14 - 3)	-18.1818
3700 (10/1/2005)	3890 (10/1/2004)	(3700 - 3890)/(5 - 4)	-190
4300 (10/1/2006)	3890 (10/1/2004)	(4300 - 3890)/(6 - 4)	205
4700 Y (10/1/2007)	3890 (10/1/2004)	(4700 - 3890)/(7 - 4)	270
3400 Y (10/1/2008)	3890 (10/1/2004)	(3400 - 3890)/(8 - 4)	-122.5
3000 Y (10/1/2009)	3890 (10/1/2004)	(3000 - 3890)/(9 - 4)	-178
2700 Y (10/1/2010)	3890 (10/1/2004)	(2700 - 3890)/(10 - 4)	-198.333
3700 Y (10/1/2011)	3890 (10/1/2004)	(3700 - 3890)/(11 - 4)	-27.1429
3900 Y (10/1/2012)	3890 (10/1/2004)	(3900 - 3890)/(12 - 4)	1.25

3600 Y (10/1/2013)	3890 (10/1/2004)	(3600 - 3890)/(13 - 4)	-32.2222
3400 Y (10/1/2014)	3890 (10/1/2004)	(3400 - 3890)/(14 - 4)	-49
4300 (10/1/2006)	3700 (10/1/2005)	(4300 - 3700)/(6 - 5)	600
4700 Y (10/1/2007)	3700 (10/1/2005)	(4700 - 3700)/(7 - 5)	500
3400 Y (10/1/2008)	3700 (10/1/2005)	(3400 - 3700)/(8 - 5)	-100
3000 Y (10/1/2009)	3700 (10/1/2005)	(3000 - 3700)/(9 - 5)	-175
2700 Y (10/1/2010)	3700 (10/1/2005)	(2700 - 3700)/(10 - 5)	-200
3700 Y (10/1/2011)	3700 (10/1/2005)	(3700 - 3700)/(11 - 5)	0
3900 Y (10/1/2012)	3700 (10/1/2005)	(3900 - 3700)/(12 - 5)	28.5714
3600 Y (10/1/2013)	3700 (10/1/2005)	(3600 - 3700)/(13 - 5)	-12.5
3400 Y (10/1/2014)	3700 (10/1/2005)	(3400 - 3700)/(14 - 5)	-33.3333
4700 Y (10/1/2007)	4300 (10/1/2006)	(4700 - 4300)/(7 - 6)	400
3400 Y (10/1/2008)	4300 (10/1/2006)	(3400 - 4300)/(8 - 6)	-450
3000 Y (10/1/2009)	4300 (10/1/2006)	(3000 - 4300)/(9 - 6)	-433.333
2700 Y (10/1/2010)	4300 (10/1/2006)	(2700 - 4300)/(10 - 6)	-400
3700 Y (10/1/2011)	4300 (10/1/2006)	(3700 - 4300)/(11 - 6)	-120
3900 Y (10/1/2012)	4300 (10/1/2006)	(3900 - 4300)/(12 - 6)	-66.6667
3600 Y (10/1/2013)	4300 (10/1/2006)	(3600 - 4300)/(13 - 6)	-100
3400 Y (10/1/2014)	4300 (10/1/2006)	(3400 - 4300)/(14 - 6)	-112.5
3400 Y (10/1/2008)	4700 Y (10/1/2007)	(3400 - 4700)/(8 - 7)	-1300
3000 Y (10/1/2009)	4700 Y (10/1/2007)	(3000 - 4700)/(9 - 7)	-850
2700 Y (10/1/2010)	4700 Y (10/1/2007)	(2700 - 4700)/(10 - 7)	-666.667
3700 Y (10/1/2011)	4700 Y (10/1/2007)	(3700 - 4700)/(11 - 7)	-250
3900 Y (10/1/2012)	4700 Y (10/1/2007)	(3900 - 4700)/(12 - 7)	-160
3600 Y (10/1/2013)	4700 Y (10/1/2007)	(3600 - 4700)/(13 - 7)	-183.333
3400 Y (10/1/2014)	4700 Y (10/1/2007)	(3400 - 4700)/(14 - 7)	-185.714
3000 Y (10/1/2009)	3400 Y (10/1/2008)	(3000 - 3400)/(9 - 8)	-400
2700 Y (10/1/2010)	3400 Y (10/1/2008)	(2700 - 3400)/(10 - 8)	-350
3700 Y (10/1/2011)	3400 Y (10/1/2008)	(3700 - 3400)/(11 - 8)	100
3900 Y (10/1/2012)	3400 Y (10/1/2008)	(3900 - 3400)/(12 - 8)	125
3600 Y (10/1/2013)	3400 Y (10/1/2008)	(3600 - 3400)/(13 - 8)	40
3400 Y (10/1/2014)	3400 Y (10/1/2008)	(3400 - 3400)/(14 - 8)	0
2700 Y (10/1/2010)	3000 Y (10/1/2009)	(2700 - 3000)/(10 - 9)	-300
3700 Y (10/1/2011)	3000 Y (10/1/2009)	(3700 - 3000)/(11 - 9)	350
3900 Y (10/1/2012)	3000 Y (10/1/2009)	(3900 - 3000)/(12 - 9)	300
3600 Y (10/1/2013)	3000 Y (10/1/2009)	(3600 - 3000)/(13 - 9)	150
3400 Y (10/1/2014)	3000 Y (10/1/2009)	(3400 - 3000)/(14 - 9)	80
3700 Y (10/1/2011)	2700 Y (10/1/2010)	(3700 - 2700)/(11 - 10)	1000
3900 Y (10/1/2012)	2700 Y (10/1/2010)	(3900 - 2700)/(12 - 10)	600
3600 Y (10/1/2013)	2700 Y (10/1/2010)	(3600 - 2700)/(13 - 10)	300
3400 Y (10/1/2014)	2700 Y (10/1/2010)	(3400 - 2700)/(14 - 10)	175
3900 Y (10/1/2012)	3700 Y (10/1/2011)	(3900 - 3700)/(12 - 11)	200
3600 Y (10/1/2013)	3700 Y (10/1/2011)	(3600 - 3700)/(13 - 11)	-50
3400 Y (10/1/2014)	3700 Y (10/1/2011)	(3400 - 3700)/(14 - 11)	-100
3600 Y (10/1/2013)	3900 Y (10/1/2012)	(3600 - 3900)/(13 - 12)	-300
3400 Y (10/1/2014)	3900 Y (10/1/2012)	(3400 - 3900)/(14 - 12)	-250
3400 Y (10/1/2014)	3600 Y (10/1/2013)	(3400 - 3600)/(14 - 13)	-200

Number of Q values = 91

Ordered Q Values

n	Q
1	-1300
2	-850
3	-666.667
4	-450
5	-433.333
6	-400
7	-400
8	-350
9	-300
10	-300
11	-250
12	-250
13	-200
14	-200
15	-198.333
16	-190
17	-185.714
18	-183.333
19	-178
20	-175
21	-160
22	-128.571
23	-122.5
24	-120
25	-112.5
26	-100
27	-100
28	-100
29	-100
30	-90
31	-66.6667
32	-50
33	-49
34	-40
35	-33.3333
36	-32.2222
37	-27.1429
38	-18.1818
39	-12.5
40	-10
41	0
42	0
43	0
44	0
45	1.25
46	12.5
47	26.25
48	28.5714
49	33.3333
50	40
51	42.8571
52	46.9231

53	50
54	58.3333
55	67.5
56	80
57	81.8182
58	87.1429
59	91
60	100
61	100.909
62	111.111
63	116.667
64	120
65	125
66	150
67	175
68	200
69	205
70	227.5
71	233.333
72	270
73	275
74	290
75	300
76	300
77	302
78	318.333
79	333.333
80	350
81	366.667
82	400
83	400
84	400
85	405
86	500
87	595
88	600
89	600
90	900
91	1000

Sen's Estimator (Median Q) is 12.5

Tied Group	Value	Members
1	2700	2
2	3600	2
3	3700	2
4	3400	2

Time Period	Observations
10/1/2001	1
10/1/2002	1
10/1/2003	1
10/1/2004	1
10/1/2005	1
10/1/2006	1
10/1/2007	1
10/1/2008	1
10/1/2009	1

10/1/2010	1
10/1/2011	1
10/1/2012	1
10/1/2013	1
10/1/2014	1

There are 0 time periods with multiple data

A = 72
B = 0
C = 0
D = 0
E = 8
F = 0
a = 6006
b = 19656
c = 364
Group Variance = 329.667
For 80% confidence interval (two-tailed), Z at (1-0.8)/2 = 1.28155
C = 23.2688
M1 = (91 - 23.2688)/2.0 = 33.8656
M2 = (91 + 23.2688)/2.0 + 1 = 58.1344
Lower limit is -40 = Q(34)
Upper limit is 87.1429 = Q(58)
-40 < 0 < 87.1429 indicating no trend in data.

Sen's Slope Analysis

Parameter: DRO

Location: 02-230

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

80% Confidence Level

Xj	Xk	(Xj - Xk)/(j-k)	Q
3500 (10/1/2002)	4230 (10/1/2001)	(3500 - 4230)/(2 - 1)	-730
3900 (10/1/2003)	4230 (10/1/2001)	(3900 - 4230)/(3 - 1)	-165
5760 (10/1/2004)	4230 (10/1/2001)	(5760 - 4230)/(4 - 1)	510
4060 J (10/1/2005)	4230 (10/1/2001)	(4060 - 4230)/(5 - 1)	-42.5
5500 (10/1/2006)	4230 (10/1/2001)	(5500 - 4230)/(6 - 1)	254
4800 Y (10/1/2007)	4230 (10/1/2001)	(4800 - 4230)/(7 - 1)	95
5000 Y (10/1/2008)	4230 (10/1/2001)	(5000 - 4230)/(8 - 1)	110
2400 Y (10/1/2009)	4230 (10/1/2001)	(2400 - 4230)/(9 - 1)	-228.75
4000 Y (10/1/2010)	4230 (10/1/2001)	(4000 - 4230)/(10 - 1)	-25.5556
4200 Y (10/1/2011)	4230 (10/1/2001)	(4200 - 4230)/(11 - 1)	-3
3200 Y (10/1/2012)	4230 (10/1/2001)	(3200 - 4230)/(12 - 1)	-93.6364
3500 Y (10/1/2013)	4230 (10/1/2001)	(3500 - 4230)/(13 - 1)	-60.8333
4300 Y (10/1/2014)	4230 (10/1/2001)	(4300 - 4230)/(14 - 1)	5.38462
3900 (10/1/2003)	3500 (10/1/2002)	(3900 - 3500)/(3 - 2)	400
5760 (10/1/2004)	3500 (10/1/2002)	(5760 - 3500)/(4 - 2)	1130
4060 J (10/1/2005)	3500 (10/1/2002)	(4060 - 3500)/(5 - 2)	186.667
5500 (10/1/2006)	3500 (10/1/2002)	(5500 - 3500)/(6 - 2)	500
4800 Y (10/1/2007)	3500 (10/1/2002)	(4800 - 3500)/(7 - 2)	260
5000 Y (10/1/2008)	3500 (10/1/2002)	(5000 - 3500)/(8 - 2)	250
2400 Y (10/1/2009)	3500 (10/1/2002)	(2400 - 3500)/(9 - 2)	-157.143
4000 Y (10/1/2010)	3500 (10/1/2002)	(4000 - 3500)/(10 - 2)	62.5
4200 Y (10/1/2011)	3500 (10/1/2002)	(4200 - 3500)/(11 - 2)	77.7778
3200 Y (10/1/2012)	3500 (10/1/2002)	(3200 - 3500)/(12 - 2)	-30
3500 Y (10/1/2013)	3500 (10/1/2002)	(3500 - 3500)/(13 - 2)	0
4300 Y (10/1/2014)	3500 (10/1/2002)	(4300 - 3500)/(14 - 2)	66.6667
5760 (10/1/2004)	3900 (10/1/2003)	(5760 - 3900)/(4 - 3)	1860
4060 J (10/1/2005)	3900 (10/1/2003)	(4060 - 3900)/(5 - 3)	80
5500 (10/1/2006)	3900 (10/1/2003)	(5500 - 3900)/(6 - 3)	533.333
4800 Y (10/1/2007)	3900 (10/1/2003)	(4800 - 3900)/(7 - 3)	225
5000 Y (10/1/2008)	3900 (10/1/2003)	(5000 - 3900)/(8 - 3)	220
2400 Y (10/1/2009)	3900 (10/1/2003)	(2400 - 3900)/(9 - 3)	-250
4000 Y (10/1/2010)	3900 (10/1/2003)	(4000 - 3900)/(10 - 3)	14.2857
4200 Y (10/1/2011)	3900 (10/1/2003)	(4200 - 3900)/(11 - 3)	37.5
3200 Y (10/1/2012)	3900 (10/1/2003)	(3200 - 3900)/(12 - 3)	-77.7778
3500 Y (10/1/2013)	3900 (10/1/2003)	(3500 - 3900)/(13 - 3)	-40
4300 Y (10/1/2014)	3900 (10/1/2003)	(4300 - 3900)/(14 - 3)	36.3636
4060 J (10/1/2005)	5760 (10/1/2004)	(4060 - 5760)/(5 - 4)	-1700
5500 (10/1/2006)	5760 (10/1/2004)	(5500 - 5760)/(6 - 4)	-130
4800 Y (10/1/2007)	5760 (10/1/2004)	(4800 - 5760)/(7 - 4)	-320
5000 Y (10/1/2008)	5760 (10/1/2004)	(5000 - 5760)/(8 - 4)	-190
2400 Y (10/1/2009)	5760 (10/1/2004)	(2400 - 5760)/(9 - 4)	-672
4000 Y (10/1/2010)	5760 (10/1/2004)	(4000 - 5760)/(10 - 4)	-293.333
4200 Y (10/1/2011)	5760 (10/1/2004)	(4200 - 5760)/(11 - 4)	-222.857
3200 Y (10/1/2012)	5760 (10/1/2004)	(3200 - 5760)/(12 - 4)	-320

3500 Y (10/1/2013)	5760 (10/1/2004)	(3500 - 5760)/(13 - 4)	-251.111
4300 Y (10/1/2014)	5760 (10/1/2004)	(4300 - 5760)/(14 - 4)	-146
5500 (10/1/2006)	4060 J (10/1/2005)	(5500 - 4060)/(6 - 5)	1440
4800 Y (10/1/2007)	4060 J (10/1/2005)	(4800 - 4060)/(7 - 5)	370
5000 Y (10/1/2008)	4060 J (10/1/2005)	(5000 - 4060)/(8 - 5)	313.333
2400 Y (10/1/2009)	4060 J (10/1/2005)	(2400 - 4060)/(9 - 5)	-415
4000 Y (10/1/2010)	4060 J (10/1/2005)	(4000 - 4060)/(10 - 5)	-12
4200 Y (10/1/2011)	4060 J (10/1/2005)	(4200 - 4060)/(11 - 5)	23.3333
3200 Y (10/1/2012)	4060 J (10/1/2005)	(3200 - 4060)/(12 - 5)	-122.857
3500 Y (10/1/2013)	4060 J (10/1/2005)	(3500 - 4060)/(13 - 5)	-70
4300 Y (10/1/2014)	4060 J (10/1/2005)	(4300 - 4060)/(14 - 5)	26.6667
4800 Y (10/1/2007)	5500 (10/1/2006)	(4800 - 5500)/(7 - 6)	-700
5000 Y (10/1/2008)	5500 (10/1/2006)	(5000 - 5500)/(8 - 6)	-250
2400 Y (10/1/2009)	5500 (10/1/2006)	(2400 - 5500)/(9 - 6)	-1033.33
4000 Y (10/1/2010)	5500 (10/1/2006)	(4000 - 5500)/(10 - 6)	-375
4200 Y (10/1/2011)	5500 (10/1/2006)	(4200 - 5500)/(11 - 6)	-260
3200 Y (10/1/2012)	5500 (10/1/2006)	(3200 - 5500)/(12 - 6)	-383.333
3500 Y (10/1/2013)	5500 (10/1/2006)	(3500 - 5500)/(13 - 6)	-285.714
4300 Y (10/1/2014)	5500 (10/1/2006)	(4300 - 5500)/(14 - 6)	-150
5000 Y (10/1/2008)	4800 Y (10/1/2007)	(5000 - 4800)/(8 - 7)	200
2400 Y (10/1/2009)	4800 Y (10/1/2007)	(2400 - 4800)/(9 - 7)	-1200
4000 Y (10/1/2010)	4800 Y (10/1/2007)	(4000 - 4800)/(10 - 7)	-266.667
4200 Y (10/1/2011)	4800 Y (10/1/2007)	(4200 - 4800)/(11 - 7)	-150
3200 Y (10/1/2012)	4800 Y (10/1/2007)	(3200 - 4800)/(12 - 7)	-320
3500 Y (10/1/2013)	4800 Y (10/1/2007)	(3500 - 4800)/(13 - 7)	-216.667
4300 Y (10/1/2014)	4800 Y (10/1/2007)	(4300 - 4800)/(14 - 7)	-71.4286
2400 Y (10/1/2009)	5000 Y (10/1/2008)	(2400 - 5000)/(9 - 8)	-2600
4000 Y (10/1/2010)	5000 Y (10/1/2008)	(4000 - 5000)/(10 - 8)	-500
4200 Y (10/1/2011)	5000 Y (10/1/2008)	(4200 - 5000)/(11 - 8)	-266.667
3200 Y (10/1/2012)	5000 Y (10/1/2008)	(3200 - 5000)/(12 - 8)	-450
3500 Y (10/1/2013)	5000 Y (10/1/2008)	(3500 - 5000)/(13 - 8)	-300
4300 Y (10/1/2014)	5000 Y (10/1/2008)	(4300 - 5000)/(14 - 8)	-116.667
4000 Y (10/1/2010)	2400 Y (10/1/2009)	(4000 - 2400)/(10 - 9)	1600
4200 Y (10/1/2011)	2400 Y (10/1/2009)	(4200 - 2400)/(11 - 9)	900
3200 Y (10/1/2012)	2400 Y (10/1/2009)	(3200 - 2400)/(12 - 9)	266.667
3500 Y (10/1/2013)	2400 Y (10/1/2009)	(3500 - 2400)/(13 - 9)	275
4300 Y (10/1/2014)	2400 Y (10/1/2009)	(4300 - 2400)/(14 - 9)	380
4200 Y (10/1/2011)	4000 Y (10/1/2010)	(4200 - 4000)/(11 - 10)	200
3200 Y (10/1/2012)	4000 Y (10/1/2010)	(3200 - 4000)/(12 - 10)	-400
3500 Y (10/1/2013)	4000 Y (10/1/2010)	(3500 - 4000)/(13 - 10)	-166.667
4300 Y (10/1/2014)	4000 Y (10/1/2010)	(4300 - 4000)/(14 - 10)	75
3200 Y (10/1/2012)	4200 Y (10/1/2011)	(3200 - 4200)/(12 - 11)	-1000
3500 Y (10/1/2013)	4200 Y (10/1/2011)	(3500 - 4200)/(13 - 11)	-350
4300 Y (10/1/2014)	4200 Y (10/1/2011)	(4300 - 4200)/(14 - 11)	33.3333
3500 Y (10/1/2013)	3200 Y (10/1/2012)	(3500 - 3200)/(13 - 12)	300
4300 Y (10/1/2014)	3200 Y (10/1/2012)	(4300 - 3200)/(14 - 12)	550
4300 Y (10/1/2014)	3500 Y (10/1/2013)	(4300 - 3500)/(14 - 13)	800

Number of Q values = 91

Ordered Q Values

n	Q
1	-2600
2	-1700
3	-1200
4	-1033.33
5	-1000
6	-730
7	-700
8	-672
9	-500
10	-450
11	-415
12	-400
13	-383.333
14	-375
15	-350
16	-320
17	-320
18	-320
19	-300
20	-293.333
21	-285.714
22	-266.667
23	-266.667
24	-260
25	-251.111
26	-250
27	-250
28	-228.75
29	-222.857
30	-216.667
31	-190
32	-166.667
33	-165
34	-157.143
35	-150
36	-150
37	-146
38	-130
39	-122.857
40	-116.667
41	-93.6364
42	-77.7778
43	-71.4286
44	-70
45	-60.8333
46	-42.5
47	-40
48	-30
49	-25.5556
50	-12
51	-3
52	0

53	5.38462
54	14.2857
55	23.3333
56	26.6667
57	33.3333
58	36.3636
59	37.5
60	62.5
61	66.6667
62	75
63	77.7778
64	80
65	95
66	110
67	186.667
68	200
69	200
70	220
71	225
72	250
73	254
74	260
75	266.667
76	275
77	300
78	313.333
79	370
80	380
81	400
82	500
83	510
84	533.333
85	550
86	800
87	900
88	1130
89	1440
90	1600
91	1860

Sen's Estimator (Median Q) is -42.5

Tied Group	Value	Members
1	3500	2

Time Period	Observations
10/1/2001	1
10/1/2002	1
10/1/2003	1
10/1/2004	1
10/1/2005	1
10/1/2006	1
10/1/2007	1
10/1/2008	1
10/1/2009	1
10/1/2010	1
10/1/2011	1
10/1/2012	1

10/1/2013	1
10/1/2014	1

There are 0 time periods with multiple data

A = 18
B = 0
C = 0
D = 0
E = 2
F = 0
a = 6006
b = 19656
c = 364
Group Variance = 332.667
For 80% confidence interval (two-tailed), Z at (1-0.8)/2 = 1.28155
C = 23.3744
M1 = (91 - 23.3744)/2.0 = 33.8128
M2 = (91 + 23.3744)/2.0 + 1 = 58.1872
Lower limit is -157.143 = Q(34)
Upper limit is 36.3636 = Q(58)
-157.143 < 0 < 36.3636 indicating no trend in data.

Sen's Slope Analysis

Parameter: GRO

Location: MW14-5

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

80% Confidence Level

Xj	Xk	(Xj - Xk)/(j-k)	Q
12000 (10/1/2002)	15900 (10/1/2001)	(12000 - 15900)/(2 - 1)	-3900
13000 (10/1/2003)	15900 (10/1/2001)	(13000 - 15900)/(3 - 1)	-1450
16100 J (10/1/2004)	15900 (10/1/2001)	(16100 - 15900)/(4 - 1)	66.6667
12600 J (10/1/2005)	15900 (10/1/2001)	(12600 - 15900)/(5 - 1)	-825
9900 (10/1/2006)	15900 (10/1/2001)	(9900 - 15900)/(6 - 1)	-1200
14000 DY (10/1/2007)	15900 (10/1/2001)	(14000 - 15900)/(7 - 1)	-316.667
11000 DY (10/1/2008)	15900 (10/1/2001)	(11000 - 15900)/(8 - 1)	-700
15000 DY (10/1/2009)	15900 (10/1/2001)	(15000 - 15900)/(9 - 1)	-112.5
9000 DY (10/1/2010)	15900 (10/1/2001)	(9000 - 15900)/(10 - 1)	-766.667
11000 DY (10/1/2011)	15900 (10/1/2001)	(11000 - 15900)/(11 - 1)	-490
7000 Y (10/1/2012)	15900 (10/1/2001)	(7000 - 15900)/(12 - 1)	-809.091
4700 Y (10/1/2013)	15900 (10/1/2001)	(4700 - 15900)/(13 - 1)	-933.333
5400 YJ (10/1/2014)	15900 (10/1/2001)	(5400 - 15900)/(14 - 1)	-807.692
13000 (10/1/2003)	12000 (10/1/2002)	(13000 - 12000)/(3 - 2)	1000
16100 J (10/1/2004)	12000 (10/1/2002)	(16100 - 12000)/(4 - 2)	2050
12600 J (10/1/2005)	12000 (10/1/2002)	(12600 - 12000)/(5 - 2)	200
9900 (10/1/2006)	12000 (10/1/2002)	(9900 - 12000)/(6 - 2)	-525
14000 DY (10/1/2007)	12000 (10/1/2002)	(14000 - 12000)/(7 - 2)	400
11000 DY (10/1/2008)	12000 (10/1/2002)	(11000 - 12000)/(8 - 2)	-166.667
15000 DY (10/1/2009)	12000 (10/1/2002)	(15000 - 12000)/(9 - 2)	428.571
9000 DY (10/1/2010)	12000 (10/1/2002)	(9000 - 12000)/(10 - 2)	-375
11000 DY (10/1/2011)	12000 (10/1/2002)	(11000 - 12000)/(11 - 2)	-111.111
7000 Y (10/1/2012)	12000 (10/1/2002)	(7000 - 12000)/(12 - 2)	-500
4700 Y (10/1/2013)	12000 (10/1/2002)	(4700 - 12000)/(13 - 2)	-663.636
5400 YJ (10/1/2014)	12000 (10/1/2002)	(5400 - 12000)/(14 - 2)	-550
16100 J (10/1/2004)	13000 (10/1/2003)	(16100 - 13000)/(4 - 3)	3100
12600 J (10/1/2005)	13000 (10/1/2003)	(12600 - 13000)/(5 - 3)	-200
9900 (10/1/2006)	13000 (10/1/2003)	(9900 - 13000)/(6 - 3)	-1033.33
14000 DY (10/1/2007)	13000 (10/1/2003)	(14000 - 13000)/(7 - 3)	250
11000 DY (10/1/2008)	13000 (10/1/2003)	(11000 - 13000)/(8 - 3)	-400
15000 DY (10/1/2009)	13000 (10/1/2003)	(15000 - 13000)/(9 - 3)	333.333
9000 DY (10/1/2010)	13000 (10/1/2003)	(9000 - 13000)/(10 - 3)	-571.429
11000 DY (10/1/2011)	13000 (10/1/2003)	(11000 - 13000)/(11 - 3)	-250
7000 Y (10/1/2012)	13000 (10/1/2003)	(7000 - 13000)/(12 - 3)	-666.667
4700 Y (10/1/2013)	13000 (10/1/2003)	(4700 - 13000)/(13 - 3)	-830
5400 YJ (10/1/2014)	13000 (10/1/2003)	(5400 - 13000)/(14 - 3)	-690.909
12600 J (10/1/2005)	16100 J (10/1/2004)	(12600 - 16100)/(5 - 4)	-3500
9900 (10/1/2006)	16100 J (10/1/2004)	(9900 - 16100)/(6 - 4)	-3100
14000 DY (10/1/2007)	16100 J (10/1/2004)	(14000 - 16100)/(7 - 4)	-700
11000 DY (10/1/2008)	16100 J (10/1/2004)	(11000 - 16100)/(8 - 4)	-1275
15000 DY (10/1/2009)	16100 J (10/1/2004)	(15000 - 16100)/(9 - 4)	-220
9000 DY (10/1/2010)	16100 J (10/1/2004)	(9000 - 16100)/(10 - 4)	-1183.33
11000 DY (10/1/2011)	16100 J (10/1/2004)	(11000 - 16100)/(11 - 4)	-728.571
7000 Y (10/1/2012)	16100 J (10/1/2004)	(7000 - 16100)/(12 - 4)	-1137.5

4700 Y (10/1/2013)	16100 J (10/1/2004)	(4700 - 16100)/(13 - 4)	-1266.67
5400 YJ (10/1/2014)	16100 J (10/1/2004)	(5400 - 16100)/(14 - 4)	-1070
9900 (10/1/2006)	12600 J (10/1/2005)	(9900 - 12600)/(6 - 5)	-2700
14000 DY (10/1/2007)	12600 J (10/1/2005)	(14000 - 12600)/(7 - 5)	700
11000 DY (10/1/2008)	12600 J (10/1/2005)	(11000 - 12600)/(8 - 5)	-533.333
15000 DY (10/1/2009)	12600 J (10/1/2005)	(15000 - 12600)/(9 - 5)	600
9000 DY (10/1/2010)	12600 J (10/1/2005)	(9000 - 12600)/(10 - 5)	-720
11000 DY (10/1/2011)	12600 J (10/1/2005)	(11000 - 12600)/(11 - 5)	-266.667
7000 Y (10/1/2012)	12600 J (10/1/2005)	(7000 - 12600)/(12 - 5)	-800
4700 Y (10/1/2013)	12600 J (10/1/2005)	(4700 - 12600)/(13 - 5)	-987.5
5400 YJ (10/1/2014)	12600 J (10/1/2005)	(5400 - 12600)/(14 - 5)	-800
14000 DY (10/1/2007)	9900 (10/1/2006)	(14000 - 9900)/(7 - 6)	4100
11000 DY (10/1/2008)	9900 (10/1/2006)	(11000 - 9900)/(8 - 6)	550
15000 DY (10/1/2009)	9900 (10/1/2006)	(15000 - 9900)/(9 - 6)	1700
9000 DY (10/1/2010)	9900 (10/1/2006)	(9000 - 9900)/(10 - 6)	-225
11000 DY (10/1/2011)	9900 (10/1/2006)	(11000 - 9900)/(11 - 6)	220
7000 Y (10/1/2012)	9900 (10/1/2006)	(7000 - 9900)/(12 - 6)	-483.333
4700 Y (10/1/2013)	9900 (10/1/2006)	(4700 - 9900)/(13 - 6)	-742.857
5400 YJ (10/1/2014)	9900 (10/1/2006)	(5400 - 9900)/(14 - 6)	-562.5
11000 DY (10/1/2008)	14000 DY (10/1/2007)	(11000 - 14000)/(8 - 7)	-3000
15000 DY (10/1/2009)	14000 DY (10/1/2007)	(15000 - 14000)/(9 - 7)	500
9000 DY (10/1/2010)	14000 DY (10/1/2007)	(9000 - 14000)/(10 - 7)	-1666.67
11000 DY (10/1/2011)	14000 DY (10/1/2007)	(11000 - 14000)/(11 - 7)	-750
7000 Y (10/1/2012)	14000 DY (10/1/2007)	(7000 - 14000)/(12 - 7)	-1400
4700 Y (10/1/2013)	14000 DY (10/1/2007)	(4700 - 14000)/(13 - 7)	-1550
5400 YJ (10/1/2014)	14000 DY (10/1/2007)	(5400 - 14000)/(14 - 7)	-1228.57
15000 DY (10/1/2009)	11000 DY (10/1/2008)	(15000 - 11000)/(9 - 8)	4000
9000 DY (10/1/2010)	11000 DY (10/1/2008)	(9000 - 11000)/(10 - 8)	-1000
11000 DY (10/1/2011)	11000 DY (10/1/2008)	(11000 - 11000)/(11 - 8)	0
7000 Y (10/1/2012)	11000 DY (10/1/2008)	(7000 - 11000)/(12 - 8)	-1000
4700 Y (10/1/2013)	11000 DY (10/1/2008)	(4700 - 11000)/(13 - 8)	-1260
5400 YJ (10/1/2014)	11000 DY (10/1/2008)	(5400 - 11000)/(14 - 8)	-933.333
9000 DY (10/1/2010)	15000 DY (10/1/2009)	(9000 - 15000)/(10 - 9)	-6000
11000 DY (10/1/2011)	15000 DY (10/1/2009)	(11000 - 15000)/(11 - 9)	-2000
7000 Y (10/1/2012)	15000 DY (10/1/2009)	(7000 - 15000)/(12 - 9)	-2666.67
4700 Y (10/1/2013)	15000 DY (10/1/2009)	(4700 - 15000)/(13 - 9)	-2575
5400 YJ (10/1/2014)	15000 DY (10/1/2009)	(5400 - 15000)/(14 - 9)	-1920
11000 DY (10/1/2011)	9000 DY (10/1/2010)	(11000 - 9000)/(11 - 10)	2000
7000 Y (10/1/2012)	9000 DY (10/1/2010)	(7000 - 9000)/(12 - 10)	-1000
4700 Y (10/1/2013)	9000 DY (10/1/2010)	(4700 - 9000)/(13 - 10)	-1433.33
5400 YJ (10/1/2014)	9000 DY (10/1/2010)	(5400 - 9000)/(14 - 10)	-900
7000 Y (10/1/2012)	11000 DY (10/1/2011)	(7000 - 11000)/(12 - 11)	-4000
4700 Y (10/1/2013)	11000 DY (10/1/2011)	(4700 - 11000)/(13 - 11)	-3150
5400 YJ (10/1/2014)	11000 DY (10/1/2011)	(5400 - 11000)/(14 - 11)	-1866.67
4700 Y (10/1/2013)	7000 Y (10/1/2012)	(4700 - 7000)/(13 - 12)	-2300
5400 YJ (10/1/2014)	7000 Y (10/1/2012)	(5400 - 7000)/(14 - 12)	-800
5400 YJ (10/1/2014)	4700 Y (10/1/2013)	(5400 - 4700)/(14 - 13)	700

Number of Q values = 91

Ordered Q Values

n	Q
1	-6000
2	-4000
3	-3900
4	-3500
5	-3150
6	-3100
7	-3000
8	-2700
9	-2666.67
10	-2575
11	-2300
12	-2000
13	-1920
14	-1866.67
15	-1666.67
16	-1550
17	-1450
18	-1433.33
19	-1400
20	-1275
21	-1266.67
22	-1260
23	-1228.57
24	-1200
25	-1183.33
26	-1137.5
27	-1070
28	-1033.33
29	-1000
30	-1000
31	-1000
32	-987.5
33	-933.333
34	-933.333
35	-900
36	-830
37	-825
38	-809.091
39	-807.692
40	-800
41	-800
42	-800
43	-766.667
44	-750
45	-742.857
46	-728.571
47	-720
48	-700
49	-700
50	-690.909
51	-666.667
52	-663.636

53	-571.429
54	-562.5
55	-550
56	-533.333
57	-525
58	-500
59	-490
60	-483.333
61	-400
62	-375
63	-316.667
64	-266.667
65	-250
66	-225
67	-220
68	-200
69	-166.667
70	-112.5
71	-111.111
72	0
73	66.6667
74	200
75	220
76	250
77	333.333
78	400
79	428.571
80	500
81	550
82	600
83	700
84	700
85	1000
86	1700
87	2000
88	2050
89	3100
90	4000
91	4100

Sen's Estimator (Median Q) is -728.571

Tied Group	Value	Members
1	11000	2

Time Period	Observations
10/1/2001	1
10/1/2002	1
10/1/2003	1
10/1/2004	1
10/1/2005	1
10/1/2006	1
10/1/2007	1
10/1/2008	1
10/1/2009	1
10/1/2010	1
10/1/2011	1
10/1/2012	1

10/1/2013 1
10/1/2014 1
There are 0 time periods with multiple data

A = 18
B = 0
C = 0
D = 0
E = 2
F = 0
a = 6006
b = 19656
c = 364
Group Variance = 332.667
For 80% confidence interval (two-tailed), Z at (1-0.8)/2 = 1.28155
C = 23.3744
M1 = (91 - 23.3744)/2.0 = 33.8128
M2 = (91 + 23.3744)/2.0 + 1 = 58.1872
Lower limit is -933.333 = Q(34)
Upper limit is -500 = Q(58)
-500 < 0 indicating a downward trend in data.

Sen's Slope Analysis

Parameter: cis12DCE

Location: 05-735

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

80% Confidence Level

Xj	Xk	(Xj - Xk)/(j-k)	Q
420 (10/1/2002)	189 (10/1/2001)	(420 - 189)/(2 - 1)	231
730 (10/1/2003)	189 (10/1/2001)	(730 - 189)/(3 - 1)	270.5
483 J (10/1/2004)	189 (10/1/2001)	(483 - 189)/(4 - 1)	98
542 J (10/1/2005)	189 (10/1/2001)	(542 - 189)/(5 - 1)	88.25
420 (10/1/2006)	189 (10/1/2001)	(420 - 189)/(6 - 1)	46.2
570 D (10/1/2007)	189 (10/1/2001)	(570 - 189)/(7 - 1)	63.5
340 JD (10/1/2008)	189 (10/1/2001)	(340 - 189)/(8 - 1)	21.5714
340 D (10/1/2009)	189 (10/1/2001)	(340 - 189)/(9 - 1)	18.875
400 D (10/1/2010)	189 (10/1/2001)	(400 - 189)/(10 - 1)	23.4444
280 DJ (10/1/2011)	189 (10/1/2001)	(280 - 189)/(11 - 1)	9.1
240 D (10/1/2012)	189 (10/1/2001)	(240 - 189)/(12 - 1)	4.63636
180 D (10/1/2013)	189 (10/1/2001)	(180 - 189)/(13 - 1)	-0.75
190 D (10/1/2014)	189 (10/1/2001)	(190 - 189)/(14 - 1)	0.0769231
730 (10/1/2003)	420 (10/1/2002)	(730 - 420)/(3 - 2)	310
483 J (10/1/2004)	420 (10/1/2002)	(483 - 420)/(4 - 2)	31.5
542 J (10/1/2005)	420 (10/1/2002)	(542 - 420)/(5 - 2)	40.6667
420 (10/1/2006)	420 (10/1/2002)	(420 - 420)/(6 - 2)	0
570 D (10/1/2007)	420 (10/1/2002)	(570 - 420)/(7 - 2)	30
340 JD (10/1/2008)	420 (10/1/2002)	(340 - 420)/(8 - 2)	-13.3333
340 D (10/1/2009)	420 (10/1/2002)	(340 - 420)/(9 - 2)	-11.4286
400 D (10/1/2010)	420 (10/1/2002)	(400 - 420)/(10 - 2)	-2.5
280 DJ (10/1/2011)	420 (10/1/2002)	(280 - 420)/(11 - 2)	-15.5556
240 D (10/1/2012)	420 (10/1/2002)	(240 - 420)/(12 - 2)	-18
180 D (10/1/2013)	420 (10/1/2002)	(180 - 420)/(13 - 2)	-21.8182
190 D (10/1/2014)	420 (10/1/2002)	(190 - 420)/(14 - 2)	-19.1667
483 J (10/1/2004)	730 (10/1/2003)	(483 - 730)/(4 - 3)	-247
542 J (10/1/2005)	730 (10/1/2003)	(542 - 730)/(5 - 3)	-94
420 (10/1/2006)	730 (10/1/2003)	(420 - 730)/(6 - 3)	-103.333
570 D (10/1/2007)	730 (10/1/2003)	(570 - 730)/(7 - 3)	-40
340 JD (10/1/2008)	730 (10/1/2003)	(340 - 730)/(8 - 3)	-78
340 D (10/1/2009)	730 (10/1/2003)	(340 - 730)/(9 - 3)	-65
400 D (10/1/2010)	730 (10/1/2003)	(400 - 730)/(10 - 3)	-47.1429
280 DJ (10/1/2011)	730 (10/1/2003)	(280 - 730)/(11 - 3)	-56.25
240 D (10/1/2012)	730 (10/1/2003)	(240 - 730)/(12 - 3)	-54.4444
180 D (10/1/2013)	730 (10/1/2003)	(180 - 730)/(13 - 3)	-55
190 D (10/1/2014)	730 (10/1/2003)	(190 - 730)/(14 - 3)	-49.0909
542 J (10/1/2005)	483 J (10/1/2004)	(542 - 483)/(5 - 4)	59
420 (10/1/2006)	483 J (10/1/2004)	(420 - 483)/(6 - 4)	-31.5
570 D (10/1/2007)	483 J (10/1/2004)	(570 - 483)/(7 - 4)	29
340 JD (10/1/2008)	483 J (10/1/2004)	(340 - 483)/(8 - 4)	-35.75
340 D (10/1/2009)	483 J (10/1/2004)	(340 - 483)/(9 - 4)	-28.6
400 D (10/1/2010)	483 J (10/1/2004)	(400 - 483)/(10 - 4)	-13.8333
280 DJ (10/1/2011)	483 J (10/1/2004)	(280 - 483)/(11 - 4)	-29
240 D (10/1/2012)	483 J (10/1/2004)	(240 - 483)/(12 - 4)	-30.375

180 D (10/1/2013)	483 J (10/1/2004)	(180 - 483)/(13 - 4)	-33.6667
190 D (10/1/2014)	483 J (10/1/2004)	(190 - 483)/(14 - 4)	-29.3
420 (10/1/2006)	542 J (10/1/2005)	(420 - 542)/(6 - 5)	-122
570 D (10/1/2007)	542 J (10/1/2005)	(570 - 542)/(7 - 5)	14
340 JD (10/1/2008)	542 J (10/1/2005)	(340 - 542)/(8 - 5)	-67.3333
340 D (10/1/2009)	542 J (10/1/2005)	(340 - 542)/(9 - 5)	-50.5
400 D (10/1/2010)	542 J (10/1/2005)	(400 - 542)/(10 - 5)	-28.4
280 DJ (10/1/2011)	542 J (10/1/2005)	(280 - 542)/(11 - 5)	-43.6667
240 D (10/1/2012)	542 J (10/1/2005)	(240 - 542)/(12 - 5)	-43.1429
180 D (10/1/2013)	542 J (10/1/2005)	(180 - 542)/(13 - 5)	-45.25
190 D (10/1/2014)	542 J (10/1/2005)	(190 - 542)/(14 - 5)	-39.1111
570 D (10/1/2007)	420 (10/1/2006)	(570 - 420)/(7 - 6)	150
340 JD (10/1/2008)	420 (10/1/2006)	(340 - 420)/(8 - 6)	-40
340 D (10/1/2009)	420 (10/1/2006)	(340 - 420)/(9 - 6)	-26.6667
400 D (10/1/2010)	420 (10/1/2006)	(400 - 420)/(10 - 6)	-5
280 DJ (10/1/2011)	420 (10/1/2006)	(280 - 420)/(11 - 6)	-28
240 D (10/1/2012)	420 (10/1/2006)	(240 - 420)/(12 - 6)	-30
180 D (10/1/2013)	420 (10/1/2006)	(180 - 420)/(13 - 6)	-34.2857
190 D (10/1/2014)	420 (10/1/2006)	(190 - 420)/(14 - 6)	-28.75
340 JD (10/1/2008)	570 D (10/1/2007)	(340 - 570)/(8 - 7)	-230
340 D (10/1/2009)	570 D (10/1/2007)	(340 - 570)/(9 - 7)	-115
400 D (10/1/2010)	570 D (10/1/2007)	(400 - 570)/(10 - 7)	-56.6667
280 DJ (10/1/2011)	570 D (10/1/2007)	(280 - 570)/(11 - 7)	-72.5
240 D (10/1/2012)	570 D (10/1/2007)	(240 - 570)/(12 - 7)	-66
180 D (10/1/2013)	570 D (10/1/2007)	(180 - 570)/(13 - 7)	-65
190 D (10/1/2014)	570 D (10/1/2007)	(190 - 570)/(14 - 7)	-54.2857
340 D (10/1/2009)	340 JD (10/1/2008)	(340 - 340)/(9 - 8)	0
400 D (10/1/2010)	340 JD (10/1/2008)	(400 - 340)/(10 - 8)	30
280 DJ (10/1/2011)	340 JD (10/1/2008)	(280 - 340)/(11 - 8)	-20
240 D (10/1/2012)	340 JD (10/1/2008)	(240 - 340)/(12 - 8)	-25
180 D (10/1/2013)	340 JD (10/1/2008)	(180 - 340)/(13 - 8)	-32
190 D (10/1/2014)	340 JD (10/1/2008)	(190 - 340)/(14 - 8)	-25
400 D (10/1/2010)	340 D (10/1/2009)	(400 - 340)/(10 - 9)	60
280 DJ (10/1/2011)	340 D (10/1/2009)	(280 - 340)/(11 - 9)	-30
240 D (10/1/2012)	340 D (10/1/2009)	(240 - 340)/(12 - 9)	-33.3333
180 D (10/1/2013)	340 D (10/1/2009)	(180 - 340)/(13 - 9)	-40
190 D (10/1/2014)	340 D (10/1/2009)	(190 - 340)/(14 - 9)	-30
280 DJ (10/1/2011)	400 D (10/1/2010)	(280 - 400)/(11 - 10)	-120
240 D (10/1/2012)	400 D (10/1/2010)	(240 - 400)/(12 - 10)	-80
180 D (10/1/2013)	400 D (10/1/2010)	(180 - 400)/(13 - 10)	-73.3333
190 D (10/1/2014)	400 D (10/1/2010)	(190 - 400)/(14 - 10)	-52.5
240 D (10/1/2012)	280 DJ (10/1/2011)	(240 - 280)/(12 - 11)	-40
180 D (10/1/2013)	280 DJ (10/1/2011)	(180 - 280)/(13 - 11)	-50
190 D (10/1/2014)	280 DJ (10/1/2011)	(190 - 280)/(14 - 11)	-30
180 D (10/1/2013)	240 D (10/1/2012)	(180 - 240)/(13 - 12)	-60
190 D (10/1/2014)	240 D (10/1/2012)	(190 - 240)/(14 - 12)	-25
190 D (10/1/2014)	180 D (10/1/2013)	(190 - 180)/(14 - 13)	10

Number of Q values = 91

Ordered Q Values

n	Q
1	-247
2	-230
3	-122
4	-120
5	-115
6	-103.333
7	-94
8	-80
9	-78
10	-73.3333
11	-72.5
12	-67.3333
13	-66
14	-65
15	-65
16	-60
17	-56.6667
18	-56.25
19	-55
20	-54.4444
21	-54.2857
22	-52.5
23	-50.5
24	-50
25	-49.0909
26	-47.1429
27	-45.25
28	-43.6667
29	-43.1429
30	-40
31	-40
32	-40
33	-40
34	-39.1111
35	-35.75
36	-34.2857
37	-33.6667
38	-33.3333
39	-32
40	-31.5
41	-30.375
42	-30
43	-30
44	-30
45	-30
46	-29.3
47	-29
48	-28.75
49	-28.6
50	-28.4
51	-28
52	-26.6667

53	-25
54	-25
55	-25
56	-21.8182
57	-20
58	-19.1667
59	-18
60	-15.5556
61	-13.8333
62	-13.3333
63	-11.4286
64	-5
65	-2.5
66	-0.75
67	0
68	0
69	0.0769231
70	4.63636
71	9.1
72	10
73	14
74	18.875
75	21.5714
76	23.4444
77	29
78	30
79	30
80	31.5
81	40.6667
82	46.2
83	59
84	60
85	63.5
86	88.25
87	98
88	150
89	231
90	270.5
91	310

Sen's Estimator (Median Q) is -29.3

Tied Group	Value	Members
1	420	2
2	340	2

Time Period	Observations
10/1/2001	1
10/1/2002	1
10/1/2003	1
10/1/2004	1
10/1/2005	1
10/1/2006	1
10/1/2007	1
10/1/2008	1
10/1/2009	1
10/1/2010	1
10/1/2011	1

10/1/2012	1
10/1/2013	1
10/1/2014	1

There are 0 time periods with multiple data

A = 36
B = 0
C = 0
D = 0
E = 4
F = 0
a = 6006
b = 19656
c = 364
Group Variance = 331.667
For 80% confidence interval (two-tailed), Z at (1-0.8)/2 = 1.28155
C = 23.3392
M1 = (91 - 23.3392)/2.0 = 33.8304
M2 = (91 + 23.3392)/2.0 + 1 = 58.1696
Lower limit is -39.1111 = Q(34)
Upper limit is -19.1667 = Q(58)
-19.1667 < 0 indicating a downward trend in data.

Sen's Slope Analysis

Parameter: VinylChloride

Location: 05-735

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

80% Confidence Level

Xj	Xk	(Xj - Xk)/(j-k)	Q
5.6 J (10/1/2002)	4.18 (10/1/2001)	(5.6 - 4.18)/(2 - 1)	1.42
7 (10/1/2003)	4.18 (10/1/2001)	(7 - 4.18)/(3 - 1)	1.41
6.7 J (10/1/2004)	4.18 (10/1/2001)	(6.7 - 4.18)/(4 - 1)	0.84
7.2 J (10/1/2005)	4.18 (10/1/2001)	(7.2 - 4.18)/(5 - 1)	0.755
7.4 (10/1/2006)	4.18 (10/1/2001)	(7.4 - 4.18)/(6 - 1)	0.644
3.4 D (10/1/2007)	4.18 (10/1/2001)	(3.4 - 4.18)/(7 - 1)	-0.13
6.1 (10/1/2008)	4.18 (10/1/2001)	(6.1 - 4.18)/(8 - 1)	0.274286
5.4 (10/1/2009)	4.18 (10/1/2001)	(5.4 - 4.18)/(9 - 1)	0.1525
4.3 (10/1/2010)	4.18 (10/1/2001)	(4.3 - 4.18)/(10 - 1)	0.0133333
2.8 (10/1/2011)	4.18 (10/1/2001)	(2.8 - 4.18)/(11 - 1)	-0.138
2.7 (10/1/2012)	4.18 (10/1/2001)	(2.7 - 4.18)/(12 - 1)	-0.134545
3.2 (10/1/2013)	4.18 (10/1/2001)	(3.2 - 4.18)/(13 - 1)	-0.0816667
3.3 (10/1/2014)	4.18 (10/1/2001)	(3.3 - 4.18)/(14 - 1)	-0.0676923
7 (10/1/2003)	5.6 J (10/1/2002)	(7 - 5.6)/(3 - 2)	1.4
6.7 J (10/1/2004)	5.6 J (10/1/2002)	(6.7 - 5.6)/(4 - 2)	0.55
7.2 J (10/1/2005)	5.6 J (10/1/2002)	(7.2 - 5.6)/(5 - 2)	0.533333
7.4 (10/1/2006)	5.6 J (10/1/2002)	(7.4 - 5.6)/(6 - 2)	0.45
3.4 D (10/1/2007)	5.6 J (10/1/2002)	(3.4 - 5.6)/(7 - 2)	-0.44
6.1 (10/1/2008)	5.6 J (10/1/2002)	(6.1 - 5.6)/(8 - 2)	0.0833333
5.4 (10/1/2009)	5.6 J (10/1/2002)	(5.4 - 5.6)/(9 - 2)	-0.0285714
4.3 (10/1/2010)	5.6 J (10/1/2002)	(4.3 - 5.6)/(10 - 2)	-0.1625
2.8 (10/1/2011)	5.6 J (10/1/2002)	(2.8 - 5.6)/(11 - 2)	-0.311111
2.7 (10/1/2012)	5.6 J (10/1/2002)	(2.7 - 5.6)/(12 - 2)	-0.29
3.2 (10/1/2013)	5.6 J (10/1/2002)	(3.2 - 5.6)/(13 - 2)	-0.218182
3.3 (10/1/2014)	5.6 J (10/1/2002)	(3.3 - 5.6)/(14 - 2)	-0.191667
6.7 J (10/1/2004)	7 (10/1/2003)	(6.7 - 7)/(4 - 3)	-0.3
7.2 J (10/1/2005)	7 (10/1/2003)	(7.2 - 7)/(5 - 3)	0.1
7.4 (10/1/2006)	7 (10/1/2003)	(7.4 - 7)/(6 - 3)	0.133333
3.4 D (10/1/2007)	7 (10/1/2003)	(3.4 - 7)/(7 - 3)	-0.9
6.1 (10/1/2008)	7 (10/1/2003)	(6.1 - 7)/(8 - 3)	-0.18
5.4 (10/1/2009)	7 (10/1/2003)	(5.4 - 7)/(9 - 3)	-0.266667
4.3 (10/1/2010)	7 (10/1/2003)	(4.3 - 7)/(10 - 3)	-0.385714
2.8 (10/1/2011)	7 (10/1/2003)	(2.8 - 7)/(11 - 3)	-0.525
2.7 (10/1/2012)	7 (10/1/2003)	(2.7 - 7)/(12 - 3)	-0.477778
3.2 (10/1/2013)	7 (10/1/2003)	(3.2 - 7)/(13 - 3)	-0.38
3.3 (10/1/2014)	7 (10/1/2003)	(3.3 - 7)/(14 - 3)	-0.336364
7.2 J (10/1/2005)	6.7 J (10/1/2004)	(7.2 - 6.7)/(5 - 4)	0.5
7.4 (10/1/2006)	6.7 J (10/1/2004)	(7.4 - 6.7)/(6 - 4)	0.35
3.4 D (10/1/2007)	6.7 J (10/1/2004)	(3.4 - 6.7)/(7 - 4)	-1.1
6.1 (10/1/2008)	6.7 J (10/1/2004)	(6.1 - 6.7)/(8 - 4)	-0.15
5.4 (10/1/2009)	6.7 J (10/1/2004)	(5.4 - 6.7)/(9 - 4)	-0.26
4.3 (10/1/2010)	6.7 J (10/1/2004)	(4.3 - 6.7)/(10 - 4)	-0.4
2.8 (10/1/2011)	6.7 J (10/1/2004)	(2.8 - 6.7)/(11 - 4)	-0.557143
2.7 (10/1/2012)	6.7 J (10/1/2004)	(2.7 - 6.7)/(12 - 4)	-0.5

3.2 (10/1/2013)	6.7 J (10/1/2004)	(3.2 - 6.7)/(13 - 4)	-0.388889
3.3 (10/1/2014)	6.7 J (10/1/2004)	(3.3 - 6.7)/(14 - 4)	-0.34
7.4 (10/1/2006)	7.2 J (10/1/2005)	(7.4 - 7.2)/(6 - 5)	0.2
3.4 D (10/1/2007)	7.2 J (10/1/2005)	(3.4 - 7.2)/(7 - 5)	-1.9
6.1 (10/1/2008)	7.2 J (10/1/2005)	(6.1 - 7.2)/(8 - 5)	-0.366667
5.4 (10/1/2009)	7.2 J (10/1/2005)	(5.4 - 7.2)/(9 - 5)	-0.45
4.3 (10/1/2010)	7.2 J (10/1/2005)	(4.3 - 7.2)/(10 - 5)	-0.58
2.8 (10/1/2011)	7.2 J (10/1/2005)	(2.8 - 7.2)/(11 - 5)	-0.733333
2.7 (10/1/2012)	7.2 J (10/1/2005)	(2.7 - 7.2)/(12 - 5)	-0.642857
3.2 (10/1/2013)	7.2 J (10/1/2005)	(3.2 - 7.2)/(13 - 5)	-0.5
3.3 (10/1/2014)	7.2 J (10/1/2005)	(3.3 - 7.2)/(14 - 5)	-0.433333
3.4 D (10/1/2007)	7.4 (10/1/2006)	(3.4 - 7.4)/(7 - 6)	-4
6.1 (10/1/2008)	7.4 (10/1/2006)	(6.1 - 7.4)/(8 - 6)	-0.65
5.4 (10/1/2009)	7.4 (10/1/2006)	(5.4 - 7.4)/(9 - 6)	-0.666667
4.3 (10/1/2010)	7.4 (10/1/2006)	(4.3 - 7.4)/(10 - 6)	-0.775
2.8 (10/1/2011)	7.4 (10/1/2006)	(2.8 - 7.4)/(11 - 6)	-0.92
2.7 (10/1/2012)	7.4 (10/1/2006)	(2.7 - 7.4)/(12 - 6)	-0.783333
3.2 (10/1/2013)	7.4 (10/1/2006)	(3.2 - 7.4)/(13 - 6)	-0.6
3.3 (10/1/2014)	7.4 (10/1/2006)	(3.3 - 7.4)/(14 - 6)	-0.5125
6.1 (10/1/2008)	3.4 D (10/1/2007)	(6.1 - 3.4)/(8 - 7)	2.7
5.4 (10/1/2009)	3.4 D (10/1/2007)	(5.4 - 3.4)/(9 - 7)	1
4.3 (10/1/2010)	3.4 D (10/1/2007)	(4.3 - 3.4)/(10 - 7)	0.3
2.8 (10/1/2011)	3.4 D (10/1/2007)	(2.8 - 3.4)/(11 - 7)	-0.15
2.7 (10/1/2012)	3.4 D (10/1/2007)	(2.7 - 3.4)/(12 - 7)	-0.14
3.2 (10/1/2013)	3.4 D (10/1/2007)	(3.2 - 3.4)/(13 - 7)	-0.0333333
3.3 (10/1/2014)	3.4 D (10/1/2007)	(3.3 - 3.4)/(14 - 7)	-0.0142857
5.4 (10/1/2009)	6.1 (10/1/2008)	(5.4 - 6.1)/(9 - 8)	-0.7
4.3 (10/1/2010)	6.1 (10/1/2008)	(4.3 - 6.1)/(10 - 8)	-0.9
2.8 (10/1/2011)	6.1 (10/1/2008)	(2.8 - 6.1)/(11 - 8)	-1.1
2.7 (10/1/2012)	6.1 (10/1/2008)	(2.7 - 6.1)/(12 - 8)	-0.85
3.2 (10/1/2013)	6.1 (10/1/2008)	(3.2 - 6.1)/(13 - 8)	-0.58
3.3 (10/1/2014)	6.1 (10/1/2008)	(3.3 - 6.1)/(14 - 8)	-0.466667
4.3 (10/1/2010)	5.4 (10/1/2009)	(4.3 - 5.4)/(10 - 9)	-1.1
2.8 (10/1/2011)	5.4 (10/1/2009)	(2.8 - 5.4)/(11 - 9)	-1.3
2.7 (10/1/2012)	5.4 (10/1/2009)	(2.7 - 5.4)/(12 - 9)	-0.9
3.2 (10/1/2013)	5.4 (10/1/2009)	(3.2 - 5.4)/(13 - 9)	-0.55
3.3 (10/1/2014)	5.4 (10/1/2009)	(3.3 - 5.4)/(14 - 9)	-0.42
2.8 (10/1/2011)	4.3 (10/1/2010)	(2.8 - 4.3)/(11 - 10)	-1.5
2.7 (10/1/2012)	4.3 (10/1/2010)	(2.7 - 4.3)/(12 - 10)	-0.8
3.2 (10/1/2013)	4.3 (10/1/2010)	(3.2 - 4.3)/(13 - 10)	-0.366667
3.3 (10/1/2014)	4.3 (10/1/2010)	(3.3 - 4.3)/(14 - 10)	-0.25
2.7 (10/1/2012)	2.8 (10/1/2011)	(2.7 - 2.8)/(12 - 11)	-0.1
3.2 (10/1/2013)	2.8 (10/1/2011)	(3.2 - 2.8)/(13 - 11)	0.2
3.3 (10/1/2014)	2.8 (10/1/2011)	(3.3 - 2.8)/(14 - 11)	0.166667
3.2 (10/1/2013)	2.7 (10/1/2012)	(3.2 - 2.7)/(13 - 12)	0.5
3.3 (10/1/2014)	2.7 (10/1/2012)	(3.3 - 2.7)/(14 - 12)	0.3
3.3 (10/1/2014)	3.2 (10/1/2013)	(3.3 - 3.2)/(14 - 13)	0.1

Number of Q values = 91

Ordered Q Values

n	Q
1	-4
2	-1.9
3	-1.5
4	-1.3
5	-1.1
6	-1.1
7	-1.1
8	-0.92
9	-0.9
10	-0.9
11	-0.9
12	-0.85
13	-0.8
14	-0.783333
15	-0.775
16	-0.733333
17	-0.7
18	-0.666667
19	-0.65
20	-0.642857
21	-0.6
22	-0.58
23	-0.58
24	-0.557143
25	-0.55
26	-0.525
27	-0.5125
28	-0.5
29	-0.5
30	-0.477778
31	-0.466667
32	-0.45
33	-0.44
34	-0.433333
35	-0.42
36	-0.4
37	-0.388889
38	-0.385714
39	-0.38
40	-0.366667
41	-0.366667
42	-0.34
43	-0.336364
44	-0.311111
45	-0.3
46	-0.29
47	-0.266667
48	-0.26
49	-0.25
50	-0.218182
51	-0.191667
52	-0.18

53	-0.1625
54	-0.15
55	-0.15
56	-0.14
57	-0.138
58	-0.134545
59	-0.13
60	-0.1
61	-0.0816667
62	-0.0676923
63	-0.0333333
64	-0.0285714
65	-0.0142857
66	0.0133333
67	0.0833333
68	0.1
69	0.1
70	0.133333
71	0.1525
72	0.166667
73	0.2
74	0.2
75	0.274286
76	0.3
77	0.3
78	0.35
79	0.45
80	0.5
81	0.5
82	0.533333
83	0.55
84	0.644
85	0.755
86	0.84
87	1
88	1.4
89	1.41
90	1.42
91	2.7

Sen's Estimator (Median Q) is -0.29

Time Period	Observations
10/1/2001	1
10/1/2002	1
10/1/2003	1
10/1/2004	1
10/1/2005	1
10/1/2006	1
10/1/2007	1
10/1/2008	1
10/1/2009	1
10/1/2010	1
10/1/2011	1
10/1/2012	1
10/1/2013	1
10/1/2014	1

There are 0 time periods with multiple data

A = 0
B = 0
C = 0
D = 0
E = 0
F = 0
a = 6006
b = 19656
c = 364
Group Variance = 333.667
For 80% confidence interval (two-tailed), Z at (1-0.8)/2 = 1.28155
C = 23.4095
M1 = (91 - 23.4095)/2.0 = 33.7952
M2 = (91 + 23.4095)/2.0 + 1 = 58.2048
Lower limit is -0.433333 = Q(34)
Upper limit is -0.134545 = Q(58)
-0.134545 < 0 indicating a downward trend in data.

Sen's Slope Analysis

Parameter: PCE

Location: 55-145

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

80% Confidence Level

Xj	Xk	(Xj - Xk)/(j-k)	Q
130 (10/1/2002)	180 (10/1/2001)	(130 - 180)/(2 - 1)	-50
170 (10/1/2003)	180 (10/1/2001)	(170 - 180)/(3 - 1)	-5
112 (10/1/2004)	180 (10/1/2001)	(112 - 180)/(4 - 1)	-22.6667
90.3 (10/1/2005)	180 (10/1/2001)	(90.3 - 180)/(5 - 1)	-22.425
110 (10/1/2006)	180 (10/1/2001)	(110 - 180)/(6 - 1)	-14
71 (10/1/2007)	180 (10/1/2001)	(71 - 180)/(7 - 1)	-18.1667
61 (10/1/2008)	180 (10/1/2001)	(61 - 180)/(8 - 1)	-17
57 (10/1/2009)	180 (10/1/2001)	(57 - 180)/(9 - 1)	-15.375
49 (10/1/2010)	180 (10/1/2001)	(49 - 180)/(10 - 1)	-14.5556
39 (10/1/2011)	180 (10/1/2001)	(39 - 180)/(11 - 1)	-14.1
38 (10/1/2013)	180 (10/1/2001)	(38 - 180)/(12 - 1)	-12.9091
57 J (10/1/2014)	180 (10/1/2001)	(57 - 180)/(13 - 1)	-10.25
170 (10/1/2003)	130 (10/1/2002)	(170 - 130)/(3 - 2)	40
112 (10/1/2004)	130 (10/1/2002)	(112 - 130)/(4 - 2)	-9
90.3 (10/1/2005)	130 (10/1/2002)	(90.3 - 130)/(5 - 2)	-13.2333
110 (10/1/2006)	130 (10/1/2002)	(110 - 130)/(6 - 2)	-5
71 (10/1/2007)	130 (10/1/2002)	(71 - 130)/(7 - 2)	-11.8
61 (10/1/2008)	130 (10/1/2002)	(61 - 130)/(8 - 2)	-11.5
57 (10/1/2009)	130 (10/1/2002)	(57 - 130)/(9 - 2)	-10.4286
49 (10/1/2010)	130 (10/1/2002)	(49 - 130)/(10 - 2)	-10.125
39 (10/1/2011)	130 (10/1/2002)	(39 - 130)/(11 - 2)	-10.1111
38 (10/1/2013)	130 (10/1/2002)	(38 - 130)/(12 - 2)	-9.2
57 J (10/1/2014)	130 (10/1/2002)	(57 - 130)/(13 - 2)	-6.63636
112 (10/1/2004)	170 (10/1/2003)	(112 - 170)/(4 - 3)	-58
90.3 (10/1/2005)	170 (10/1/2003)	(90.3 - 170)/(5 - 3)	-39.85
110 (10/1/2006)	170 (10/1/2003)	(110 - 170)/(6 - 3)	-20
71 (10/1/2007)	170 (10/1/2003)	(71 - 170)/(7 - 3)	-24.75
61 (10/1/2008)	170 (10/1/2003)	(61 - 170)/(8 - 3)	-21.8
57 (10/1/2009)	170 (10/1/2003)	(57 - 170)/(9 - 3)	-18.8333
49 (10/1/2010)	170 (10/1/2003)	(49 - 170)/(10 - 3)	-17.2857
39 (10/1/2011)	170 (10/1/2003)	(39 - 170)/(11 - 3)	-16.375
38 (10/1/2013)	170 (10/1/2003)	(38 - 170)/(12 - 3)	-14.6667
57 J (10/1/2014)	170 (10/1/2003)	(57 - 170)/(13 - 3)	-11.3
90.3 (10/1/2005)	112 (10/1/2004)	(90.3 - 112)/(5 - 4)	-21.7
110 (10/1/2006)	112 (10/1/2004)	(110 - 112)/(6 - 4)	-1
71 (10/1/2007)	112 (10/1/2004)	(71 - 112)/(7 - 4)	-13.6667
61 (10/1/2008)	112 (10/1/2004)	(61 - 112)/(8 - 4)	-12.75
57 (10/1/2009)	112 (10/1/2004)	(57 - 112)/(9 - 4)	-11
49 (10/1/2010)	112 (10/1/2004)	(49 - 112)/(10 - 4)	-10.5
39 (10/1/2011)	112 (10/1/2004)	(39 - 112)/(11 - 4)	-10.4286
38 (10/1/2013)	112 (10/1/2004)	(38 - 112)/(12 - 4)	-9.25
57 J (10/1/2014)	112 (10/1/2004)	(57 - 112)/(13 - 4)	-6.11111
110 (10/1/2006)	90.3 (10/1/2005)	(110 - 90.3)/(6 - 5)	19.7

71 (10/1/2007)	90.3 (10/1/2005)	(71 - 90.3)/(7 - 5)	-9.65
61 (10/1/2008)	90.3 (10/1/2005)	(61 - 90.3)/(8 - 5)	-9.76667
57 (10/1/2009)	90.3 (10/1/2005)	(57 - 90.3)/(9 - 5)	-8.325
49 (10/1/2010)	90.3 (10/1/2005)	(49 - 90.3)/(10 - 5)	-8.26
39 (10/1/2011)	90.3 (10/1/2005)	(39 - 90.3)/(11 - 5)	-8.55
38 (10/1/2013)	90.3 (10/1/2005)	(38 - 90.3)/(12 - 5)	-7.47143
57 J (10/1/2014)	90.3 (10/1/2005)	(57 - 90.3)/(13 - 5)	-4.1625
71 (10/1/2007)	110 (10/1/2006)	(71 - 110)/(7 - 6)	-39
61 (10/1/2008)	110 (10/1/2006)	(61 - 110)/(8 - 6)	-24.5
57 (10/1/2009)	110 (10/1/2006)	(57 - 110)/(9 - 6)	-17.6667
49 (10/1/2010)	110 (10/1/2006)	(49 - 110)/(10 - 6)	-15.25
39 (10/1/2011)	110 (10/1/2006)	(39 - 110)/(11 - 6)	-14.2
38 (10/1/2013)	110 (10/1/2006)	(38 - 110)/(12 - 6)	-12
57 J (10/1/2014)	110 (10/1/2006)	(57 - 110)/(13 - 6)	-7.57143
61 (10/1/2008)	71 (10/1/2007)	(61 - 71)/(8 - 7)	-10
57 (10/1/2009)	71 (10/1/2007)	(57 - 71)/(9 - 7)	-7
49 (10/1/2010)	71 (10/1/2007)	(49 - 71)/(10 - 7)	-7.33333
39 (10/1/2011)	71 (10/1/2007)	(39 - 71)/(11 - 7)	-8
38 (10/1/2013)	71 (10/1/2007)	(38 - 71)/(12 - 7)	-6.6
57 J (10/1/2014)	71 (10/1/2007)	(57 - 71)/(13 - 7)	-2.33333
57 (10/1/2009)	61 (10/1/2008)	(57 - 61)/(9 - 8)	-4
49 (10/1/2010)	61 (10/1/2008)	(49 - 61)/(10 - 8)	-6
39 (10/1/2011)	61 (10/1/2008)	(39 - 61)/(11 - 8)	-7.33333
38 (10/1/2013)	61 (10/1/2008)	(38 - 61)/(12 - 8)	-5.75
57 J (10/1/2014)	61 (10/1/2008)	(57 - 61)/(13 - 8)	-0.8
49 (10/1/2010)	57 (10/1/2009)	(49 - 57)/(10 - 9)	-8
39 (10/1/2011)	57 (10/1/2009)	(39 - 57)/(11 - 9)	-9
38 (10/1/2013)	57 (10/1/2009)	(38 - 57)/(12 - 9)	-6.33333
57 J (10/1/2014)	57 (10/1/2009)	(57 - 57)/(13 - 9)	0
39 (10/1/2011)	49 (10/1/2010)	(39 - 49)/(11 - 10)	-10
38 (10/1/2013)	49 (10/1/2010)	(38 - 49)/(12 - 10)	-5.5
57 J (10/1/2014)	49 (10/1/2010)	(57 - 49)/(13 - 10)	2.66667
38 (10/1/2013)	39 (10/1/2011)	(38 - 39)/(12 - 11)	-1
57 J (10/1/2014)	39 (10/1/2011)	(57 - 39)/(13 - 11)	9
57 J (10/1/2014)	38 (10/1/2013)	(57 - 38)/(13 - 12)	19

Number of Q values = 78

Ordered Q Values

n	Q
1	-58
2	-50
3	-39.85
4	-39
5	-24.75
6	-24.5
7	-22.6667
8	-22.425
9	-21.8

10	-21.7
11	-20
12	-18.8333
13	-18.1667
14	-17.6667
15	-17.2857
16	-17
17	-16.375
18	-15.375
19	-15.25
20	-14.6667
21	-14.5556
22	-14.2
23	-14.1
24	-14
25	-13.6667
26	-13.2333
27	-12.9091
28	-12.75
29	-12
30	-11.8
31	-11.5
32	-11.3
33	-11
34	-10.5
35	-10.4286
36	-10.4286
37	-10.25
38	-10.125
39	-10.1111
40	-10
41	-10
42	-9.76667
43	-9.65
44	-9.25
45	-9.2
46	-9
47	-9
48	-8.55
49	-8.325
50	-8.26
51	-8
52	-8
53	-7.57143
54	-7.47143
55	-7.33333
56	-7.33333
57	-7
58	-6.63636
59	-6.6
60	-6.33333
61	-6.11111
62	-6
63	-5.75
64	-5.5
65	-5
66	-5

67	-4.1625
68	-4
69	-2.33333
70	-1
71	-1
72	-0.8
73	0
74	2.66667
75	9
76	19
77	19.7
78	40

Sen's Estimator (Median Q) is -10.0556

Tied Group	Value	Members
1	57	2

Time Period	Observations
10/1/2001	1
10/1/2002	1
10/1/2003	1
10/1/2004	1
10/1/2005	1
10/1/2006	1
10/1/2007	1
10/1/2008	1
10/1/2009	1
10/1/2010	1
10/1/2011	1
10/1/2013	1
10/1/2014	1

There are 0 time periods with multiple data

A = 18
B = 0
C = 0
D = 0
E = 2
F = 0
a = 4836
b = 15444
c = 312
Group Variance = 267.667
For 80% confidence interval (two-tailed), Z at (1-0.8)/2 = 1.28155
C = 20.9668
M1 = (78 - 20.9668)/2.0 = 28.5166
M2 = (78 + 20.9668)/2.0 + 1 = 50.4834
Lower limit is -12 = Q(29)
Upper limit is -8.26 = Q(50)
-8.26 < 0 indicating a downward trend in data.

Sen's Slope Analysis

Parameter: GRO

Location: 14-113

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

80% Confidence Level

Xj	Xk	(Xj - Xk)/(j-k)	Q
6880 J (10/1/2004)	2000 (10/1/2003)	(6880 - 2000)/(2 - 1)	4880
3900 J (10/1/2005)	2000 (10/1/2003)	(3900 - 2000)/(3 - 1)	950
6300 (10/1/2006)	2000 (10/1/2003)	(6300 - 2000)/(4 - 1)	1433.33
3900 Z (10/1/2007)	2000 (10/1/2003)	(3900 - 2000)/(5 - 1)	475
2700 Z (10/1/2008)	2000 (10/1/2003)	(2700 - 2000)/(6 - 1)	140
5100 Z (10/1/2009)	2000 (10/1/2003)	(5100 - 2000)/(7 - 1)	516.667
3800 Y (10/1/2010)	2000 (10/1/2003)	(3800 - 2000)/(8 - 1)	257.143
3400 Y (10/1/2011)	2000 (10/1/2003)	(3400 - 2000)/(9 - 1)	175
2000 Y (10/1/2012)	2000 (10/1/2003)	(2000 - 2000)/(10 - 1)	0
2800 Z (10/1/2013)	2000 (10/1/2003)	(2800 - 2000)/(11 - 1)	80
1900 Y (10/1/2014)	2000 (10/1/2003)	(1900 - 2000)/(12 - 1)	-9.09091
3900 J (10/1/2005)	6880 J (10/1/2004)	(3900 - 6880)/(3 - 2)	-2980
6300 (10/1/2006)	6880 J (10/1/2004)	(6300 - 6880)/(4 - 2)	-290
3900 Z (10/1/2007)	6880 J (10/1/2004)	(3900 - 6880)/(5 - 2)	-993.333
2700 Z (10/1/2008)	6880 J (10/1/2004)	(2700 - 6880)/(6 - 2)	-1045
5100 Z (10/1/2009)	6880 J (10/1/2004)	(5100 - 6880)/(7 - 2)	-356
3800 Y (10/1/2010)	6880 J (10/1/2004)	(3800 - 6880)/(8 - 2)	-513.333
3400 Y (10/1/2011)	6880 J (10/1/2004)	(3400 - 6880)/(9 - 2)	-497.143
2000 Y (10/1/2012)	6880 J (10/1/2004)	(2000 - 6880)/(10 - 2)	-610
2800 Z (10/1/2013)	6880 J (10/1/2004)	(2800 - 6880)/(11 - 2)	-453.333
1900 Y (10/1/2014)	6880 J (10/1/2004)	(1900 - 6880)/(12 - 2)	-498
6300 (10/1/2006)	3900 J (10/1/2005)	(6300 - 3900)/(4 - 3)	2400
3900 Z (10/1/2007)	3900 J (10/1/2005)	(3900 - 3900)/(5 - 3)	0
2700 Z (10/1/2008)	3900 J (10/1/2005)	(2700 - 3900)/(6 - 3)	-400
5100 Z (10/1/2009)	3900 J (10/1/2005)	(5100 - 3900)/(7 - 3)	300
3800 Y (10/1/2010)	3900 J (10/1/2005)	(3800 - 3900)/(8 - 3)	-20
3400 Y (10/1/2011)	3900 J (10/1/2005)	(3400 - 3900)/(9 - 3)	-83.3333
2000 Y (10/1/2012)	3900 J (10/1/2005)	(2000 - 3900)/(10 - 3)	-271.429
2800 Z (10/1/2013)	3900 J (10/1/2005)	(2800 - 3900)/(11 - 3)	-137.5
1900 Y (10/1/2014)	3900 J (10/1/2005)	(1900 - 3900)/(12 - 3)	-222.222
3900 Z (10/1/2007)	6300 (10/1/2006)	(3900 - 6300)/(5 - 4)	-2400
2700 Z (10/1/2008)	6300 (10/1/2006)	(2700 - 6300)/(6 - 4)	-1800
5100 Z (10/1/2009)	6300 (10/1/2006)	(5100 - 6300)/(7 - 4)	-400
3800 Y (10/1/2010)	6300 (10/1/2006)	(3800 - 6300)/(8 - 4)	-625
3400 Y (10/1/2011)	6300 (10/1/2006)	(3400 - 6300)/(9 - 4)	-580
2000 Y (10/1/2012)	6300 (10/1/2006)	(2000 - 6300)/(10 - 4)	-716.667
2800 Z (10/1/2013)	6300 (10/1/2006)	(2800 - 6300)/(11 - 4)	-500
1900 Y (10/1/2014)	6300 (10/1/2006)	(1900 - 6300)/(12 - 4)	-550
2700 Z (10/1/2008)	3900 Z (10/1/2007)	(2700 - 3900)/(6 - 5)	-1200
5100 Z (10/1/2009)	3900 Z (10/1/2007)	(5100 - 3900)/(7 - 5)	600
3800 Y (10/1/2010)	3900 Z (10/1/2007)	(3800 - 3900)/(8 - 5)	-33.3333
3400 Y (10/1/2011)	3900 Z (10/1/2007)	(3400 - 3900)/(9 - 5)	-125
2000 Y (10/1/2012)	3900 Z (10/1/2007)	(2000 - 3900)/(10 - 5)	-380

2800 Z (10/1/2013)	3900 Z (10/1/2007)	(2800 - 3900)/(11 - 5)	-183.333
1900 Y (10/1/2014)	3900 Z (10/1/2007)	(1900 - 3900)/(12 - 5)	-285.714
5100 Z (10/1/2009)	2700 Z (10/1/2008)	(5100 - 2700)/(7 - 6)	2400
3800 Y (10/1/2010)	2700 Z (10/1/2008)	(3800 - 2700)/(8 - 6)	550
3400 Y (10/1/2011)	2700 Z (10/1/2008)	(3400 - 2700)/(9 - 6)	233.333
2000 Y (10/1/2012)	2700 Z (10/1/2008)	(2000 - 2700)/(10 - 6)	-175
2800 Z (10/1/2013)	2700 Z (10/1/2008)	(2800 - 2700)/(11 - 6)	20
1900 Y (10/1/2014)	2700 Z (10/1/2008)	(1900 - 2700)/(12 - 6)	-133.333
3800 Y (10/1/2010)	5100 Z (10/1/2009)	(3800 - 5100)/(8 - 7)	-1300
3400 Y (10/1/2011)	5100 Z (10/1/2009)	(3400 - 5100)/(9 - 7)	-850
2000 Y (10/1/2012)	5100 Z (10/1/2009)	(2000 - 5100)/(10 - 7)	-1033.33
2800 Z (10/1/2013)	5100 Z (10/1/2009)	(2800 - 5100)/(11 - 7)	-575
1900 Y (10/1/2014)	5100 Z (10/1/2009)	(1900 - 5100)/(12 - 7)	-640
3400 Y (10/1/2011)	3800 Y (10/1/2010)	(3400 - 3800)/(9 - 8)	-400
2000 Y (10/1/2012)	3800 Y (10/1/2010)	(2000 - 3800)/(10 - 8)	-900
2800 Z (10/1/2013)	3800 Y (10/1/2010)	(2800 - 3800)/(11 - 8)	-333.333
1900 Y (10/1/2014)	3800 Y (10/1/2010)	(1900 - 3800)/(12 - 8)	-475
2000 Y (10/1/2012)	3400 Y (10/1/2011)	(2000 - 3400)/(10 - 9)	-1400
2800 Z (10/1/2013)	3400 Y (10/1/2011)	(2800 - 3400)/(11 - 9)	-300
1900 Y (10/1/2014)	3400 Y (10/1/2011)	(1900 - 3400)/(12 - 9)	-500
2800 Z (10/1/2013)	2000 Y (10/1/2012)	(2800 - 2000)/(11 - 10)	800
1900 Y (10/1/2014)	2000 Y (10/1/2012)	(1900 - 2000)/(12 - 10)	-50
1900 Y (10/1/2014)	2800 Z (10/1/2013)	(1900 - 2800)/(12 - 11)	-900

Number of Q values = 66

Ordered Q Values

n	Q
1	-2980
2	-2400
3	-1800
4	-1400
5	-1300
6	-1200
7	-1045
8	-1033.33
9	-993.333
10	-900
11	-900
12	-850
13	-716.667
14	-640
15	-625
16	-610
17	-580
18	-575
19	-550
20	-513.333
21	-500
22	-500

23	-498
24	-497.143
25	-475
26	-453.333
27	-400
28	-400
29	-400
30	-380
31	-356
32	-333.333
33	-300
34	-290
35	-285.714
36	-271.429
37	-222.222
38	-183.333
39	-175
40	-137.5
41	-133.333
42	-125
43	-83.3333
44	-50
45	-33.3333
46	-20
47	-9.09091
48	0
49	0
50	20
51	80
52	140
53	175
54	233.333
55	257.143
56	300
57	475
58	516.667
59	550
60	600
61	800
62	950
63	1433.33
64	2400
65	2400
66	4880

Sen's Estimator (Median Q) is -295

Tied Group	Value	Members
1	2000	2
2	3900	2

Time Period	Observations
10/1/2003	1
10/1/2004	1
10/1/2005	1
10/1/2006	1
10/1/2007	1
10/1/2008	1

10/1/2009	1
10/1/2010	1
10/1/2011	1
10/1/2012	1
10/1/2013	1
10/1/2014	1

There are 0 time periods with multiple data

A = 36
B = 0
C = 0
D = 0
E = 4
F = 0
a = 3828
b = 11880
c = 264
Group Variance = 210.667
For 80% confidence interval (two-tailed), Z at (1-0.8)/2 = 1.28155
C = 18.6009
M1 = (66 - 18.6009)/2.0 = 23.6996
M2 = (66 + 18.6009)/2.0 + 1 = 43.3004
Lower limit is -497.143 = Q(24)
Upper limit is -83.3333 = Q(43)
-83.3333 < 0 indicating a downward trend in data.

Sen's Slope Analysis

Parameter: Benzene

Location: 14-113

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

80% Confidence Level

Xj	Xk	(Xj - Xk)/(j-k)	Q
30.8 J (10/1/2004)	34 (10/1/2003)	(30.8 - 34)/(2 - 1)	-3.2
22.7 J (10/1/2005)	34 (10/1/2003)	(22.7 - 34)/(3 - 1)	-5.65
16 (10/1/2006)	34 (10/1/2003)	(16 - 34)/(4 - 1)	-6
14 (10/1/2007)	34 (10/1/2003)	(14 - 34)/(5 - 1)	-5
9.6 D (10/1/2008)	34 (10/1/2003)	(9.6 - 34)/(6 - 1)	-4.88
13 D (10/1/2009)	34 (10/1/2003)	(13 - 34)/(7 - 1)	-3.5
12 (10/1/2010)	34 (10/1/2003)	(12 - 34)/(8 - 1)	-3.14286
8.3 (10/1/2011)	34 (10/1/2003)	(8.3 - 34)/(9 - 1)	-3.2125
6.9 J (10/1/2012)	34 (10/1/2003)	(6.9 - 34)/(10 - 1)	-3.01111
6.9 (10/1/2013)	34 (10/1/2003)	(6.9 - 34)/(11 - 1)	-2.71
4.3 (10/1/2014)	34 (10/1/2003)	(4.3 - 34)/(12 - 1)	-2.7
22.7 J (10/1/2005)	30.8 J (10/1/2004)	(22.7 - 30.8)/(3 - 2)	-8.1
16 (10/1/2006)	30.8 J (10/1/2004)	(16 - 30.8)/(4 - 2)	-7.4
14 (10/1/2007)	30.8 J (10/1/2004)	(14 - 30.8)/(5 - 2)	-5.6
9.6 D (10/1/2008)	30.8 J (10/1/2004)	(9.6 - 30.8)/(6 - 2)	-5.3
13 D (10/1/2009)	30.8 J (10/1/2004)	(13 - 30.8)/(7 - 2)	-3.56
12 (10/1/2010)	30.8 J (10/1/2004)	(12 - 30.8)/(8 - 2)	-3.13333
8.3 (10/1/2011)	30.8 J (10/1/2004)	(8.3 - 30.8)/(9 - 2)	-3.21429
6.9 J (10/1/2012)	30.8 J (10/1/2004)	(6.9 - 30.8)/(10 - 2)	-2.9875
6.9 (10/1/2013)	30.8 J (10/1/2004)	(6.9 - 30.8)/(11 - 2)	-2.65556
4.3 (10/1/2014)	30.8 J (10/1/2004)	(4.3 - 30.8)/(12 - 2)	-2.65
16 (10/1/2006)	22.7 J (10/1/2005)	(16 - 22.7)/(4 - 3)	-6.7
14 (10/1/2007)	22.7 J (10/1/2005)	(14 - 22.7)/(5 - 3)	-4.35
9.6 D (10/1/2008)	22.7 J (10/1/2005)	(9.6 - 22.7)/(6 - 3)	-4.36667
13 D (10/1/2009)	22.7 J (10/1/2005)	(13 - 22.7)/(7 - 3)	-2.425
12 (10/1/2010)	22.7 J (10/1/2005)	(12 - 22.7)/(8 - 3)	-2.14
8.3 (10/1/2011)	22.7 J (10/1/2005)	(8.3 - 22.7)/(9 - 3)	-2.4
6.9 J (10/1/2012)	22.7 J (10/1/2005)	(6.9 - 22.7)/(10 - 3)	-2.25714
6.9 (10/1/2013)	22.7 J (10/1/2005)	(6.9 - 22.7)/(11 - 3)	-1.975
4.3 (10/1/2014)	22.7 J (10/1/2005)	(4.3 - 22.7)/(12 - 3)	-2.04444
14 (10/1/2007)	16 (10/1/2006)	(14 - 16)/(5 - 4)	-2
9.6 D (10/1/2008)	16 (10/1/2006)	(9.6 - 16)/(6 - 4)	-3.2
13 D (10/1/2009)	16 (10/1/2006)	(13 - 16)/(7 - 4)	-1
12 (10/1/2010)	16 (10/1/2006)	(12 - 16)/(8 - 4)	-1
8.3 (10/1/2011)	16 (10/1/2006)	(8.3 - 16)/(9 - 4)	-1.54
6.9 J (10/1/2012)	16 (10/1/2006)	(6.9 - 16)/(10 - 4)	-1.51667
6.9 (10/1/2013)	16 (10/1/2006)	(6.9 - 16)/(11 - 4)	-1.3
4.3 (10/1/2014)	16 (10/1/2006)	(4.3 - 16)/(12 - 4)	-1.4625
9.6 D (10/1/2008)	14 (10/1/2007)	(9.6 - 14)/(6 - 5)	-4.4
13 D (10/1/2009)	14 (10/1/2007)	(13 - 14)/(7 - 5)	-0.5
12 (10/1/2010)	14 (10/1/2007)	(12 - 14)/(8 - 5)	-0.666667
8.3 (10/1/2011)	14 (10/1/2007)	(8.3 - 14)/(9 - 5)	-1.425
6.9 J (10/1/2012)	14 (10/1/2007)	(6.9 - 14)/(10 - 5)	-1.42

6.9 (10/1/2013)	14 (10/1/2007)	(6.9 - 14)/(11 - 5)	-1.18333
4.3 (10/1/2014)	14 (10/1/2007)	(4.3 - 14)/(12 - 5)	-1.38571
13 D (10/1/2009)	9.6 D (10/1/2008)	(13 - 9.6)/(7 - 6)	3.4
12 (10/1/2010)	9.6 D (10/1/2008)	(12 - 9.6)/(8 - 6)	1.2
8.3 (10/1/2011)	9.6 D (10/1/2008)	(8.3 - 9.6)/(9 - 6)	-0.433333
6.9 J (10/1/2012)	9.6 D (10/1/2008)	(6.9 - 9.6)/(10 - 6)	-0.675
6.9 (10/1/2013)	9.6 D (10/1/2008)	(6.9 - 9.6)/(11 - 6)	-0.54
4.3 (10/1/2014)	9.6 D (10/1/2008)	(4.3 - 9.6)/(12 - 6)	-0.883333
12 (10/1/2010)	13 D (10/1/2009)	(12 - 13)/(8 - 7)	-1
8.3 (10/1/2011)	13 D (10/1/2009)	(8.3 - 13)/(9 - 7)	-2.35
6.9 J (10/1/2012)	13 D (10/1/2009)	(6.9 - 13)/(10 - 7)	-2.03333
6.9 (10/1/2013)	13 D (10/1/2009)	(6.9 - 13)/(11 - 7)	-1.525
4.3 (10/1/2014)	13 D (10/1/2009)	(4.3 - 13)/(12 - 7)	-1.74
8.3 (10/1/2011)	12 (10/1/2010)	(8.3 - 12)/(9 - 8)	-3.7
6.9 J (10/1/2012)	12 (10/1/2010)	(6.9 - 12)/(10 - 8)	-2.55
6.9 (10/1/2013)	12 (10/1/2010)	(6.9 - 12)/(11 - 8)	-1.7
4.3 (10/1/2014)	12 (10/1/2010)	(4.3 - 12)/(12 - 8)	-1.925
6.9 J (10/1/2012)	8.3 (10/1/2011)	(6.9 - 8.3)/(10 - 9)	-1.4
6.9 (10/1/2013)	8.3 (10/1/2011)	(6.9 - 8.3)/(11 - 9)	-0.7
4.3 (10/1/2014)	8.3 (10/1/2011)	(4.3 - 8.3)/(12 - 9)	-1.33333
6.9 (10/1/2013)	6.9 J (10/1/2012)	(6.9 - 6.9)/(11 - 10)	0
4.3 (10/1/2014)	6.9 J (10/1/2012)	(4.3 - 6.9)/(12 - 10)	-1.3
4.3 (10/1/2014)	6.9 (10/1/2013)	(4.3 - 6.9)/(12 - 11)	-2.6

Number of Q values = 66

Ordered Q Values

n	Q
1	-8.1
2	-7.4
3	-6.7
4	-6
5	-5.65
6	-5.6
7	-5.3
8	-5
9	-4.88
10	-4.4
11	-4.36667
12	-4.35
13	-3.7
14	-3.56
15	-3.5
16	-3.21429
17	-3.2125
18	-3.2
19	-3.2
20	-3.14286
21	-3.13333
22	-3.01111

23	-2.9875
24	-2.71
25	-2.7
26	-2.65556
27	-2.65
28	-2.6
29	-2.55
30	-2.425
31	-2.4
32	-2.35
33	-2.25714
34	-2.14
35	-2.04444
36	-2.03333
37	-2
38	-1.975
39	-1.925
40	-1.74
41	-1.7
42	-1.54
43	-1.525
44	-1.51667
45	-1.4625
46	-1.425
47	-1.42
48	-1.4
49	-1.38571
50	-1.33333
51	-1.3
52	-1.3
53	-1.18333
54	-1
55	-1
56	-1
57	-0.883333
58	-0.7
59	-0.675
60	-0.666667
61	-0.54
62	-0.5
63	-0.433333
64	0
65	1.2
66	3.4

Sen's Estimator (Median Q) is -2.19857

Tied Group	Value	Members
1	6.9	2

Time Period	Observations
10/1/2003	1
10/1/2004	1
10/1/2005	1
10/1/2006	1
10/1/2007	1
10/1/2008	1
10/1/2009	1

10/1/2010	1
10/1/2011	1
10/1/2012	1
10/1/2013	1
10/1/2014	1

There are 0 time periods with multiple data

A = 18
B = 0
C = 0
D = 0
E = 2
F = 0
a = 3828
b = 11880
c = 264
Group Variance = 211.667
For 80% confidence interval (two-tailed), Z at (1-0.8)/2 = 1.28155
C = 18.645
M1 = (66 - 18.645)/2.0 = 23.6775
M2 = (66 + 18.645)/2.0 + 1 = 43.3225
Lower limit is -2.71 = Q(24)
Upper limit is -1.525 = Q(43)
-1.525 < 0 indicating a downward trend in data.

Sen's Slope Analysis

Parameter: Benzene

Location: TFB-MW4B

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

80% Confidence Level

Xj	Xk	(Xj - Xk)/(j-k)	Q
54 (10/1/2001)	ND<10 U (10/1/2000)	(54 - 10)/(2 - 1)	44
50 J (10/1/2002)	ND<10 U (10/1/2000)	(50 - 10)/(3 - 1)	20
73 J (10/1/2003)	ND<10 U (10/1/2000)	(73 - 10)/(4 - 1)	21
69 J (10/1/2004)	ND<10 U (10/1/2000)	(69 - 10)/(5 - 1)	14.75
49.5 J (10/1/2005)	ND<10 U (10/1/2000)	(49.5 - 10)/(6 - 1)	7.9
31 (10/1/2006)	ND<10 U (10/1/2000)	(31 - 10)/(7 - 1)	3.5
39 D (10/1/2007)	ND<10 U (10/1/2000)	(39 - 10)/(8 - 1)	4.14286
29 D (10/1/2008)	ND<10 U (10/1/2000)	(29 - 10)/(9 - 1)	2.375
31 D (10/1/2009)	ND<10 U (10/1/2000)	(31 - 10)/(10 - 1)	2.33333
30 D (10/1/2010)	ND<10 U (10/1/2000)	(30 - 10)/(11 - 1)	2
23 D (10/1/2011)	ND<10 U (10/1/2000)	(23 - 10)/(12 - 1)	1.18182
24 D (10/1/2012)	ND<10 U (10/1/2000)	(24 - 10)/(13 - 1)	1.16667
20 D (10/1/2013)	ND<10 U (10/1/2000)	(20 - 10)/(14 - 1)	0.769231
20 D (10/1/2014)	ND<10 U (10/1/2000)	(20 - 10)/(15 - 1)	0.714286
50 J (10/1/2002)	54 (10/1/2001)	(50 - 54)/(3 - 2)	-4
73 J (10/1/2003)	54 (10/1/2001)	(73 - 54)/(4 - 2)	9.5
69 J (10/1/2004)	54 (10/1/2001)	(69 - 54)/(5 - 2)	5
49.5 J (10/1/2005)	54 (10/1/2001)	(49.5 - 54)/(6 - 2)	-1.125
31 (10/1/2006)	54 (10/1/2001)	(31 - 54)/(7 - 2)	-4.6
39 D (10/1/2007)	54 (10/1/2001)	(39 - 54)/(8 - 2)	-2.5
29 D (10/1/2008)	54 (10/1/2001)	(29 - 54)/(9 - 2)	-3.57143
31 D (10/1/2009)	54 (10/1/2001)	(31 - 54)/(10 - 2)	-2.875
30 D (10/1/2010)	54 (10/1/2001)	(30 - 54)/(11 - 2)	-2.66667
23 D (10/1/2011)	54 (10/1/2001)	(23 - 54)/(12 - 2)	-3.1
24 D (10/1/2012)	54 (10/1/2001)	(24 - 54)/(13 - 2)	-2.72727
20 D (10/1/2013)	54 (10/1/2001)	(20 - 54)/(14 - 2)	-2.83333
20 D (10/1/2014)	54 (10/1/2001)	(20 - 54)/(15 - 2)	-2.61538
73 J (10/1/2003)	50 J (10/1/2002)	(73 - 50)/(4 - 3)	23
69 J (10/1/2004)	50 J (10/1/2002)	(69 - 50)/(5 - 3)	9.5
49.5 J (10/1/2005)	50 J (10/1/2002)	(49.5 - 50)/(6 - 3)	-0.166667
31 (10/1/2006)	50 J (10/1/2002)	(31 - 50)/(7 - 3)	-4.75
39 D (10/1/2007)	50 J (10/1/2002)	(39 - 50)/(8 - 3)	-2.2
29 D (10/1/2008)	50 J (10/1/2002)	(29 - 50)/(9 - 3)	-3.5
31 D (10/1/2009)	50 J (10/1/2002)	(31 - 50)/(10 - 3)	-2.71429
30 D (10/1/2010)	50 J (10/1/2002)	(30 - 50)/(11 - 3)	-2.5
23 D (10/1/2011)	50 J (10/1/2002)	(23 - 50)/(12 - 3)	-3
24 D (10/1/2012)	50 J (10/1/2002)	(24 - 50)/(13 - 3)	-2.6
20 D (10/1/2013)	50 J (10/1/2002)	(20 - 50)/(14 - 3)	-2.72727
20 D (10/1/2014)	50 J (10/1/2002)	(20 - 50)/(15 - 3)	-2.5
69 J (10/1/2004)	73 J (10/1/2003)	(69 - 73)/(5 - 4)	-4
49.5 J (10/1/2005)	73 J (10/1/2003)	(49.5 - 73)/(6 - 4)	-11.75
31 (10/1/2006)	73 J (10/1/2003)	(31 - 73)/(7 - 4)	-14
39 D (10/1/2007)	73 J (10/1/2003)	(39 - 73)/(8 - 4)	-8.5
29 D (10/1/2008)	73 J (10/1/2003)	(29 - 73)/(9 - 4)	-8.8

31 D (10/1/2009)	73 J (10/1/2003)	(31 - 73)/(10 - 4)	-7
30 D (10/1/2010)	73 J (10/1/2003)	(30 - 73)/(11 - 4)	-6.14286
23 D (10/1/2011)	73 J (10/1/2003)	(23 - 73)/(12 - 4)	-6.25
24 D (10/1/2012)	73 J (10/1/2003)	(24 - 73)/(13 - 4)	-5.44444
20 D (10/1/2013)	73 J (10/1/2003)	(20 - 73)/(14 - 4)	-5.3
20 D (10/1/2014)	73 J (10/1/2003)	(20 - 73)/(15 - 4)	-4.81818
49.5 J (10/1/2005)	69 J (10/1/2004)	(49.5 - 69)/(6 - 5)	-19.5
31 (10/1/2006)	69 J (10/1/2004)	(31 - 69)/(7 - 5)	-19
39 D (10/1/2007)	69 J (10/1/2004)	(39 - 69)/(8 - 5)	-10
29 D (10/1/2008)	69 J (10/1/2004)	(29 - 69)/(9 - 5)	-10
31 D (10/1/2009)	69 J (10/1/2004)	(31 - 69)/(10 - 5)	-7.6
30 D (10/1/2010)	69 J (10/1/2004)	(30 - 69)/(11 - 5)	-6.5
23 D (10/1/2011)	69 J (10/1/2004)	(23 - 69)/(12 - 5)	-6.57143
24 D (10/1/2012)	69 J (10/1/2004)	(24 - 69)/(13 - 5)	-5.625
20 D (10/1/2013)	69 J (10/1/2004)	(20 - 69)/(14 - 5)	-5.44444
20 D (10/1/2014)	69 J (10/1/2004)	(20 - 69)/(15 - 5)	-4.9
31 (10/1/2006)	49.5 J (10/1/2005)	(31 - 49.5)/(7 - 6)	-18.5
39 D (10/1/2007)	49.5 J (10/1/2005)	(39 - 49.5)/(8 - 6)	-5.25
29 D (10/1/2008)	49.5 J (10/1/2005)	(29 - 49.5)/(9 - 6)	-6.83333
31 D (10/1/2009)	49.5 J (10/1/2005)	(31 - 49.5)/(10 - 6)	-4.625
30 D (10/1/2010)	49.5 J (10/1/2005)	(30 - 49.5)/(11 - 6)	-3.9
23 D (10/1/2011)	49.5 J (10/1/2005)	(23 - 49.5)/(12 - 6)	-4.41667
24 D (10/1/2012)	49.5 J (10/1/2005)	(24 - 49.5)/(13 - 6)	-3.64286
20 D (10/1/2013)	49.5 J (10/1/2005)	(20 - 49.5)/(14 - 6)	-3.6875
20 D (10/1/2014)	49.5 J (10/1/2005)	(20 - 49.5)/(15 - 6)	-3.27778
39 D (10/1/2007)	31 (10/1/2006)	(39 - 31)/(8 - 7)	8
29 D (10/1/2008)	31 (10/1/2006)	(29 - 31)/(9 - 7)	-1
31 D (10/1/2009)	31 (10/1/2006)	(31 - 31)/(10 - 7)	0
30 D (10/1/2010)	31 (10/1/2006)	(30 - 31)/(11 - 7)	-0.25
23 D (10/1/2011)	31 (10/1/2006)	(23 - 31)/(12 - 7)	-1.6
24 D (10/1/2012)	31 (10/1/2006)	(24 - 31)/(13 - 7)	-1.16667
20 D (10/1/2013)	31 (10/1/2006)	(20 - 31)/(14 - 7)	-1.57143
20 D (10/1/2014)	31 (10/1/2006)	(20 - 31)/(15 - 7)	-1.375
29 D (10/1/2008)	39 D (10/1/2007)	(29 - 39)/(9 - 8)	-10
31 D (10/1/2009)	39 D (10/1/2007)	(31 - 39)/(10 - 8)	-4
30 D (10/1/2010)	39 D (10/1/2007)	(30 - 39)/(11 - 8)	-3
23 D (10/1/2011)	39 D (10/1/2007)	(23 - 39)/(12 - 8)	-4
24 D (10/1/2012)	39 D (10/1/2007)	(24 - 39)/(13 - 8)	-3
20 D (10/1/2013)	39 D (10/1/2007)	(20 - 39)/(14 - 8)	-3.16667
20 D (10/1/2014)	39 D (10/1/2007)	(20 - 39)/(15 - 8)	-2.71429
31 D (10/1/2009)	29 D (10/1/2008)	(31 - 29)/(10 - 9)	2
30 D (10/1/2010)	29 D (10/1/2008)	(30 - 29)/(11 - 9)	0.5
23 D (10/1/2011)	29 D (10/1/2008)	(23 - 29)/(12 - 9)	-2
24 D (10/1/2012)	29 D (10/1/2008)	(24 - 29)/(13 - 9)	-1.25
20 D (10/1/2013)	29 D (10/1/2008)	(20 - 29)/(14 - 9)	-1.8
20 D (10/1/2014)	29 D (10/1/2008)	(20 - 29)/(15 - 9)	-1.5
30 D (10/1/2010)	31 D (10/1/2009)	(30 - 31)/(11 - 10)	-1
23 D (10/1/2011)	31 D (10/1/2009)	(23 - 31)/(12 - 10)	-4
24 D (10/1/2012)	31 D (10/1/2009)	(24 - 31)/(13 - 10)	-2.33333
20 D (10/1/2013)	31 D (10/1/2009)	(20 - 31)/(14 - 10)	-2.75
20 D (10/1/2014)	31 D (10/1/2009)	(20 - 31)/(15 - 10)	-2.2

23 D (10/1/2011)	30 D (10/1/2010)	(23 - 30)/(12 - 11)	-7
24 D (10/1/2012)	30 D (10/1/2010)	(24 - 30)/(13 - 11)	-3
20 D (10/1/2013)	30 D (10/1/2010)	(20 - 30)/(14 - 11)	-3.33333
20 D (10/1/2014)	30 D (10/1/2010)	(20 - 30)/(15 - 11)	-2.5
24 D (10/1/2012)	23 D (10/1/2011)	(24 - 23)/(13 - 12)	1
20 D (10/1/2013)	23 D (10/1/2011)	(20 - 23)/(14 - 12)	-1.5
20 D (10/1/2014)	23 D (10/1/2011)	(20 - 23)/(15 - 12)	-1
20 D (10/1/2013)	24 D (10/1/2012)	(20 - 24)/(14 - 13)	-4
20 D (10/1/2014)	24 D (10/1/2012)	(20 - 24)/(15 - 13)	-2
20 D (10/1/2014)	20 D (10/1/2013)	(20 - 20)/(15 - 14)	0

Number of Q values = 105

Ordered Q Values

n	Q
1	-19.5
2	-19
3	-18.5
4	-14
5	-11.75
6	-10
7	-10
8	-10
9	-8.8
10	-8.5
11	-7.6
12	-7
13	-7
14	-6.83333
15	-6.57143
16	-6.5
17	-6.25
18	-6.14286
19	-5.625
20	-5.44444
21	-5.44444
22	-5.3
23	-5.25
24	-4.9
25	-4.81818
26	-4.75
27	-4.625
28	-4.6
29	-4.41667
30	-4
31	-4
32	-4
33	-4
34	-4
35	-4
36	-3.9
37	-3.6875

38	-3.64286
39	-3.57143
40	-3.5
41	-3.33333
42	-3.27778
43	-3.16667
44	-3.1
45	-3
46	-3
47	-3
48	-3
49	-2.875
50	-2.83333
51	-2.75
52	-2.72727
53	-2.72727
54	-2.71429
55	-2.71429
56	-2.66667
57	-2.61538
58	-2.6
59	-2.5
60	-2.5
61	-2.5
62	-2.5
63	-2.33333
64	-2.2
65	-2.2
66	-2
67	-2
68	-1.8
69	-1.6
70	-1.57143
71	-1.5
72	-1.5
73	-1.375
74	-1.25
75	-1.16667
76	-1.125
77	-1
78	-1
79	-1
80	-0.25
81	-0.166667
82	0
83	0
84	0.5
85	0.714286
86	0.769231
87	1
88	1.16667
89	1.18182
90	2
91	2
92	2.33333
93	2.375
94	3.5

95	4.14286
96	5
97	7.9
98	8
99	9.5
100	9.5
101	14.75
102	20
103	21
104	23
105	44

Sen's Estimator (Median Q) is -2.72727

Tied Group	Value	Members
1	31	2
2	20	2

Time Period	Observations
10/1/2000	1
10/1/2001	1
10/1/2002	1
10/1/2003	1
10/1/2004	1
10/1/2005	1
10/1/2006	1
10/1/2007	1
10/1/2008	1
10/1/2009	1
10/1/2010	1
10/1/2011	1
10/1/2012	1
10/1/2013	1
10/1/2014	1

There are 0 time periods with multiple data

A = 36
B = 0
C = 0
D = 0
E = 4
F = 0
a = 7350
b = 24570
c = 420
Group Variance = 406.333
For 80% confidence interval (two-tailed), Z at (1-0.8)/2 = 1.28155
C = 25.8331
M1 = (105 - 25.8331)/2.0 = 39.5834
M2 = (105 + 25.8331)/2.0 + 1 = 66.4166
Lower limit is -3.5 = Q(40)
Upper limit is -2 = Q(66)
-2 < 0 indicating a downward trend in data.

Sen's Slope Analysis

Parameter: DRO

Location: MW-146-1

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

80% Confidence Level

Xj	Xk	(Xj - Xk)/(j-k)	Q
12000 Y (10/1/2008)	12000 Y (10/1/2007)	(12000 - 12000)/(2 - 1)	0
6800 Y (10/1/2009)	12000 Y (10/1/2007)	(6800 - 12000)/(3 - 1)	-2600
13000 Y (10/1/2010)	12000 Y (10/1/2007)	(13000 - 12000)/(4 - 1)	333.333
11000 Y (10/1/2011)	12000 Y (10/1/2007)	(11000 - 12000)/(5 - 1)	-250
7700 Y (10/1/2012)	12000 Y (10/1/2007)	(7700 - 12000)/(6 - 1)	-860
9000 Y (10/1/2013)	12000 Y (10/1/2007)	(9000 - 12000)/(7 - 1)	-500
6100 Y (10/1/2014)	12000 Y (10/1/2007)	(6100 - 12000)/(8 - 1)	-842.857
6800 Y (10/1/2009)	12000 Y (10/1/2008)	(6800 - 12000)/(3 - 2)	-5200
13000 Y (10/1/2010)	12000 Y (10/1/2008)	(13000 - 12000)/(4 - 2)	500
11000 Y (10/1/2011)	12000 Y (10/1/2008)	(11000 - 12000)/(5 - 2)	-333.333
7700 Y (10/1/2012)	12000 Y (10/1/2008)	(7700 - 12000)/(6 - 2)	-1075
9000 Y (10/1/2013)	12000 Y (10/1/2008)	(9000 - 12000)/(7 - 2)	-600
6100 Y (10/1/2014)	12000 Y (10/1/2008)	(6100 - 12000)/(8 - 2)	-983.333
13000 Y (10/1/2010)	6800 Y (10/1/2009)	(13000 - 6800)/(4 - 3)	6200
11000 Y (10/1/2011)	6800 Y (10/1/2009)	(11000 - 6800)/(5 - 3)	2100
7700 Y (10/1/2012)	6800 Y (10/1/2009)	(7700 - 6800)/(6 - 3)	300
9000 Y (10/1/2013)	6800 Y (10/1/2009)	(9000 - 6800)/(7 - 3)	550
6100 Y (10/1/2014)	6800 Y (10/1/2009)	(6100 - 6800)/(8 - 3)	-140
11000 Y (10/1/2011)	13000 Y (10/1/2010)	(11000 - 13000)/(5 - 4)	-2000
7700 Y (10/1/2012)	13000 Y (10/1/2010)	(7700 - 13000)/(6 - 4)	-2650
9000 Y (10/1/2013)	13000 Y (10/1/2010)	(9000 - 13000)/(7 - 4)	-1333.33
6100 Y (10/1/2014)	13000 Y (10/1/2010)	(6100 - 13000)/(8 - 4)	-1725
7700 Y (10/1/2012)	11000 Y (10/1/2011)	(7700 - 11000)/(6 - 5)	-3300
9000 Y (10/1/2013)	11000 Y (10/1/2011)	(9000 - 11000)/(7 - 5)	-1000
6100 Y (10/1/2014)	11000 Y (10/1/2011)	(6100 - 11000)/(8 - 5)	-1633.33
9000 Y (10/1/2013)	7700 Y (10/1/2012)	(9000 - 7700)/(7 - 6)	1300
6100 Y (10/1/2014)	7700 Y (10/1/2012)	(6100 - 7700)/(8 - 6)	-800
6100 Y (10/1/2014)	9000 Y (10/1/2013)	(6100 - 9000)/(8 - 7)	-2900

Number of Q values = 28

Ordered Q Values

n	Q
1	-5200
2	-3300
3	-2900
4	-2650
5	-2600
6	-2000
7	-1725

8	-1633.33
9	-1333.33
10	-1075
11	-1000
12	-983.333
13	-860
14	-842.857
15	-800
16	-600
17	-500
18	-333.333
19	-250
20	-140
21	0
22	300
23	333.333
24	500
25	550
26	1300
27	2100
28	6200

Sen's Estimator (Median Q) is -821.429

Tied Group	Value	Members
1	12000	2

Time Period	Observations
10/1/2007	1
10/1/2008	1
10/1/2009	1
10/1/2010	1
10/1/2011	1
10/1/2012	1
10/1/2013	1
10/1/2014	1

There are 0 time periods with multiple data

A = 18
B = 0
C = 0
D = 0
E = 2
F = 0
a = 1176
b = 3024
c = 112
Group Variance = 64.3333
For 80% confidence interval (two-tailed), Z at (1-0.8)/2 = 1.28155
C = 10.2791
M1 = (28 - 10.2791)/2.0 = 8.86046
M2 = (28 + 10.2791)/2.0 + 1 = 20.1395
Lower limit is -1333.33 = Q(9)
Upper limit is -140 = Q(20)
-140 < 0 indicating a downward trend in data.

Sen's Slope Analysis

Parameter: DRO

Location: 04-175

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

80% Confidence Level

Xj	Xk	(Xj - Xk)/(j-k)	Q
11000 (10/1/2006)	7080 J (10/1/2005)	(11000 - 7080)/(2 - 1)	3920
6600 Y (10/1/2007)	7080 J (10/1/2005)	(6600 - 7080)/(3 - 1)	-240
4700 Y (10/1/2008)	7080 J (10/1/2005)	(4700 - 7080)/(4 - 1)	-793.333
7700 Y (10/1/2009)	7080 J (10/1/2005)	(7700 - 7080)/(5 - 1)	155
6100 Y (10/1/2010)	7080 J (10/1/2005)	(6100 - 7080)/(6 - 1)	-196
5600 Y (10/1/2011)	7080 J (10/1/2005)	(5600 - 7080)/(7 - 1)	-246.667
5500 Y (10/1/2012)	7080 J (10/1/2005)	(5500 - 7080)/(8 - 1)	-225.714
11000 Y (10/1/2013)	7080 J (10/1/2005)	(11000 - 7080)/(9 - 1)	490
2900 Y (10/1/2014)	7080 J (10/1/2005)	(2900 - 7080)/(10 - 1)	-464.444
6600 Y (10/1/2007)	11000 (10/1/2006)	(6600 - 11000)/(3 - 2)	-4400
4700 Y (10/1/2008)	11000 (10/1/2006)	(4700 - 11000)/(4 - 2)	-3150
7700 Y (10/1/2009)	11000 (10/1/2006)	(7700 - 11000)/(5 - 2)	-1100
6100 Y (10/1/2010)	11000 (10/1/2006)	(6100 - 11000)/(6 - 2)	-1225
5600 Y (10/1/2011)	11000 (10/1/2006)	(5600 - 11000)/(7 - 2)	-1080
5500 Y (10/1/2012)	11000 (10/1/2006)	(5500 - 11000)/(8 - 2)	-916.667
11000 Y (10/1/2013)	11000 (10/1/2006)	(11000 - 11000)/(9 - 2)	0
2900 Y (10/1/2014)	11000 (10/1/2006)	(2900 - 11000)/(10 - 2)	-1012.5
4700 Y (10/1/2008)	6600 Y (10/1/2007)	(4700 - 6600)/(4 - 3)	-1900
7700 Y (10/1/2009)	6600 Y (10/1/2007)	(7700 - 6600)/(5 - 3)	550
6100 Y (10/1/2010)	6600 Y (10/1/2007)	(6100 - 6600)/(6 - 3)	-166.667
5600 Y (10/1/2011)	6600 Y (10/1/2007)	(5600 - 6600)/(7 - 3)	-250
5500 Y (10/1/2012)	6600 Y (10/1/2007)	(5500 - 6600)/(8 - 3)	-220
11000 Y (10/1/2013)	6600 Y (10/1/2007)	(11000 - 6600)/(9 - 3)	733.333
2900 Y (10/1/2014)	6600 Y (10/1/2007)	(2900 - 6600)/(10 - 3)	-528.571
7700 Y (10/1/2009)	4700 Y (10/1/2008)	(7700 - 4700)/(5 - 4)	3000
6100 Y (10/1/2010)	4700 Y (10/1/2008)	(6100 - 4700)/(6 - 4)	700
5600 Y (10/1/2011)	4700 Y (10/1/2008)	(5600 - 4700)/(7 - 4)	300
5500 Y (10/1/2012)	4700 Y (10/1/2008)	(5500 - 4700)/(8 - 4)	200
11000 Y (10/1/2013)	4700 Y (10/1/2008)	(11000 - 4700)/(9 - 4)	1260
2900 Y (10/1/2014)	4700 Y (10/1/2008)	(2900 - 4700)/(10 - 4)	-300
6100 Y (10/1/2010)	7700 Y (10/1/2009)	(6100 - 7700)/(6 - 5)	-1600
5600 Y (10/1/2011)	7700 Y (10/1/2009)	(5600 - 7700)/(7 - 5)	-1050
5500 Y (10/1/2012)	7700 Y (10/1/2009)	(5500 - 7700)/(8 - 5)	-733.333
11000 Y (10/1/2013)	7700 Y (10/1/2009)	(11000 - 7700)/(9 - 5)	825
2900 Y (10/1/2014)	7700 Y (10/1/2009)	(2900 - 7700)/(10 - 5)	-960
5600 Y (10/1/2011)	6100 Y (10/1/2010)	(5600 - 6100)/(7 - 6)	-500
5500 Y (10/1/2012)	6100 Y (10/1/2010)	(5500 - 6100)/(8 - 6)	-300
11000 Y (10/1/2013)	6100 Y (10/1/2010)	(11000 - 6100)/(9 - 6)	1633.33
2900 Y (10/1/2014)	6100 Y (10/1/2010)	(2900 - 6100)/(10 - 6)	-800
5500 Y (10/1/2012)	5600 Y (10/1/2011)	(5500 - 5600)/(8 - 7)	-100
11000 Y (10/1/2013)	5600 Y (10/1/2011)	(11000 - 5600)/(9 - 7)	2700

2900 Y (10/1/2014)	5600 Y (10/1/2011)	(2900 - 5600)/(10 - 7)	-900
11000 Y (10/1/2013)	5500 Y (10/1/2012)	(11000 - 5500)/(9 - 8)	5500
2900 Y (10/1/2014)	5500 Y (10/1/2012)	(2900 - 5500)/(10 - 8)	-1300
2900 Y (10/1/2014)	11000 Y (10/1/2013)	(2900 - 11000)/(10 - 9)	-8100

Number of Q values = 45

Ordered Q Values

n	Q
1	-8100
2	-4400
3	-3150
4	-1900
5	-1600
6	-1300
7	-1225
8	-1100
9	-1080
10	-1050
11	-1012.5
12	-960
13	-916.667
14	-900
15	-800
16	-793.333
17	-733.333
18	-528.571
19	-500
20	-464.444
21	-300
22	-300
23	-250
24	-246.667
25	-240
26	-225.714
27	-220
28	-196
29	-166.667
30	-100
31	0
32	155
33	200
34	300
35	490
36	550
37	700
38	733.333
39	825
40	1260
41	1633.33
42	2700
43	3000
44	3920
45	5500

Sen's Estimator (Median Q) is -250

Tied Group	Value	Members
1	11000	2

Time Period	Observations
10/1/2005	1
10/1/2006	1
10/1/2007	1
10/1/2008	1
10/1/2009	1
10/1/2010	1
10/1/2011	1
10/1/2012	1
10/1/2013	1
10/1/2014	1

There are 0 time periods with multiple data

A = 18
B = 0
C = 0
D = 0
E = 2
F = 0
a = 2250
b = 6480
c = 180
Group Variance = 124
For 80% confidence interval (two-tailed), Z at (1-0.8)/2 = 1.28155
C = 14.2707
M1 = (45 - 14.2707)/2.0 = 15.3646
M2 = (45 + 14.2707)/2.0 + 1 = 30.6354
Lower limit is -800 = Q(15)
Upper limit is 0 = Q(31)
-800 < 0 < 0 indicating no trend in data.

APPENDIX I

PHOTOGRAPHIC LOG

AREA 303/GCI COMPOUND

Photo #1: Area 303, well MW-303-37 facing north.

Photo #2: Area 303/GCI Compound, well MW-303-41, facing south.

Photo #3: Area 303/GCI Compound, view of surface water protection well 03-012 near East Canal.

Photo #4: Overview of Area 303/GCI Compound facing north.

Photo #5: Area 303/GCI Compound, East Canal shoreline inspection, view south near well 03-012 of SWMU 62 New Housing Fuel Leak recovery trench and booms 2, 3, and 8 (1 of 3 photos, north to south).

Photo #6: Area 303/GCI Compound, East Canal shoreline inspection, north of SWMU 62 recovery trench, view south of thick vegetation (2 of 3 photos, north to south).

Photo #7: Area 303/GCI Compound, East Canal shoreline inspection, surface water in heavily vegetated area north of SWMU 62 recovery trench with biogenic sheen (3 of 3 photos, north to south).

FORMER POWER PLANT BUILDING T-1451

Photo #8: Former Power Plant Building T-1451, well MW-1451-1 facing northwest.

Photo #9: Former Power Plant Building T-1451, close-up of well 01-118.

Photo #10: Former Power Plant Building T-1451, East Canal, shoreline inspection, view south and view of former petroleum seep location (1 of 9 photos, north to south).

Photo #11: Former Power Plant Building T-1451, East Canal shoreline inspection, view of remediated shoreline at former petroleum seep and new monitoring well (MW-1451-3) in foreground, facing south (2 of 9 photos, north to south).

Photo #12: Former Power Plant Building T-1451, East Canal shoreline inspection, view south toward booms 11 and 12 (3 of 9 photos, north to south).

Photo #13: Former Power Plant Building T-1451, East Canal shoreline inspection, view south toward boom 11, boom 12 and petroleum seep (4 of 9 photos, north to south).

Photo #14: Former Power Plant Building T-1451, East Canal shoreline inspection, southern end of boom 11 and oily sheen (5 of 9 photos, north to south).

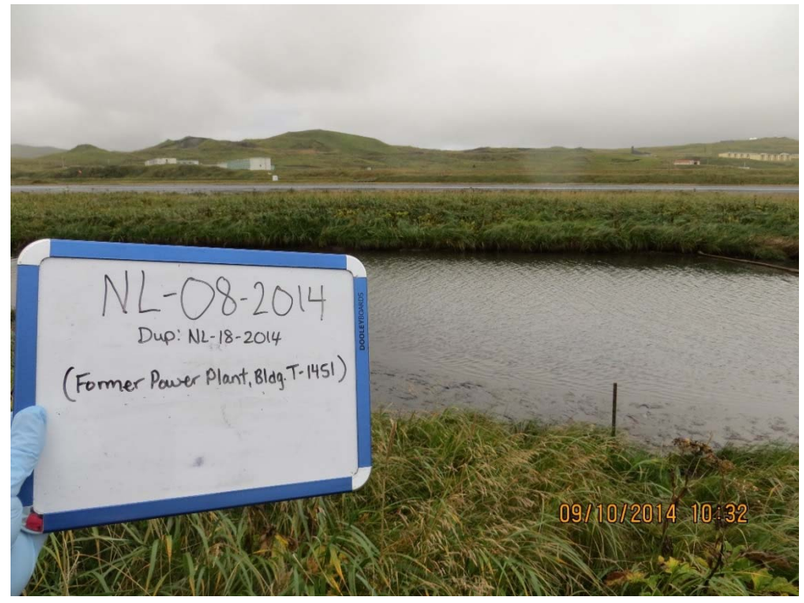


Photo #15: Former Power Plant Building T-1451, sediment/ surface water sample NL-08, view west.

Photo #16: Former Power Plant Building T-1451, close-up view of sediment sample location NL-08S.

Photo #17: Former Power Plant Building T-1451, East Canal shoreline inspection south of boom 11, view south toward the southern end of the canal (6 of 9 photos, north to south).

Photo #18: Former Power Plant Building T-1451, East Canal shoreline inspection, view south toward the southern end of the canal (7 of 9 photos, north to south).

Photo #19: Former Power Plant Building T-1451, East Canal shoreline inspection, view south of the southern end of the canal (8 of 9 photos, north to south).

Photo #20: Former Power Plant Building T-1451, East Canal shoreline inspection, view south of Crossover Canal (9 of 9 photos, north to south).

NMCB BUILDING T-1416 EXPANDED AREA

Photo #21: NMCB Building T-1416 Expanded Area, well 02-815 facing south with well NMCB-12 in the background.

Photo #22: NMCB Building T-1416 Expanded Area, overview facing south.

Photo #23: NMCB Building T-1416 Expanded Area, shoreline inspection, view east of armor rock shoreline and NMCB buildings from the west end of inspection near well 02-473 (1 of 19 photos, west to east).

Photo #24: NMCB Building T-1416 Expanded Area, shoreline inspection, view northeast of armor rock shoreline and NMCB building (2 of 19 photos, west to east).

Photo #25: NMCB Building T-1416 Expanded Area, shoreline inspection, view northeast of armor rock (3 of 19 photos, west to east).

Photo #26: NMCB Building T-1416 Expanded Area, shoreline inspection, view northeast of armor rock and NMCB Building in background (4 of 19 photos, west to east).

Photo #27: NMCB Building T-1416 Expanded Area, shoreline inspection, view east of armor rock (5 of 19 photos, west to east).

Photo #28: NMCB Building T-1416 Expanded Area, shoreline inspection, view east of armor rock shoreline (6 of 19 photos, west to east).

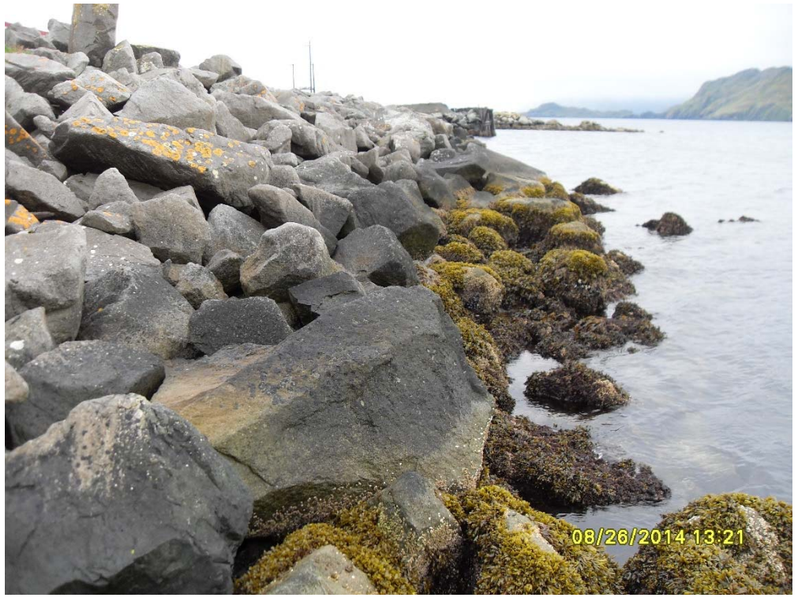


Photo #29: NMCB Building T-1416 Expanded Area, shoreline inspection, view east of armor rock shoreline (7 of 19 photos, west to east).

Photo #30: NMCB Building T-1416 Expanded Area, shoreline inspection, view east of armor rock shoreline (8 of 19 photos, west to east).

Photo #31: NMCB Building T-1416 Expanded Area, shoreline inspection, view east of armor rock shoreline (9 of 19 photos, west to east).

Photo #32: NMCB Building T-1416 Expanded Area, view east of armor rock (10 of 19 photos, west to east).

Photo #33: NMCB Building T-1416 Expanded Area, view northeast of steep armor rock shoreline (11 of 19 photos, west to east).

Photo #34: NMCB Building T-1416 Expanded Area, armor rock shoreline with pilings located southeast of buildings, view east (12 of 19 photos, west to east).

Photo #35: NMCB Building T-1416 Expanded Area, view east of armor rock and NMCB Building T-1416 (13 of 19 photos, west to east).

Photo #36: NMCB Building T-1416 Expanded Area, armor rock shoreline with pilings located southeast of buildings, view east (14 of 19 photos, west to east).

Photo #37: NMCB Building T-1416 Expanded Area, view east of armor rock and pilings (15 of 19 photos, west to east).

Photo #38: NMCB Building T-1416 Expanded Area, shoreline inspection, view east of armor rock on shoreline east of site (16 of 19 photos, west to east).

Photo #39: NMCB Building T-1416 Expanded Area, shoreline east of site, view south (17 of 19 photos, west to east).

Photo #40: NMCB Building T-1416 Expanded Area, shoreline inspection, view north of armor wall located east of site (18 of 19 photos, west to east).

Photo #41: NMCB Building T-1416 Expanded Area, shoreline east of site, view northeast (19 of 19 photos, west to east).

ROICC CONTRACTORS CAMP

Photo #42: ROICC Contractors Camp, well 08-200 facing northeast.

SA 79, MAIN ROAD PIPELINE

Photo #43: SA 79, Main Road Pipeline, overview of site, view south toward Sweeper Cove.

Photo #44: SA 79, Main Road Pipeline, well 02-230 with Sweeper Cove in background, view southwest.

Photo #45: SA 79, Main Road Pipeline, Sweeper Cove shoreline inspection below well 02-230, view north toward S. Sweeper Creek outlet (1 of 6 photos, south to north).

Photo #46: SA 79, Main Road Pipeline, Sweeper Cove shoreline inspection, view north with Main Road pipeline in background (2 of 6 photos, south to north).

Photo #47: SA 79, Main Road Pipeline, Sweeper Cove shoreline inspection, view north with Main Road pipeline in background (3 of 6 photos, south to north).

Photo #48: SA 79, Main Road Pipeline, Sweeper Cove shoreline inspection, view north at mouth of South Sweeper Creek, view west (4 of 6 photos, south to north).

Photo #49: SA 79, Main Road Pipeline, Sweeper Cove shoreline inspection, view north of beach and Main Road pipeline (5 of 6 photos, south to north).

Photo #50: SA 79, Main Road Pipeline, Sweeper Cove shoreline inspection, view north at the mouth of Sweeper Creek (6 of 6 photos, south to north).

SA 80, STEAM PLANT NO. 4

Photo #51: SA 80, Steam Plant No. 4, close-up of well 04-173.

Photo #52: SA 80, Steam Plant No. 4, well 04-157, view south.

SOUTH OF RUNWAY 18-36

Photo #53: South of Runway 18-36, overview of site and product recovery trench sumps (yellow wells), view north.

Photo #54: South of Runway 18-36, well RW-18/36-03 with South Sweeper Creek in background, view south.

Photo #55: South of Runway 18-36, shoreline inspection of eastern shore of South Sweeper Creek adjacent to site, view north at mouth of creek with Main Road Pipeline in distance (1 of 30 photos, south to north).

Photo #56: South of Runway 18-36, shoreline inspection of South Sweeper Creek view west with Main Road Pipeline in distance (2 of 30 photos, south to north).

Photo #57: South of Runway 18-36, shoreline inspection of South Sweeper Creek, view west (3 of 30 photos, south to north).

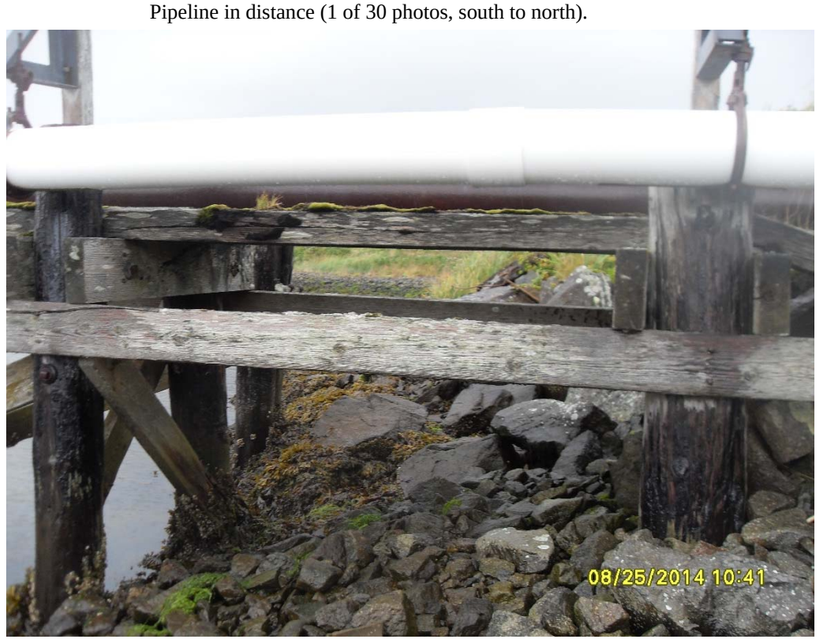


Photo #58: South of Runway 18-36, shoreline inspection of South Sweeper Creek, view west at Main Road pipeline (4 of 30 photos, south to north).

Photo #59: South of Runway 18-36, shoreline inspection of South Sweeper Creek, view northwest with boom 6 in the background (5 of 30 photos, south to north).

Photo #60: South of Runway 18-36, shoreline inspection of South Sweeper Creek, boom 6 facing southwest (6 of 30 photos, south to north).

Photo #61: South of Runway 18-36, shoreline inspection of South Sweeper Creek, view west toward Main Road bridge (7 of 30 photos, south to north).

Photo #62: South of Runway 18-36, shoreline inspection of South Sweeper Creek, view west toward Main Road bridge (8 of 30 photos, south to north).

Photo #63: South of Runway 18-36, shoreline inspection of South Sweeper Creek, view west under Main Road bridge with end of product interception trench in foreground (9 of 30 photos, south to north).

Photo #64: South of Runway 18-36, shoreline inspection of South Sweeper Creek, view west with from beneath Main Road bridge toward lagoon (10 of 30 photos, south to north).

Photo #65: South of Runway 18-36, shoreline inspection of South Sweeper Creek, view north toward Moffett Road bridge (11 of 30 photos, south to north).

Photo #66: South of Runway 18-36, sheen on sediment on east bank of South Sweeper Creek.

Photo #67: South of Runway 18-36, sheen on east bank of South Sweeper Creek, view north (12 of 30 photos, south to north).

Photo #68: South of Runway 18-36, sheen on east bank of South Sweeper Creek, view north (13 of 30 photos, south to north).

Photo #69: South of Runway 18-36, shoreline inspection of South Sweeper Creek, sheen on sediment under Moffett Road bridge (14 of 30 photos, south to north).

Photo #70: South of Runway 18-36, shoreline inspection of South Sweeper Creek, sheen on sediment under Moffett Road bridge (15 of 30 photos, south to north).

Photo #71: South of Runway 18-36, shoreline inspection of South Sweeper Creek, sheen near Moffett Road bridge (16 of 30 photos, south to north).

Photo #72: South of Runway 18-36, shoreline inspection of South Sweeper Creek, sheen near Moffett Road bridge (17 of 30 photos, south to north).

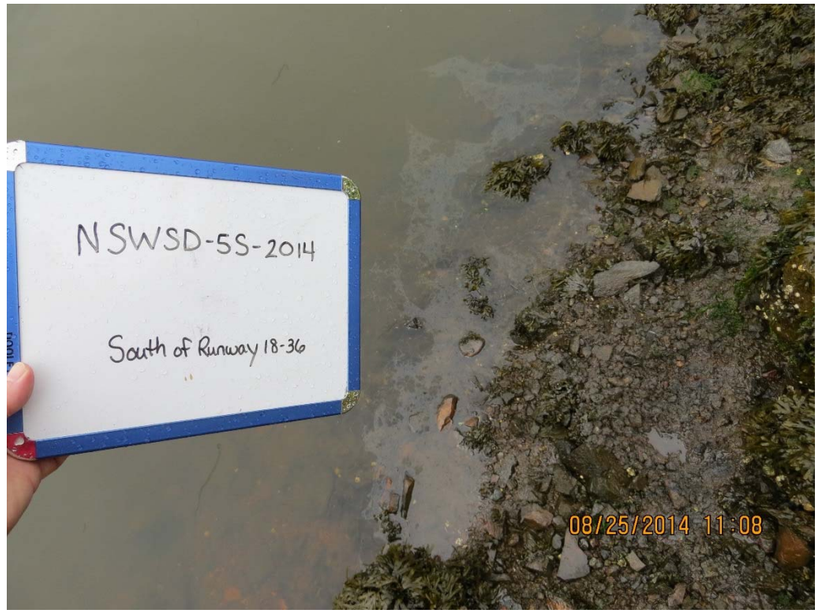


Photo #73: South of Runway 18-36, close-up of shoreline sediment sample location NSWSD-5S, view north.

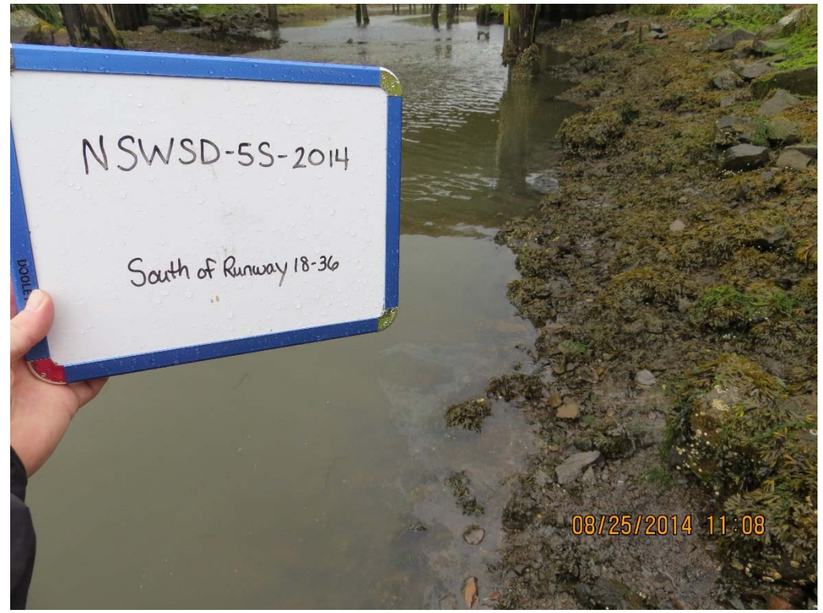


Photo #74: South of Runway 18-36, shoreline sediment sample location NSWSD-5S, view north.

Photo #75: South of Runway 18-36, shoreline inspection of South Sweeper Creek, view north from Moffett Road bridge (18 of 30 photos, south to north).

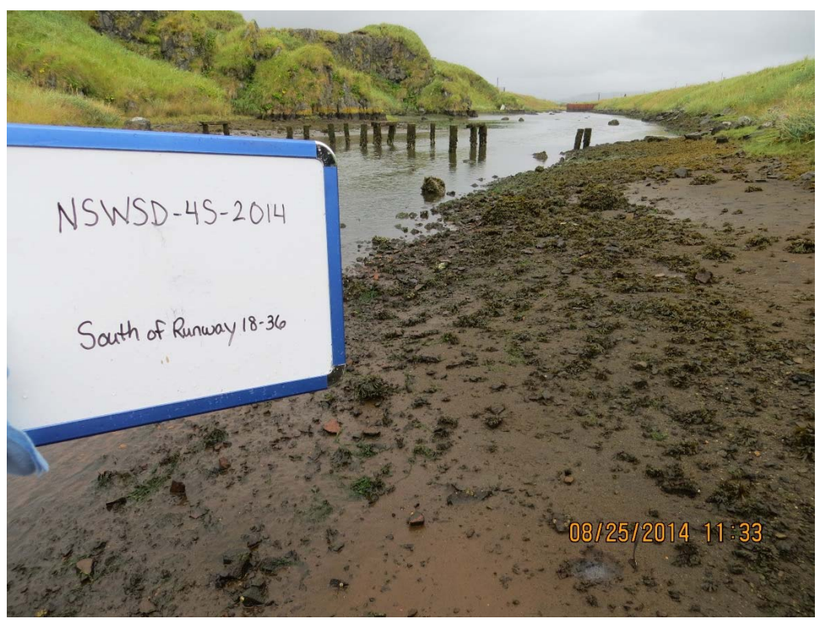


Photo #76: South of Runway 18-36, shoreline sediment sample location NSWSD-4S, view north

Photo #77: South of Runway 18-36, shoreline inspection of South Sweeper Creek, west of site, view north (19 of 30 photos, south to north).

Photo #78: South of Runway 18-36, shoreline inspection of South Sweeper Creek, west of site, view north (20 of 30 photos, south to north).

Photo #79: South of Runway 18-36, shoreline inspection of South Sweeper Creek, sheen on sediment north of Moffett Road bridge (21 of 30 photos, south to north).

Photo #80: South of Runway 18-36, shoreline inspection of South Sweeper Creek, west of site, view north (22 of 30 photos, south to north).

Photo #81: South of Runway 18-36, shoreline inspection of South Sweeper Creek, sheen on sediment, view north (23 of 30 photos, south to north).

Photo #82: South of Runway 18-36, shoreline sediment sample location NSWSD-2S, view north.

Photo #83: South of Runway 18-36, shoreline inspection of South Sweeper Creek, west of site, view north (24 of 30 photos, south to north).

Photo #84: South of Runway 18-36, shoreline inspection of South Sweeper Creek, bulkhead northwest of site, view north (25 of 30 photos, south to north).

Photo #85: South of Runway 18-36, shoreline inspection of South Sweeper Creek, west of site, view north (26 of 30 photos, south to north).

Photo #86: South of Runway 18-36, shoreline inspection of South Sweeper Creek, view north from bulkhead (27 of 30 photos, south to north).

Photo #87: South of Runway 18-36, shoreline inspection of South Sweeper Creek, view north of West Canal discharge pipes (28 of 30 photos, south to north).

Photo #88: South of Runway 18-36, shoreline inspection of South Sweeper Creek, view north toward trestle (29 of 30 photos, south to north).

Photo #89: South of Runway 18-36, shoreline inspection of South Sweeper Creek, view north at end of inspection at trestle (30 of 30 photos, south to north).

SWMU 11, PALISADES LANDFILL

Photo #90: SWMU 11, Palisades Landfill, site overview, view north of metal debris in ravine from sample location 102.

Photo #91: SWMU 11, Palisades Landfill, sediment sample location 101, view northeast.

Photo #92: SWMU 11, Palisades Landfill, sediment sample location 102, view northwest.

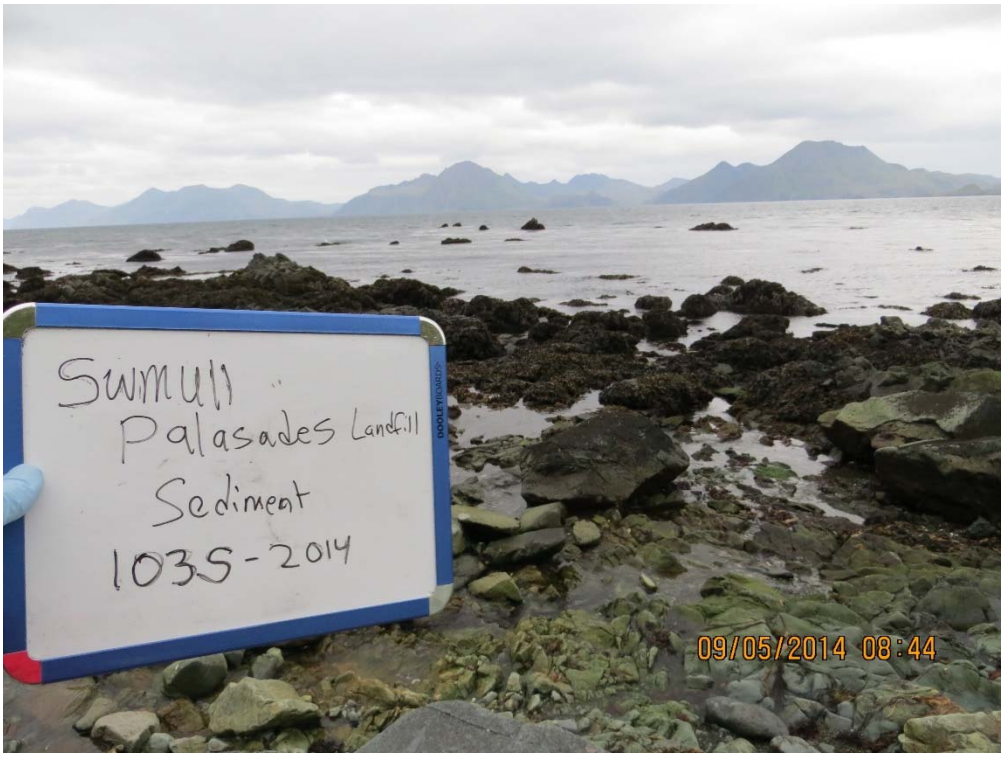


Photo #93: SWMU 11, Palisades Landfill, sediment sample location 103, view southwest.

SWMU 14, OLD PESTICIDE DISPOSAL AREA

Photo #94: SWMU 14, Old Pesticide Disposal Area, view north of downgradient monitoring well 15-3 with site in upper left photo background.

SWMU 17, POWER PLANT NO. 3

Photo #95: SWMU 17, Power Plant No. 3, equipment staging area, view south near well 05-735 front right.

Photo #96: SWMU 17, Power Plant No. 3, well 05-735 facing west with Power Plant in background.

SWMU 25, ROBERTS LANDFILL

Photo #97: SWMU 25, Roberts Landfill, well A-3 on the northeast side of the landfill with small boat harbor and Sweeper Cove in the background, view east.

Photo #98: SWMU 25, Roberts Landfill, well A-5 is located on the southeast side of the landfill, view northeast with small boat harbor in background.

Photo #99: SWMU 25, Roberts Landfill, no water present at surface water sample location RLSW01, view northeast upstream.

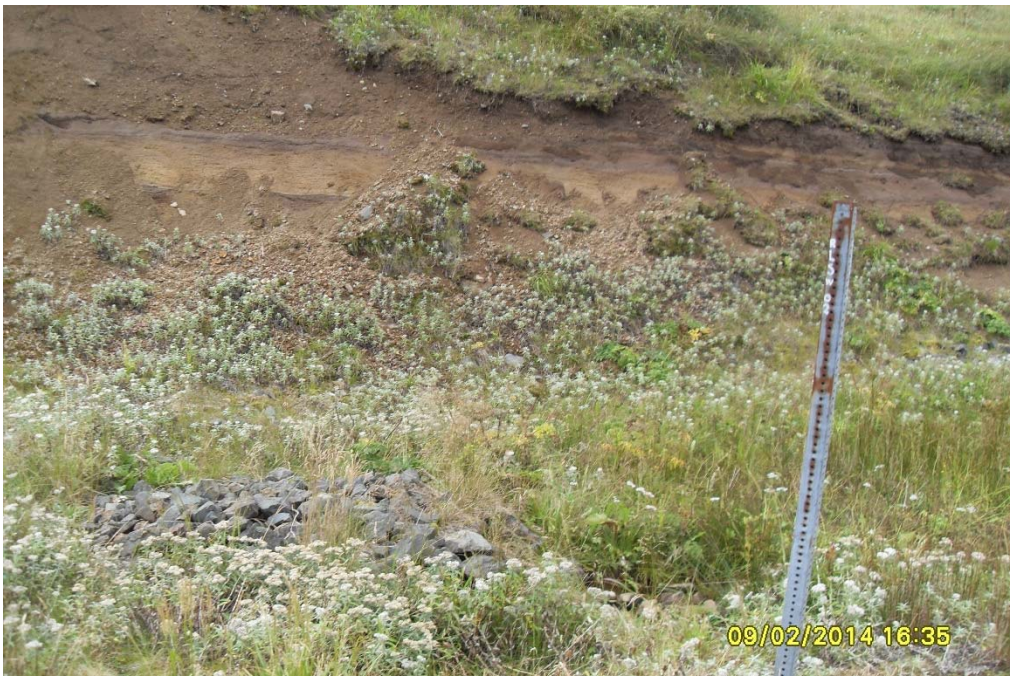


Photo #100: SWMU 25, Roberts Landfill, no water present at surface water sample location RLSW02, view west.

Photo #101: SWMU 25, Roberts Landfill, surface water sample location RLSW03, located next to VFW Dance Hall from perennial stream flowing from the eastern side of the landfill, view northwest.

Photo #102: SWMU 25, Roberts Landfill, close-up of surface water sample location RLSW03.

Photo #103: SWMU 25, Roberts Landfill, surface water sample location RLSW04 in Mitt Creek, view southeast.

Photo #104: SWMU 25, Roberts Landfill, close-up of surface water sample location RLSW05 in Mitt Creek.

Photo #105: SWMU 25, Roberts Landfill, surface water sample location RLSW05, from perennial stream that flows into Mitt Lake, view south.

Photo #106: SWMU 25, Roberts Landfill, surface water sample location NL11, collected in a ditch downgradient of RLSW03 before it enters Mitt Creek, view northeast.

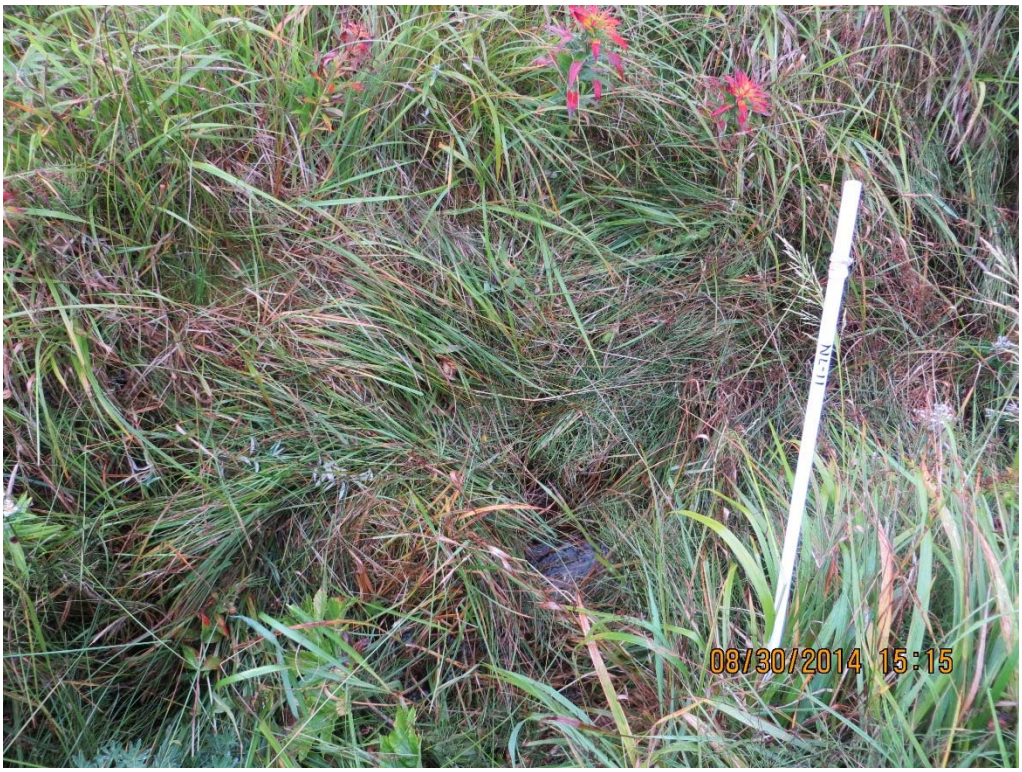


Photo #107: SWMU 25, Roberts Landfill, surface water sample location NL11, close-up of surface water sample location.

Photo #108: SWMU 25, Roberts Landfill, surface water sample location NL-12, sample collected in Mitt Creek just below ditch confluence, view south.

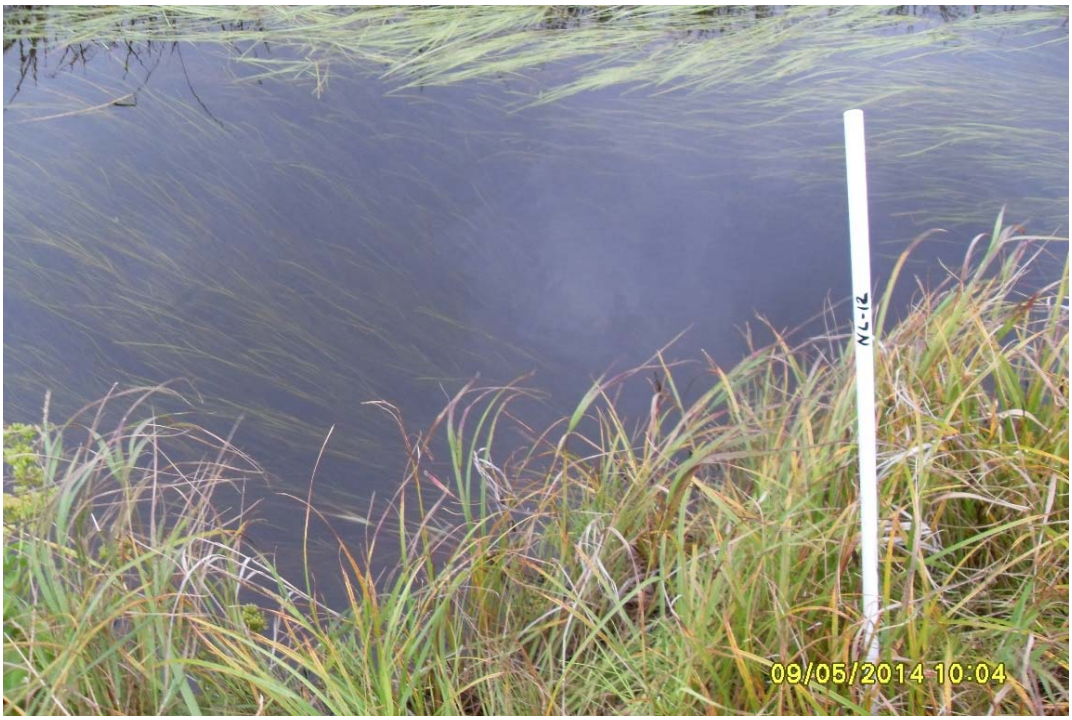


Photo #109: SWMU 25, Roberts Landfill, close-up of surface water sample location NL-12.

Photo #110: SWMU 25, Roberts Landfill, seep is located on northwest toe of landfill in Adak Fuels Facility and characterized by blue and white precipitate, view downstream.

Photo #111: SWMU 25, Roberts Landfill, surface water sample location NL-14, collected from below upper blue and white groundwater seep, view upstream.

SWMU 55

Photo #112: SWMU 55, overview of site, view north.

Photo #113: SWMU 55, well 55-146, view northeast.

SWMU 60, TANK FARM A

Photo #114: SWMU 60, Tank Farm A, well 651, view east with South Sweeper Creek lagoon in background.

Photo #115: SWMU 60, Tank Farm A, shoreline inspection of western shore of South Sweeper Creek at Main Road pipeline crossing at mouth of creek, view northwest (1 of 21 photos, south to north).

Photo #116: SWMU 60, Tank Farm A, shoreline inspection of South Sweeper Creek, view west at the south end of boom 6 and Main Road bridge, view west (2 of 21 photos, south to north).

Photo #117: SWMU 60, Tank Farm A, shoreline inspection of western shore of South Sweeper Creek, view north boom 6 at Main Road bridge (3 of 21 photos, south to north).

Photo #118: SWMU 60, Tank Farm A, shoreline inspection of South Sweeper Creek, view west at Main Road bridge (4 of 21 photos, south to north).

Photo #119: SWMU 60, Tank Farm A, shoreline inspection of South Sweeper Creek, view west at Main Road bridge (5 of 21 photos, south to north).

Photo #120: SWMU 60, Tank Farm A, shoreline inspection of South Sweeper Creek, under Main Road bridge (6 of 21 photos, south to north).

Photo #121: SWMU 60, Tank Farm A, shoreline inspection looking west toward south end of the inspection (7 of 21 photos, south to north).

Photo #122: SWMU 60, Tank Farm A, shoreline inspection looking west toward south end of the inspection with boom 10 (8 of 21 photos, south to north).

Photo #123: SWMU 60, Tank Farm A, shoreline inspection of western shore of South Sweeper Creek, view southwest (9 of 21 photos, south to north).

Photo #124: SWMU 60, Tank Farm A, shoreline inspection of western shore of South Sweeper Creek, boom 10 and culvert with low flow of water (10 of 21 photos, south to north).

Photo #125: SWMU 60, Tank Farm A, shoreline inspection of western shore of South Sweeper Creek, petroleum seep at boom 10, view west (11of 21 photos, south to north).

Photo #126: SWMU 60, Tank Farm A, shoreline inspection of western shore of South Sweeper Creek, boom 10 north of culvert with petroleum seep in foreground (12 of 21 photos, south to north).

Photo #127: SWMU 60, Tank Farm A, shoreline inspection, close-up of sediment sample location 852S.

Photo #128: SWMU 60, Tank Farm A, shoreline inspection, surface water sample location 852, view east.

Photo #129: SWMU 60, Tank Farm A, shoreline inspection of western shore of South Sweeper Creek, boom 10, view northwest (13 of 21 photos, south to north).

Photo #130: SWMU 60, Tank Farm A, shoreline inspection of western shore of South Sweeper Creek, sheen on sediment next to boom 10, view northwest (14 of 21 photos, south to north).

Photo #131: SWMU 60, Tank Farm A, shoreline inspection of western shore of South Sweeper Creek, view north from end of boom 10 toward collapsed culvert and west bank (15 of 21 photos, south to north).

Photo #132: SWMU 60, Tank Farm A, shoreline inspection of western shore of South Sweeper Creek, view of washed out culvert, view north (16 of 21 photos, south to north).

Photo #133: SWMU 60, Tank Farm A, shoreline inspection of western shore of South Sweeper Creek, from collapsed culvert looking north (17 of 21 photos, south to north).

Photo #134: SWMU 60, Tank Farm A, shoreline inspection of western shore of South Sweeper Creek, view north (18 of 21 photos, south to north).

Photo #135: SWMU 60, Tank Farm A, shoreline inspection of western shore of South Sweeper Creek, view north (19 of 21 photos, south to north).

Photo #136: SWMU 60, Tank Farm A, shoreline inspection of western shore of South Sweeper Creek, view north toward Moffett Road bridge (20 of 21 photos, south to north).

Photo #137: SWMU 60, Tank Farm A, shoreline inspection of South Sweeper Creek, northeast side of lagoon, view north (21 of 21 photos, south to north).

SWMU 61, TANK FARM B

Photo #138: SWMU 61, Tank Farm B, upland well TFB-MW4, view northeast.

Photo #139: SWMU 61, Tank Farm B, North Sweeper Creek, view northeast of North Sweeper Creek from former tank farm location.

Photo #140: SWMU 61, Tank Farm B, lowland well 14-210, view east toward North Sweeper Creek.

Photo #141: SWMU 61, Tank Farm B, well 14-113, view northeast.

Photo #142: SWMU 61, Tank Farm B, north end of shoreline inspection, view south of North Sweeper Creek from well 14-113 (1 of 5 photos, south to north).

Photo #143: SWMU 61, Tank Farm B, surface water sample location NL 04 near well 14-113, view south (2 of 5 photos, south to north).

Photo #144: SWMU 61, Tank Farm B, close-up of sediment sample NL 04 (3 of 5 photos, south to north).

Photo #145: SWMU 61, Tank Farm B, creek confluence, view west (4 of 5 photos, south to north).

Photo #146: SWMU 61, Tank Farm B, north end of shoreline inspection, North Sweeper Creek, view north from NL-04 location (5 of 5 photos, south to north).

SWMU 62, NEW HOUSING FUEL LEAK

Photo #147: SWMU 62, New Housing Fuel Leak, Eagle Bay well 03-101, view southwest.

Photo #148: SWMU 62, New Housing Fuel Leak Area, Sandy Cove Housing, well 03-155 view east.

Photo #149: SWMU 62, New Housing Fuel Leak Area, Eagle Bay Housing, East Canal shoreline inspection, view south of boom 8 and petroleum seep (1 of 12 photos, north to south).

Photo #150: SWMU 62, New Housing Fuel Leak Area, Eagle Bay Housing, East Canal shoreline inspection, petroleum seep at boom 8, view south (2 of 12 photos, north to south).

Photo #151: SWMU 62, New Housing Fuel Leak Area, Eagle Bay Housing, East Canal shoreline inspection, shoreline petroleum seep at boom 8, view south (3 of 12 photos, north to south).

Photo #152: SWMU 62, New Housing Fuel Leak Area, Eagle Bay Housing, East Canal shoreline inspection, view south from boom 8 toward boom 3 (4 of 12 photos, north to south).

Photo #153: SWMU 62, New Housing Fuel Leak Area, Eagle Bay Housing, East Canal shoreline inspection, surface water sampling location NL-09, view south (5 of 12 photos, north to south).

Photo #154: SWMU 62, New Housing Fuel Leak Area, Eagle Bay Housing, East Canal shoreline inspection, surface water sample location NL-09, view west (6 of 12 photos, north to south).

Photo #155: SWMU 62, New Housing Fuel Leak Area, Eagle Bay Housing, East Canal shoreline inspection, view south (7 of 12 photos, north to south).

Photo #156: SWMU 62, New Housing Fuel Leak Area, Eagle Bay Housing, East Canal shoreline inspection, view south (8 of 12 photos, north to south).

Photo #157: SWMU 62, New Housing Fuel Leak Area, Eagle Bay Housing, East Canal shoreline inspection, view south (9 of 12 photos, north to south).

Photo #158: SWMU 62, New Housing Fuel Leak Area, Eagle Bay Housing, East Canal shoreline inspection, view south (10 of 12 photos, north to south).

Photo #159: SWMU 62, New Housing Fuel Leak Area, Eagle Bay Housing, East Canal shoreline inspection, view south (11 of 12 photos, north to south).

Photo #160: SWMU 62, New Housing Fuel Leak Area, Eagle Bay Housing, East Canal shoreline inspection, view south (12 of 12 photos, north to south).

TANKER SHED UST-42494

Photo #161: Tanker Shed UST-42494, well 04-290 in foreground, view north.

APPENDIX J

FREE PRODUCT RECOVERY SUMMARY

APPENDIX J

SUMMARY OF FREE PRODUCT RECOVERY AT ADAK ISLAND FORMER NAVAL COMPLEX

Free product recovery activities were performed at some of the long-term monitoring (LTM) sites during the 2013/2014 field year. Wells were selected for free product recovery on the basis of the observance of a significant amount of free product during past LTM sampling events.

In September 2006, free product recovery activities resumed for select wells at three sites: South of Runway 18-36 Area; NMCB Building T-1416 Expanded Area (NMCB); and solid waste management unit (SWMU) 62, New Housing Fuel Leak Area.

Free product recovery activities at NMCB ceased in September 2008 because endpoint criteria were achieved. However, in June 2010 free product recovery activities at the NMCB resumed due to observance of free product in surface water protection wells at the site.

In February 2012, with approval of ADEC, free product recovery was discontinued at South of Runway 18-36 Area because the practical endpoint criteria were met. Monitoring at Area 303 was added to the program beginning in June 2013 as required in the Final Decision Document (Navy 2012d).

A summary of the free product activities conducted at the SWMU 62, New Housing Fuel Leak Area during the 2013/2014 contract year (October 2013 through September 2014) is presented in the Final Remedial Action Summary Report, Free Product Recovery (Navy 2014c).

Free product recovery is also conducted at specific wells at additional sites. These activities were conducted concurrently with free product recovery activities at SWMU 62, New Housing Fuel Leak Area and Area 303. Free product activities were conducted at 19 additional wells located at the following four sites:

- NMCB Building T-1416 Expanded Area
- SA 80, Steam Plant 4
- SWMU 60, Tank Farm A
- Former Power Plant, Building T-1451

Corrected groundwater elevations, product thickness and volumes of recovered free product are presented in Tables J-1 through J-3 for the SWMU 62, New Housing Fuel Leak Area from October 2013 through September 2014. Corrected groundwater elevations are

presented in Table J-4 for Area 303, no free product was observed in any of the monitoring wells, and no product was recovered, during the October 2013 through September 2014 reporting period at Area 303. Tables J-5 and J-7 list the corrected groundwater elevations, observed product thicknesses and volumes of recovered product by month, respectively, for the wells at other sites.

Table J-1. Corrected Groundwater Elevation Summary from October 2013 through September 2014, SWMU 62, New Housing Fuel Leak Area

Monitoring Well	Well Elevation (ft above MLLW)	Total Depth of Well (ft bgs)	Oct-13 (ft above MLLW)	Nov-13 (ft above MLLW)	Dec-13 (ft above MLLW)	Jan-14 (ft above MLLW)	Feb-14 (ft above MLLW)	Mar-14 (ft above MLLW)	Apr-14 (ft above MLLW)	May-14 (ft above MLLW)	Jun-14 (ft above MLLW)	Jul-14 (ft above MLLW)	Aug-14 (ft above MLLW)	Sep-14 (ft above MLLW)	Minimum Groundwater Elevation (ft above MLLW)	Maximum Groundwater Elevation (ft above MLLW)	Average Groundwater Elevation (ft above MLLW)
03-101	26.01	26.00	3.93	NM	2.19	NM	NM	NM	4.72	NM	4.42	4.29	NM	3.45	2.19	4.72	3.83
03-102	17.27	18.50	3.45	NM	3.67	NM	NM	NM	4.34	NM	3.86	3.96	NM	3.07	3.07	4.34	3.73
HMW-303-3	31.64	31.20	4.54	NM	4.80	NM	NM	NM	5.25	NM	5.00	4.57	NM	3.86	3.86	5.25	4.67
HMW-303-11	30.35	32.50	4.18	NM	4.47	NM	NM	NM	4.96	NM	4.67	4.54	NM	3.69	3.69	4.96	4.42
MW-15	20.96	22.00	3.56	NM	3.80	NM	NM	NM	4.39	NM	4.00	4.03	NM	3.14	3.14	4.39	3.82
MW-303-8	27.20	30.00	5.21	NM	5.61	NM	NM	NM	5.87	NM	5.81	5.16	NM	4.42	4.42	5.87	5.35
MW-303-12	25.64	35.50	5.01	NM	5.39	NM	NM	NM	5.70	NM	5.58	4.96	NM	4.25	4.25	5.70	5.15
RW-303-4	26.31	38.00	4.95	NM	5.35	NM	NM	NM	5.68	NM	5.53	4.92	NM	4.23	4.23	5.68	5.11
RW-303-15	31.26	34.10	4.13	NM	4.40	NM	NM	NM	4.92	NM	4.60	4.44	NM	3.61	3.61	4.92	4.35
Sumps																	
SWMU62-R1	6.52	10.30	-0.36	NM	-0.28	NM	NM	NM	0.26	NM	-0.19	0.65	NM	-0.56	-0.56	0.65	-0.08
SWMU62-R2	6.80	10.34	0.11	NM	0.19	NM	NM	NM	0.82	NM	0.31	1.21	NM	-0.11	-0.11	1.21	0.42
SWMU62-R3	7.47	10.48	1.04	NM	1.14	NM	NM	NM	1.76	NM	1.24	2.23	NM	0.81	0.81	2.23	1.37
SWMU62-R4	8.04	10.19	1.82	NM	1.92	NM	NM	NM	2.56	NM	2.02	3.02	NM	1.59	1.59	3.02	2.15
SWMU62-R5	8.97	9.30	3.00	NM	3.08	NM	NM	NM	3.74	NM	3.19	4.20	NM	2.76	2.76	4.20	3.33
SWMU62-R6	9.52	9.90	3.14	NM	3.25	NM	NM	NM	3.90	NM	3.33	4.35	NM	2.88	2.88	4.35	3.48
Average Elevation	NA	NA	3.18	NM	3.26	NM	NM	NM	3.92	NM	3.56	3.77	NM	2.74	NA	NA	NA

Notes:
Groundwater elevations were corrected for free product if present.
bgs – below ground surface
ft – feet
MLLW – mean lower low water
NA – not applicable
NM – not measured

Table J-2. Product Thickness Summary from October 2013 through September 2014, SWMU 62, New Housing Fuel Leak Area

Monitoring Well	Oct-13 (feet)	Nov-13 (feet)	Dec-13 (feet)	Jan-14 (feet)	Feb-14 (feet)	Mar-14 (feet)	Apr-14 (feet)	May-14 (feet)	Jun-14 (feet)	Jul-14 (feet)	Aug-14 (feet)	Sep-14 (feet)	Minimum Product Thickness (feet)	Maximum Product Thickness (feet)	Average Product Thickness (feet)	Total Months Product Found
03-101	**0.51**	NM	**0.10**	NM	NM	NM	**0.01**	NM	0	0	NM	**0.03**	0	**0.51**	**0.11**	4
03-102	0	NM	**0.04**	NM	NM	NM	**0.24**	NM	**0.12**	**0.07**	NM	0	0	**0.24**	**0.08**	4
HMW-303-3	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
HMW-303-11	0	NM	0	NM	NM	NM	**0.02**	NM	0	0	NM	**0.02**	0	**0.02**	**0.01**	2
MW-15	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
MW-303-8	**0.07**	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	**0.07**	**0.01**	1
MW-303-12	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
RW-303-4	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
RW-303-15	0	NM	**0.08**	NM	NM	NM	0	NM	**0.21**	0	NM	0	0	**0.21**	**0.05**	2
Sumps																
SWMU62-R1	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
SWMU62-R2	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
SWMU62-R3	**0.14**	NM	**0.10**	NM	NM	NM	**0.13**	NM	**0.09**	**0.10**	NM	**0.18**	**0.09**	**0.18**	**0.12**	6
SWMU62-R4	**0.08**	NM	**0.07**	NM	NM	NM	**0.14**	NM	**0.09**	**0.03**	NM	**0.08**	**0.03**	**0.14**	**0.08**	6
SWMU62-R5	0	NM	**0.01**	NM	NM	NM	0	NM	0	0	NM	**0.02**	0	**0.02**	**0.01**	1
SWMU62-R6	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
Average Product Thickness	**0.06**	NM	**0.03**	NM	NM	NM	**0.04**	NM	**0.04**	**0.01**	NM	**0.02**	NA	NA	NA	NA

Notes:
Bolded well IDs indicate monitoring wells that had product observed during the reporting period.
NA – not applicable
NM – not measured

Table J-3. Recovered Product Volume Summary from October 2013 through September 2014, SWMU 62, New Housing Fuel Leak Area

Monitoring Well	Oct-13 (gallons)	Nov-13 (gallons)	Dec-13 (gallons)	Jan-14 (gallons)	Feb-14 (gallons)	Mar-14 (gallons)	Apr-14 (gallons)	May-14 (gallon)	Jun-14 (gallon)	Jul-14 (gallons)	Aug-14 (gallons)	Sep-14 (gallons)	Minimum Volume of Recovered Product (gallons)	Maximum Volume of Recovered Product (gallons)	Average Volume of Recovered Product (gallons)	Total Volume of Recovered Product (gallons)
03-101	**0.29**	NM	**0.12**	NM	NM	NM	0	NM	0	0	NM	0	0	**0.29**	**0.07**	**0.41**
03-102	0	NM	0	NM	NM	NM	**0.13**	NM	**0.04**	0	NM	0	0	**0.13**	**0.03**	**0.16**
HMW-303-3	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
HMW-303-11	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
MW-15	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
MW-303-8	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
MW-303-12	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
RW-303-4	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
RW-303-15	0	NM	0	NM	NM	NM	0	NM	**0.09**	0	NM	0	0	**0.09**	**0.02**	**0.09**
Sumps																
SWMU62-R1	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
SWMU62-R2	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
SWMU62-R3	**1.11**	NM	**0.95**	NM	NM	NM	**0.97**	NM	**0.96**	**0.95**	NM	**0.95**	**0.95**	**1.11**	**0.98**	**5.89**
SWMU62-R4	**1.11**	NM	**0.95**	NM	NM	NM	**1.10**	NM	**0.96**	**0.95**	NM	**0.79**	**0.79**	**1.11**	**0.98**	**5.86**
SWMU62-R5	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
SWMU62-R6	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
Total Volume of Recovered Product (gallons)	**2.51**	NM	**2.02**	NM	NM	NM	**2.20**	NM	**2.04**	**1.90**	NM	**1.74**	NA	NA	NA	**12.41**
6-Month Moving Average	**1.55**	**1.55**	**1.49**	**1.12**	**1.12**	**0.75**	**0.70**	**0.70**	**0.71**	**1.02**	**1.02**	**1.31**	NA	NA	NA	--

Notes:
Bolded well IDs indicate monitoring wells that had product recovered during the reporting period.
NA – not applicable
NM – not measured

Table J-4. Corrected Groundwater Elevation Summary from October 2013 through September 2014, Area 303

Monitoring Well	Well Elevation (ft above MLLW)	Total Depth of Well (ft bgs)	Oct-13 (ft above MLLW)	Nov-13 (ft above MLLW)	Dec-14 (ft above MLLW)	Jan-14 (ft above MLLW)	Feb-14 (ft above MLLW)	Mar-14 (ft above MLLW)	Apr-14 (ft above MLLW)	May-14 (ft above MLLW)	Jun-14 (ft above MLLW)	Jul-14 (ft above MLLW)	Aug-14 (ft above MLLW)	Sep-14 (ft above MLLW)	Minimum Groundwater Elevation (ft above MLLW)	Maximum Groundwater Elevation (ft above MLLW)	Average Groundwater Elevation (ft above MLLW)
03-012	9.27	9.0	1.81	1.87	1.90	2.19	NM	NM	NM	NM	NM	NM	NM	NM	1.81	2.19	1.94
03-107	31.30	30.5	4.36	4.96	4.71	4.86	NM	NM	NM	NM	NM	NM	NM	NM	4.36	4.96	4.72
04-211	28.45	30.0	5.21	6.03	5.81	5.82	NM	NM	NM	NM	NM	NM	NM	NM	5.21	6.03	5.72
MRP-MW2	26.99	25.9	6.28	7.21	7.03	6.96	NM	NM	NM	NM	NM	NM	NM	NM	6.28	7.21	6.87
MW-303-28	32.83	34.5	5.15	5.99	5.71	5.74	5.70	5.54	5.94	NM	5.92	5.43	NM	4.66	4.66	5.99	5.58
MW-303-30	31.20	32.5	4.18	4.75	4.51	4.72	NM	NM	NM	NM	NM	NM	NM	NM	4.18	4.75	4.54
MW-303-31	31.82	33.0	4.83	5.56	5.31	5.41	NM	NM	NM	NM	NM	NM	NM	NM	4.83	5.56	5.28
MW-303-32	29.16	28.5	5.55	6.48	6.24	6.23	NM	NM	NM	NM	NM	NM	NM	NM	5.55	6.48	6.13
MW-303-33	27.18	27.5	5.12	8.37	5.63	5.75	NM	NM	NM	NM	NM	NM	NM	NM	5.12	8.37	6.22
MW-303-37	16.23	17.5	3.53	3.91	3.71	4.09	NM	NM	NM	NM	NM	NM	NM	NM	3.53	4.09	3.81
MW-303-38	27.68	27.0	3.04	3.70	3.45	3.57	NM	NM	NM	NM	NM	NM	NM	NM	3.04	3.70	3.44
MW-303-39	23.43	26.0	2.54	3.08	2.84	3.10	2.90	2.76	3.35	NM	3.02	2.91	NM	2.08	2.08	3.35	2.86
MW-303-40	17.68	14.0	11.59	12.10	11.73	11.86	NM	NM	NM	NM	NM	NM	NM	NM	11.59	12.10	11.82
MW-303-41	30.73	25.0	10.84	12.16	12.32	11.54	NM	NM	NM	NM	NM	NM	NM	NM	10.84	12.32	11.71
MW-303-42	32.13	30.0	4.11	5.05	4.77	4.75	4.75	4.55	4.92	NM	4.94	4.34	NM	3.55	3.55	5.05	4.57
MW-303-43	32.50	30.0	4.46	5.48	5.22	5.14	NM	NM	NM	NM	NM	NM	NM	NM	4.46	5.48	5.08
MW-303-44	32.91	30.0	4.33	5.29	4.99	4.93	NM	NM	NM	NM	NM	NM	NM	NM	4.33	5.29	4.89
Average Elevation	NA	NA	5.11	NM	5.56	NM	NM	NM	4.64	NM	4.47	4.17	NM	3.37	NA	NA	NA

Notes:
Groundwater elevations were corrected for free product if present.
bgs – below ground surface
ft – feet
MLLW – mean lower low water
NA – not applicable
NM – not measured

Table J-5. Corrected Groundwater Elevation Summary from October 2013 through September 2014, Other Sites

Monitoring Well	Well Elevation (ft above MLLW)	Total Depth of Well (ft bgs)	Oct-13 (ft above MLLW)	Nov-13 (ft above MLLW)	Dec-13 (ft above MLLW)	Jan-14 (ft above MLLW)	Feb-14 (ft above MLLW)	Mar-14 (ft above MLLW)	Apr-14 (ft above MLLW)	May-14 (ft above MLLW)	Jun-14 (ft above MLLW)	Jul-14 (ft above MLLW)	Aug-14 (ft above MLLW)	Sep-14 (ft above MLLW)	Minimum Groundwater Elevation (ft above MLLW)	Maximum Groundwater Elevation (ft above MLLW)	Average Groundwater Elevation (ft above MLLW)
NMCB Building T-1416 Expanded Area																	
02-300	11.99	14.0	3.12	NM	2.82	NM	NM	NM	3.68	NM	2.70	2.27	NM	2.07	2.07	3.68	2.78
02-497	9.15	14.0	3.09	NM	2.76	NM	NM	NM	3.77	NM	2.79	2.52	NM	2.30	2.30	3.77	2.87
02-815	16.35	17.5	3.10	NM	2.76	NM	NM	NM	3.97	NM	2.96	2.73	NM	2.36	2.36	3.97	2.98
02-818	11.55	15.0	3.14	NM	2.76	NM	NM	NM	3.85	NM	2.86	2.72	NM	2.49	2.49	3.85	2.97
NMCB-07	11.85	19.3	3.03	NM	2.70	NM	NM	NM	3.66	NM	2.68	2.40	NM	2.23	2.23	3.66	2.78
NMCB-10	12.95	17.8	2.85	NM	2.57	NM	NM	NM	3.54	NM	2.73	2.28	NM	2.27	2.27	3.54	2.70
SA 80 Steam Plant 4																	
04-155	27.77	34.0	12.93	NM	13.34	NM	NM	NM	14.21	NM	13.47	12.55	NM	12.36	12.36	14.21	13.14
04-157	28.18	25.0	10.23	NM	10.68	NM	NM	NM	11.70	NM	11.02	9.98	NM	8.88	8.88	11.70	10.41
04-158	27.36	30.0	10.17	NM	10.45	NM	NM	NM	12.12	NM	10.57	8.32	NM	8.53	8.53	12.12	10.03
SWMU 60 Tank Farm A																	
652	12.37	15.3	3.73	NM	3.49	NM	NM	NM	4.18	NM	3.29	2.83	NM	3.12	2.83	4.18	3.44
653	15.14	15.3	6.18	NM	4.31	NM	NM	NM	6.74	NM	4.42	3.24	NM	5.10	3.24	6.74	5.00
Former Power Plant, Building T-1451																	
MW-1451-1	6.56	12.0	-0.17	-0.38	-0.12	0.36	0.49	-0.07	0.70	NM	-0.01	1.04	NM	-0.65	-0.65	1.04	0.12
MW-1451-2	6.24	11.5	-0.02	-0.09	0.11	0.56	NM	NM	NM	NM	NM	NM	NM	NM	-0.09	0.56	0.14
MW-1451-3	5.09	11.0	-0.34	-0.62	-0.30	0.14	NM	NM	NM	NM	NM	NM	NM	NM	-0.62	0.14	-0.28
MW-1451-4	5.99	11.0	-0.27	-0.47	-0.19	0.25	NM	NM	NM	NM	NM	NM	NM	NM	-0.47	0.25	-0.17
MW-1451-5	7.50	11.0	0.86	1.01	0.87	1.43	NM	NM	NM	NM	NM	NM	NM	NM	0.86	1.43	1.04
MW-1451-6	6.15	11.5	1.07	1.20	1.06	1.59	1.20	1.06	1.96	NM	1.21	1.70	NM	0.65	0.65	1.96	1.27
MW-1451-7	7.33	11.0	0.99	1.10	1.01	1.52	1.10	0.99	1.90	NM	1.17	1.69	NM	0.59	0.59	1.90	1.20
MW-1451-8	8.07	13.0	1.64	1.96	1.58	2.12	NM	NM	NM	NM	NM	NM	NM	NM	1.58	2.12	1.82
MW-1451-9	9.91	13.5	1.59	1.87	1.55	2.06	NM	NM	NM	NM	NM	NM	NM	NM	1.55	2.06	1.76

Notes:
Groundwater elevations were corrected for free product if present.
bgs - below ground surface
ft - feet
MLLW - mean lower low water
NM - not measured

Table J-6. Product Thickness Summary from October 2013 through September 2014, Other Sites

Monitoring Well	Oct-13 (feet)	Nov-13 (feet)	Dec-13 (feet)	Jan-14 (feet)	Feb-14 (feet)	Mar-14 (feet)	Apr-14 (feet)	May-14 (feet)	Jun-14 (feet)	Jul-14 (feet)	Aug-14 (feet)	Sep-14 (feet)	Minimum Product Thickness (ft)	Maximum Product Thickness (ft)	Average Product Thickness (ft)	Total Months Product Found
NMCB Building T-1416 Expanded Area																
02-300	**0.12**	NM	**0.03**	NM	NM	NM	0	NM	**0.06**	**0.01**	NM	**0.11**	0	**0.12**	**0.06**	**5**
02-497	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
02-815	0	NM	0	NM	NM	NM	**0.02**	NM	0	0	NM	**0.03**	0	**0.03**	**0.01**	**2**
02-818	**0.06**	NM	0	NM	NM	NM	**0.01**	NM	0	0	NM	0	0	**0.06**	**0.01**	**2**
NMCB-07	**0.15**	NM	**0.08**	NM	NM	NM	**0.17**	NM	**0.25**	**0.20**	NM	**0.48**	**0.08**	**0.48**	**0.22**	**6**
NMCB-10	**0.01**	NM	**0.02**	NM	NM	NM	0	NM	**0.01**	0	NM	**0.03**	0	**0.03**	**0.01**	**4**
SA 80 Steam Plant 4																
04-155	**0.11**	NM	0	NM	NM	NM	**0.15**	NM	**0.02**	0	NM	**0.03**	0	**0.15**	**0.05**	**4**
04-157	**0.31**	NM	**0.73**	NM	NM	NM	**0.30**	NM	**0.18**	**0.01**	NM	**0.02**	**0.02**	**0.73**	**0.26**	**6**
04-158	**0.02**	NM	**0.17**	NM	NM	NM	**0.28**	NM	**0.15**	**0.04**	NM	0	0	**0.28**	**0.11**	**5**
SWMU 60 Tank Farm A																
652	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
653	0	NM	0	NM	NM	NM	0	NM	0	0	NM	**0.05**	0	**0.05**	**0.01**	0
Former Power Plant, Building T-1451																
MW-1451-1	**0.02**	0	0	0	0	0	0	NM	0	0	NM	**0.80**	0	**0.80**	**0.14**	**2**
MW-1451-2	0	0	0	0	NM	NM	NM	NM	NM	NM	NM	NM	0	0	0	0
MW-1451-3	0	0	0	0	NM	NM	NM	NM	NM	NM	NM	NM	0	0	0	0
MW-1451-4	0	0	0	0	NM	NM	NM	NM	NM	NM	NM	NM	0	0	0	0
MW-1451-5	0	0	0	0	NM	NM	NM	NM	NM	NM	NM	NM	0	0	0	0
MW-1451-6	**0.13**	**0.15**	0	**0.03**	0.00	**0.02**	0	NM	**0.04**	0	NM	**0.02**	0	**0.15**	**0.07**	**6**
MW-1451-7	**0.37**	**0.43**	**0.34**	**1.16**	**0.45**	**0.41**	**1.31**	NM	**0.10**	**0.22**	NM	**0.44**	**0.10**	**1.31**	**0.87**	**10**
MW-1451-8	0	0	0	0	NM	NM	NM	NM	NM	NM	NM	NM	0	0	0	0
MW-1451-9	0	0	0	0	NM	NM	NM	NM	NM	NM	NM	NM	0	0	0	0

Notes:
Bolded well IDs indicate monitoring wells that had product observed during the reporting period.
NM - not measured

Table J-7. Recovered Product Volume Summary from October 2013 through September 2014, Other Sites

Monitoring Well	Oct-13 (gallons)	Nov-13 (gallons)	Dec-13 (gallons)	Jan-14 (gallons)	Feb-14 (gallons)	Mar-14 (gallons)	Apr-14 (gallons)	May-14 (gallons)	Jun-14 (gallons)	Jul-14 (gallons)	Aug-14 (gallons)	Sep-14 (gallons)	Minimum Volume of Recovered Product (gallons)	Maximum Volume of Recovered Product (gallons)	Average Volume of Recovered Product (gallons)	Total volume of Recovered Product (gallons)
NMCB Building T-1416 Expanded Area																
02-300	**0.03**	0	0	0	NM	NM	0	NM	**0**	0	NM	**0.02**	0	**0.03**	**0.01**	**0.05**
02-497	0	0	0	0	NM	NM	0	NM	0	0	NM	0	0	0	0	0
02-815	0	0	0	0	NM	NM	0	NM	0	0	NM	0	0	0	0	0
02-818	0	0	0	0	NM	NM	0	NM	0	0	NM	0	0	0	0	0
NMCB-07	**0.09**	0	**0.40**	0	NM	NM	**0.06**	NM	**0.17**	**0.10**	NM	**0.53**	0	**0.53**	**0.23**	**1.35**
NMCB-10	0	0	0	0	NM	NM	0	NM	0	0	NM	0	0	0	0	0
Total Volume of Recovered Product (gallons)	**0.12**	0	**0.40**	0	NM	NM	**0.06**	NM	**0.17**	**0.10**	NM	**0.55**	NA	NA	NA	**1.40**
SA 80 Steam Plant 4																
04-155	**0.06**	0	0	0	NM	NM	**0.08**	NM	0	0	NM	0	0	**0.08**	**0.02**	**0.13**
04-157	**0.16**	0	**0.43**	0	NM	NM	**0.15**	NM	**0.11**	0	NM	0	0	**0.43**	**0.14**	**0.84**
04-158	0	0	**0.11**	0	NM	NM	**0.11**	NM	**0.08**	0	NM	0	0	**0.11**	**0.05**	**0.30**
Total Volume of Recovered Product (gallons)	**0.22**	0	**0.54**	0	NM	NM	**0.34**	NM	**0.19**	0	NM	0	NA	NA	NA	**1.28**
SWMU 60 Tank Farm A																
652	0	0	0	0	NM	NM	0	NM	0	0	NM	0	0	0	0	0
653	0	0	0	0	NM	NM	0	NM	0	0	NM	0	0	0	0	0
Total Volume of Recovered Product (gallons)	0	0	0	0	NM	NM	0	NM	0	0	NM	0	NA	NA	NA	NA
Former Power Plant, Building T-1451																
MW-1451-1	0	0	0	0	0	0	0	NM	0	0	NM	**0.18**	0	**0.18**	**0.03**	**0.18**
MW-1451-2	0	0	0	0	NM	NM	NM	NM	NM	NM	NM	0	0	0	0	0
MW-1451-3	0	0	0	0	NM	NM	NM	NM	NM	NM	NM	0	0	0	0	0
MW-1451-4	0	0	0	0	NM	NM	NM	NM	NM	NM	NM	0	0	0	0	0
MW-1451-5	0	0	0	0	NM	NM	NM	NM	NM	NM	NM	0	0	0	0	0
MW-1451-6	**0.05**	**0.06**	0	0	0	0	0	NM	0	0	NM	0	0	**0.06**	**0.02**	**0.11**
MW-1451-7	**0.78**	**0.36**	**0.51**	**0.96**	**1.13**	**1.11**	**1.57**	NM	**1.00**	**0.34**	NM	**0.62**	0.34	**1.57**	**1.40**	**8.39**
MW-1451-8	0	0	0	0	NM	NM	NM	NM	0	0	NM	0	0	0	0	0
MW-1451-9	0	0	0	0	NM	NM	NM	NM	0	0	NM	0	0	0	0	0
Total Volume of Recovered Product (gallons)	**0.83**	**0.42**	**0.51**	**0.96**	**1.13**	**1.11**	**1.57**	NM	**1.00**	**0.34**	NM	**0.80**	NA	NA	NA	**8.68**
Total Volume of Recovered Product (gallons) All Sites	**1.17**	**0.42**	**1.45**	**0.96**	**1.13**	**1.11**	**1.97**	NM	**1.36**	**0.44**	NM	**1.35**	NA	NA	NA	**11.36**

Notes:
Bolded well IDs indicate monitoring wells that had product observed during the reporting period.
NM - not measured

APPENDIX K

TIDE CHARTS

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<< < Aug, 2014 > >> 51.8633° N, 176.6317° W

	Dif	Height		Dif	Height		Dif	Height		Dif	Height		Dif	Sun	Moon
8/1	N/A	L 1'8"	5:32AM	0'3"	H 2'0"	9:42AM	0'8"	L 1'3"	3:22PM	1'9"	H 3'0"	10:39PM	1'9"	07:09-10:35	01:34-12:13
8/2	1'9"	L 1'3"	6:02AM	0'7"	H 1'11"	11:29AM	0'3"	L 1'7"	3:37PM	1'7"	H 3'2"	10:43PM	2'4"	07:10-10:33	02:40-12:36
8/3	2'4"	L 0'9"	6:34AM	1'1"	H 1'11"	1:22PM	0'0"	L 1'10"	3:35PM	1'6"	H 3'5"	10:53PM	3'0"	07:12-10:31	03:48-01:03
8/4	3'0"	L 0'4"	7:09AM	3'4"	H 3'8"	11:10PM	3'9"	- -	-	-	- -	-	-	07:13-10:30	04:55-01:35
8/5	3'9"	L -0'0"	7:47AM	4'0"	H 3'11"	11:37PM	4'4"	- -	-	-	- -	-	-	07:15-10:28	06:01-02:13
8/6	4'4"	L -0'4"	8:28AM	4'6"	- -	-	-	- -	-	-	- -	-	-	07:16-10:26	07:03-03:00
8/7	4'6"	H 4'2"	12:13AM	4'9"	L -0'7"	9:12AM	4'11"	- -	-	-	- -	-	-	07:18-10:24	07:59-03:56
8/8	4'11"	H 4'3"	12:58AM	5'0"	L -0'9"	9:58AM	5'0"	- -	-	-	- -	-	-	07:20-10:22	08:47-05:04
8/9	5'0"	H 4'3"	1:50AM	5'0"	L -0'9"	10:47AM	4'10"	- -	-	-	- -	-	-	07:21-10:20	09:28-06:20
8/10	4'10"	H 4'1"	2:52AM	4'8"	L -0'7"	11:36AM	3'2"	H 2'7"	8:24PM	0'0"	L 2'7"	9:30PM	1'2"	07:23-10:19	10:03-07:42
8/11	1'2"	H 3'9"	4:03AM	4'1"	L -0'3"	12:26PM	3'0"	H 2'8"	8:09PM	0'4"	L 2'4"	11:56PM	1'0"	07:25-10:16	10:34-09:05
8/12	1'0"	H 3'4"	5:28AM	3'3"	L 0'0"	1:15PM	2'10"	H 2'10"	8:28PM	1'0"	- -	-	-	07:26-10:14	11:02-10:27
8/13	1'0"	L 1'10"	1:39AM	1'1"	H 2'11"	7:04AM	2'5"	L 0'6"	2:04PM	2'7"	H 3'1"	8:55PM	1'9"	07:28-10:13	11:30-11:47
8/14	1'9"	L 1'3"	3:03AM	1'4"	H 2'8"	8:46AM	1'8"	L 0'11"	2:53PM	2'4"	H 3'4"	9:28PM	2'7"	07:29-10:11	11:59-01:05
8/15	2'7"	L 0'8"	4:13AM	1'9"	H 2'6"	10:25AM	1'1"	L 1'5"	3:40PM	2'1"	H 3'6"	10:04PM	3'3"	07:31-10:09	12:00-02:19
8/16	3'3"	L 0'3"	5:16AM	2'3"	H 2'6"	11:59AM	0'8"	L 1'9"	4:27PM	1'10"	H 3'8"	10:41PM	3'9"	07:33-10:07	12:30-03:29
8/17	3'9"	L -0'1"	6:14AM	2'7"	H 2'6"	1:28PM	0'4"	L 2'1"	5:12PM	1'7"	H 3'9"	11:19PM	4'0"	07:34-10:05	01:05-04:33
8/18	4'0"	L -0'3"	7:08AM	2'10"	H 2'7"	2:54PM	0'2"	L 2'4"	5:53PM	1'4"	H 3'9"	11:57PM	4'1"	07:36-10:02	01:44-05:31
8/19	4'1"	L -0'4"	8:01AM	3'0"	H 2'7"	4:23PM	0'0"	L 2'7"	6:26PM	1'1"	- -	-	-	07:37-10:00	02:28-06:23
8/20	1'1"	H 3'8"	12:33AM	4'0"	L -0'3"	8:51AM	3'11"	- -	-	-	- -	-	-	07:39-09:58	03:17-07:07
8/21	3'11"	H 3'7"	1:07AM	3'9"	L -0'2"	9:39AM	3'8"	- -	-	-	- -	-	-	07:41-09:56	04:12-07:45
8/22	3'8"	H 3'5"	1:39AM	3'6"	L -0'0"	10:24AM	3'4"	- -	-	-	- -	-	-	07:42-09:54	05:10-08:17
8/23	3'4"	H 3'3"	2:11AM	3'1"	L 0'1"	11:07AM	2'11"	- -	-	-	- -	-	-	07:44-09:52	06:10-08:46
8/24	2'11"	H 3'1"	2:47AM	2'9"	L 0'4"	11:46AM	2'6"	- -	-	-	- -	-	-	07:46-09:50	07:11-09:11
8/25	2'6"	H 2'11"	3:34AM	2'3"	L 0'7"	12:22PM	1'11"	H 2'6"	9:17PM	0'0"	- -	-	-	07:47-09:48	08:14-09:34
8/26	0'0"	L 2'6"	12:29AM	0'2"	H 2'8"	4:42AM	1'9"	L 0'10"	12:57PM	1'8"	H 2'6"	8:58PM	0'3"	07:49-09:45	09:17-09:57
8/27	0'3"	L 2'2"	1:49AM	0'3"	H 2'5"	6:11AM	1'3"	L 1'1"	1:30PM	1'4"	H 2'6"	8:48PM	0'8"	07:50-09:43	10:21-10:19
8/28	0'8"	L 1'10"	2:44AM	0'5"	H 2'3"	7:50AM	0'10"	L 1'5"	2:02PM	1'2"	H 2'7"	8:46PM	1'1"	07:52-09:41	11:26-10:42
8/29	1'1"	L 1'5"	3:29AM	0'9"	H 2'3"	9:25AM	0'6"	L 1'8"	2:32PM	1'0"	H 2'9"	8:50PM	1'8"	07:54-09:39	12:31-11:08
8/30	1'8"	L 1'1"	4:10AM	1'2"	H 2'3"	10:55AM	0'3"	L 2'0"	2:56PM	0'11"	H 2'11"	9:00PM	2'3"	07:55-09:37	01:37-11:38
8/31	2'3"	L 0'8"	4:50AM	1'8"	H 2'4"	12:22PM	0'1"	L 2'3"	3:13PM	0'10"	H 3'2"	9:17PM	N/A	07:57-09:34	02:43-12:00

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Home > Alaska Tides > Adak Island > Sweeper Cove

<< < Sep, 2014 > >> 51.8633° N, 176.6317° W

	Dif	Height			Dif	Height			Dif	Height			Dif	Height			Sun	Moon
9/1	N/A	L	0'3"	5:30AM	2'2"	H	2'6"	1:54PM	0'0"	L	2'5"	3:13PM	0'11"	H	3'5"	9:43PM	3'5"	07:58-09:32	03:48-12:12
9/2	3'5"	L	0'0"	6:12AM	3'8"	H	3'8"	10:18PM	3'10"	-	-	-	-	-	-	-	-	08:00-09:30	04:50-12:54
9/3	3'10"	L	-0'2"	6:56AM	4'1"	H	3'10"	11:01PM	4'2"	-	-	-	-	-	-	-	-	08:02-09:28	05:46-01:45
9/4	4'2"	L	-0'4"	7:41AM	4'3"	H	3'11"	11:52PM	4'3"	-	-	-	-	-	-	-	-	08:03-09:25	06:36-02:46
9/5	4'3"	L	-0'4"	8:29AM	4'3"	-	-	-	-	-	-	-	-	-	-	-	-	08:05-09:23	07:20-03:55
9/6	4'3"	H	3'11"	12:50AM	4'1"	L	-0'2"	9:18AM	2'8"	H	2'5"	5:20PM	0'0"	L	2'4"	7:29PM	1'3"	08:07-09:21	07:57-05:12
9/7	1'3"	H	3'8"	1:58AM	3'8"	L	0'0"	10:08AM	2'5"	H	2'6"	5:32PM	0'3"	L	2'2"	9:11PM	1'3"	08:08-09:19	08:29-06:33
9/8	1'3"	H	3'5"	3:15AM	3'1"	L	0'4"	11:00AM	2'2"	H	2'7"	5:54PM	0'9"	L	1'9"	10:47PM	1'4"	08:10-09:16	09:00-07:55
9/9	1'4"	H	3'2"	4:46AM	2'4"	L	0'9"	11:52AM	1'11"	H	2'9"	6:23PM	1'5"	-	-	-	-	08:11-09:14	09:29-09:18
9/10	1'5"	L	1'4"	12:14AM	1'7"	H	2'11"	6:26AM	1'8"	L	1'2"	12:47PM	1'9"	H	2'11"	6:58PM	2'1"	08:13-09:12	09:58-10:38
9/11	2'1"	L	0'10"	1:30AM	2'0"	H	2'10"	8:07AM	1'2"	L	1'7"	1:42PM	1'6"	H	3'2"	7:36PM	2'9"	08:15-09:09	10:29-11:56
9/12	2'9"	L	0'4"	2:39AM	2'5"	H	2'10"	9:41AM	0'10"	L	1'11"	2:40PM	1'4"	H	3'3"	8:18PM	3'3"	08:16-09:07	11:03-01:10
9/13	3'3"	L	0'0"	3:41AM	2'11"	H	2'11"	11:03AM	0'8"	L	2'3"	3:37PM	1'2"	H	3'5"	9:02PM	3'7"	08:18-09:05	11:42-02:19
9/14	3'7"	L	-0'2"	4:37AM	3'2"	H	3'0"	12:15PM	0'6"	L	2'5"	4:34PM	1'0"	H	3'5"	9:47PM	3'9"	08:20-09:02	12:00-03:21
9/15	3'9"	L	-0'3"	5:32AM	3'4"	H	3'0"	1:20PM	0'5"	L	2'6"	5:28PM	0'10"	H	3'5"	10:32PM	3'8"	08:21-09:00	12:25-04:16
9/16	3'8"	L	-0'3"	6:23AM	3'3"	H	3'0"	2:19PM	0'4"	L	2'7"	6:19PM	0'9"	H	3'4"	11:17PM	3'6"	08:23-08:58	01:13-05:04
9/17	3'6"	L	-0'1"	7:12AM	3'1"	H	2'11"	3:15PM	0'3"	L	2'7"	7:07PM	0'7"	-	-	-	-	08:24-08:55	02:06-05:44
9/18	0'7"	H	3'3"	12:01AM	3'2"	L	0'0"	8:00AM	2'9"	H	2'10"	4:07PM	0'3"	L	2'7"	7:52PM	0'6"	08:26-08:53	03:03-06:19
9/19	0'6"	H	3'1"	12:45AM	2'9"	L	0'3"	8:45AM	2'5"	H	2'9"	4:53PM	0'2"	L	2'6"	8:39PM	0'5"	08:28-08:51	04:02-06:48
9/20	0'5"	H	2'11"	1:31AM	2'4"	L	0'7"	9:27AM	2'0"	H	2'7"	5:27PM	0'2"	L	2'4"	9:28PM	0'5"	08:29-08:48	05:03-07:15
9/21	0'5"	H	2'9"	2:24AM	1'10"	L	0'10"	10:08AM	1'7"	H	2'6"	5:47PM	0'3"	L	2'2"	10:23PM	0'5"	08:31-08:46	06:05-07:39
9/22	0'5"	H	2'7"	3:29AM	1'5"	L	1'2"	10:46AM	1'3"	H	2'5"	5:55PM	0'6"	L	1'11"	11:20PM	0'6"	08:33-08:44	07:09-08:02
9/23	0'6"	H	2'6"	4:50AM	0'11"	L	1'6"	11:23AM	0'11"	H	2'5"	5:56PM	0'9"	-	-	-	-	08:34-08:41	08:13-08:24
9/24	0'9"	L	1'8"	12:13AM	0'9"	H	2'5"	6:24AM	0'7"	L	1'10"	12:01PM	0'8"	H	2'6"	5:57PM	1'2"	08:36-08:39	09:17-08:48
9/25	1'2"	L	1'4"	1:02AM	1'1"	H	2'5"	8:01AM	0'4"	L	2'1"	12:40PM	0'6"	H	2'7"	6:03PM	1'7"	08:38-08:37	10:23-09:13
9/26	1'7"	L	1'0"	1:47AM	1'7"	H	2'7"	9:32AM	0'2"	L	2'5"	1:21PM	0'4"	H	2'9"	6:15PM	2'1"	08:39-08:34	11:29-09:42
9/27	2'1"	L	0'8"	2:30AM	2'1"	H	2'9"	10:50AM	0'1"	L	2'8"	2:00PM	0'3"	H	3'0"	6:36PM	2'7"	08:41-08:32	12:35-10:15
9/28	2'7"	L	0'4"	3:12AM	2'7"	H	2'11"	11:57AM	0'0"	L	2'10"	2:35PM	0'3"	H	3'2"	7:06PM	3'1"	08:42-08:30	01:40-10:54
9/29	3'1"	L	0'0"	3:55AM	2'11"	H	3'0"	12:54PM	0'0"	L	3'0"	3:07PM	0'4"	H	3'4"	7:46PM	3'6"	08:44-08:27	02:42-11:41
9/30	3'6"	L	-0'1"	4:38AM	3'2"	H	3'1"	1:39PM	0'0"	L	3'0"	3:41PM	0'5"	H	3'6"	8:36PM	N/A	08:46-08:25	03:40-12:00

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APPENDIX L

RESPONSE TO REGULATOR COMMENTS

U.S. Environmental Protection Agency
Comments on the Draft 2014 Annual Groundwater and Landfill Monitoring Report, OUA, Adak
Comments Submitted: May 28, 2015

Cmt. No.	Pg. & Line	Sec.	Comment/Recommendation	Response
1.		General	Standard protocol for depicting information concerning groundwater sampling usually includes groundwater elevation contours vs ground elevation. It is possible to depict groundwater elevations in the figures because water levels were collected. Please provide a justification for not depicting groundwater elevations when appropriate.	Groundwater elevations and potentiometric surface contours are shown on Figures 7-1 and 8-1 (Area 303/GCI and Former Power Plant T-1451, respectively), due to the number of recent wells installed at the sites. Most sites do not have enough wells to generate contours for a representative groundwater flow direction (though South of Runway 18/36 and SWMU 62 do). Elevation data will be added to the text boxes to address the comment.
2.	3-5, L.6	3.1.2	Add: "and EPA for SWMU 14" at end of sentence. It is not clear from the text what MNA is applied to, i.e.: the petroleum, lead, VOC. Suggest adding language to clarify.	"and EPA for SWMU 14" will be added. Text will be clarified.
3.	15-6	15.5	Recommendations: EPA supports the proposed recommendations. Consideration should be given to removing the sediments in the pool represented by sample location 102 as this is the only area which exceed endpoint criteria. This may be cheaper in the long run then continued monitoring.	Comment acknowledged. Access to the site is only via Kuluk Bay, making the operation marine-based. Further focused discussion on the practicability is warranted.
4.		Appendix C	Palisades LF Sediment: There are dual entries for all the Aroclors in sampling years 2013 and 2014, why is that? Also, for Aroclors 1254 and 1260 in the 9/2014 sampling there is a sum of 500ug/kg, but that is not discussed in the text, please provide an explanation. If they are field duplicates, explain why the lower concentration is used in the text versus the higher concentration.	The dual entries in the Appendix are results for the sample and corresponding field duplicate sample. The higher concentration results for the Palisades LF sediment sample will be added to Table 15-1 and discussed in the text.
5.	16.4	16.5	Recommendations: Based on historic monitoring results since 1996, arsenic and barium results have never exceeded the Endpoint Criteria. It would be reasonable, unless RCRA closure requirements prevent it, to cease monitoring for these metals also. Otherwise EPA supports the recommendations.	A recommendation will be made to change to a five year sampling interval for arsenic and barium.
6.	17-3	17.2	Suggest adding language identifying the contaminant of concern being addressed by the Selected Remedy, and presumably for compliance.	VOCs were sampled for compliance and were discontinued when they fell

Cmt. No.	Pg. & Line	Sec.	Comment/Recommendation	Response
			For example, SWMU 14 discusses DRO, GRO, Lead. But previous sampling indicates that VOC's were parameters in previous monitoring events (Table 2-1). It is unclear whether VOCs were once a compliance end point for SWMU 14, and if they were, they are now below endpoint criteria, and no longer being monitored. This would be relevant information to provide, and shows progress towards meeting cleanup goals.	below endpoint criteria (see Table 2-1).
7.	17-5	17.6	Recommendations: EPA supports the proposed recommendations.	Comment acknowledged.
8.	18-1	18, or 18-2	Similar to comment on SWMU 14. There is only one well being monitored for this entire site. I think there should be some language justifying this, ie: the OUA ROD specified "Groundwater will be monitored at one location adjacent to the dry cleaning facility for volatile organic compounds."	The monitoring history is tabulated in Table 2-1.
9.	18-5, L.6	18.5	Delete either the word "no" or "not" in the sentence, unless free product was observed.	"not" will be deleted.
10.	18-5	18.6	Recommendations: EPA supports the proposed recommendations.	Comment acknowledged.
11.	19-5	19.5	Recommendations: EPA supports the proposed recommendations.	Comment acknowledged.
12.	20-14	20.5. L6-8	Request more discussion of NL-14. Based on Figure 20-1, it does not appear this sample location is associated with Roberts Landfill (but it might be if groundwater contours were depicted). If it is not related to Roberts Landfill, than the elevated metals in the seep are probably associated with the Adak Fuels Facility and should be addressed by the operator of Adak Fuels.	NAVFAC NW is budgeting a landfill optimization program for FY 18 which will review NL-14 in the scope. Annual sampling will continue until then.
13.	20-14	20.5	Recommendations: EPA supports the proposed recommendations.	Comment acknowledged.
14.	21-3	Table 21-2 & Figure 21-1	There needs to be more justification and definition for the "endpoint criteria exceedance" isopleth in Figure 21-1. Presumably it represents PCE. Ideally VOC data from MW 55-146 could be shown in Table 21-2 to substantiate the "plume".	The isopleth will be removed.
15.	21-5	21.5, L. 1	Delete either the word "no" or "not" in the sentence, unless free product was observed.	"not" will be deleted.

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Comments Submitted: May 28, 2015

Cmt. No.	Pg. & Line	Sec.	Comment/Recommendation	Response
16.	21-5	21.6	Recommendation: EPA supports deleting reporting the results for the TCE daughter products.	Comment acknowledged.
17.			End of EPA Comments	

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Commenter: Guy Warren (ADEC) Comments Developed: May 28, 2015

Cmt. No.	Pg. & Line	Sec.	Comment/Recommendation	Response
1.	3-11, Line 24	3.2.2	Consider including statement that additional repairs are planned for 2015.	Statement will be added.
2.	4-28, Line 3-11	4.1.3	High water levels in the ditch system could be changing the ground water flow regime at this site leading to greater mobilization of DRO. No change to document requested.	Comment acknowledged.
3.	7-1, Line 13	7.0	Text discusses selected remedy for Area 303 but not for GCI. Please include selected remedy for GCI compound site as well.	GCI remedy (free product recovery followed by MNA & ICs) will be added.
4.	7-11, Line 16	7.3	Please check units. (1.3 U mg/L)????	Will be corrected to µg/L.
5.	7-18	7.6	Suggest revising recommendation. We are currently sampling 27 monitoring wells across this area. While I understand that we need three data points to start trend analysis and to cease monitoring you need to meet end point criteria for two or three consecutive years. However that does not mean we cannot streamline the monitoring program for this site now. Sampling at up-gradient well 04-204 can probably be eliminated. I think we have sufficient data to select a subset of wells for regular monitoring every other year. We may want to collect samples from an expanded set of wells every five years. I believe we have sufficient data to start making some reasonable reduction to the number of wells sampled for this site. Please revise recommendation. We can schedule meeting to discuss.	Recommend <u>dropping samples</u> for 2015 at wells: 03-502, 04-100, 04-202, MW-303-32, MW-303-39, MW-303-40, and MW-303-41. <u>Add wells for 2015</u>: 03-103 for DRO, GRO, BTEX 03-518 for DRO, GRO, BTEX The analyte GRO at well AMW-704.
6.	8-9	8.6	Concur with recommendation to limit sediment sampling analytes. Concur with continued monitoring to evaluate progress in the enhanced MNA area.	Comment acknowledged.
7.	9-5, Line 22	9.5	Text description of groundwater flow does not match what is shown on Figure 9-1.	Text will be modified.
8.	10-7, Line 20	10.5	Please include for NMCB-11 that this well was largely non-detect till FP was detected last year.	Observation will be added.
9.	10-7, Line 26	10.6	ADEC concurs with eliminating sampling at wells NMCB-09, 02-461, and E-201 and discontinuation of water level monitoring at 02-301. All other monitoring should continue as planned.	Comment acknowledged.

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10.	11-5, Line 22	11.6	This site should probably be reevaluated. We are monitoring one up-gradient well and a source well. Source well is "no trend". Both wells appear to be cross-gradient from the former UST by about 100ft. Some additional effort may be warranted.	Per discussions with NAVFAC NW, additional investigation of this area will be scoped when a drill rig is next mobilized to Adak (perhaps at the next well decommissioning event).
11.	12-7	12.6	Concur with recommendations.	Comment acknowledged.
12.	13-6	13.6	Concur with recommendations.	Comment acknowledged.
13.	14-8	14.6	Concur with recommendations. Please include recommendation to address the fluctuating water levels in the Airport Ditch. Increasing water levels in the ditch may be altering groundwater flow across the site.	NAVFAC NW is in discussions with DOT to resolve the issue. Current DOT plan is to repair the auto control in June.
14.	15-6	15.5	Concur with recommendations.	Comment acknowledged.
15.	16-4	16.5	Concur with recommendations.	Comment acknowledged.
16.	17-5	17.6	Concur with recommendations.	Comment acknowledged.
17.	18-5	18.6	Concur with recommendations.	Comment acknowledged.
18.	19-5	19-5	Concur with recommendations.	Comment acknowledged.
19.	20-14, Line 9-12	20-5	This paragraph discusses reduction of VOC sampling but does not reference which media it is referring to. Suggest going to every 5 years for VOC sampling or possibly eliminating the analysis entirely. Review of Appendix C indicates there was never a detection of these compounds let alone exceedances.	Media is groundwater, which will be noted. VOCs will be sampled once every 5 years prior to 5-year review.
20.	21-4	21.3	The section discusses petroleum biodegradation. Please revise to discuss what the NAP's tell us about the reductive dechlorination of TCE.	The text will be revised to eliminate the petroleum discussion.
21.	21-5	21.6	Typically you don't remove the additional analytes from the standard method. You would just stop reporting the data for these analytes in the report. I agree we are not seeing any of the daughter products but that just makes me think de-chlorination is not occurring and the contaminant reduction we are getting is from dilution and diffusion. That said we are clearly seeing a decreasing trend. Concur with recommendations.	Only PCE will be reported.
22.	22-10	22.6	Concur with recommendations.	Comment acknowledged.

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23.	23-11	23.6	Text refers to TFB-MW4B as a surface water protection well (line 12 and 15). This is the source area well. Well 14-113 is the surface water protection well. Please revise. Concur with recommendations.	Will be corrected.
24.	24-14, Line 7	24.5	"All areas of contamination appear to have not changed in size since **2014**." Underlined Should be 2013.	Will be corrected to 2013.
25.	24-16	24.6	Concur with recommendations.	Comment acknowledged.
26.				