APPENDIX G

STATISTICAL ANALYSIS SUMMARY
(Provided in Electronic Format via CD Located on Front Cover of Report)

APPENDIX H

DECAY RATE CALCULATIONS

First-Order Decay Rate Calculation
for Monitored Natural Attenuation

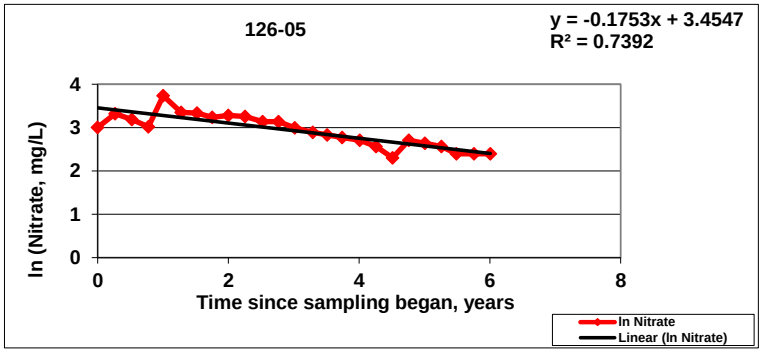
Facility Name: Dona Ana Dairies

Facility Location and Address: Dona Ana County, New Mexico

Well 126-05

Location of well (source area, down-gradient, perimeter or cross-gradient, in ROI of cleanup system, other):

Sampling Date	Depth to Ground Water	Nitrate mg/L	Nitrate ug/L	ln Nitrate mg/L	Elapsed time since 11/09/15 years
9-Nov-15		20.2	**20200**	**3.006**	**0.00**
15-Feb-16		27.7	**27700**	**3.321**	**0.27**
18-May-16		24.2	**24200**	**3.186**	**0.52**
18-Aug-16		20.5	**20500**	**3.020**	**0.78**
9-Nov-16		41.9	**41900**	**3.735**	**1.00**
17-Feb-17		28.5	**28500**	**3.350**	**1.28**
17-May-17		28.1	**28100**	**3.336**	**1.52**
10-Aug-17		25.4	**25400**	**3.235**	**1.75**
8-Nov-17		26.6	**26600**	**3.281**	**2.00**
9-Feb-18		26.0	**26000**	**3.258**	**2.25**
18-May-18		23.0	**23000**	**3.135**	**2.52**
15-Aug-18		23	**23000**	**3.135**	**2.77**
14-Nov-18		20	**20000**	**2.996**	**3.02**
22-Feb-19		18	**18000**	**2.890**	**3.29**
14-May-19		17	**17000**	**2.833**	**3.51**
5-Aug-19		16	**16000**	**2.773**	**3.74**
12-Nov-19		15	**15000**	**2.708**	**4.01**
10-Feb-20		13	**13000**	**2.565**	**4.26**
13-May-20		10	**10000**	**2.303**	**4.51**
12-Aug-20		15	**15000**	**2.708**	**4.76**
10-Nov-20		14	**14000**	**2.639**	**5.01**
9-Feb-21		13	**13000**	**2.565**	**5.26**
4-May-21		11	**11000**	**2.398**	**5.49**
11-Aug-21		11	**11000**	**2.398**	**5.76**
9-Nov-21		11	**11000**	**2.398**	**6.01**
24-Feb-22		10	**10000**	**2.303**	**6.30**
NMWQCC		***10***	***1000***	***2.303***	



Formula

$t = -[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

Solutions

126-05, Nitrate				
Enter C_{CL}	⟹	**10**		
Enter C_o	⟹	**20.2**		
Enter k_{point}	⟹	**0.1753**		
Time to reach cleanup level			**4.0**	**years**

First-Order Decay Rate Calculation
for Monitored Natural Attenuation

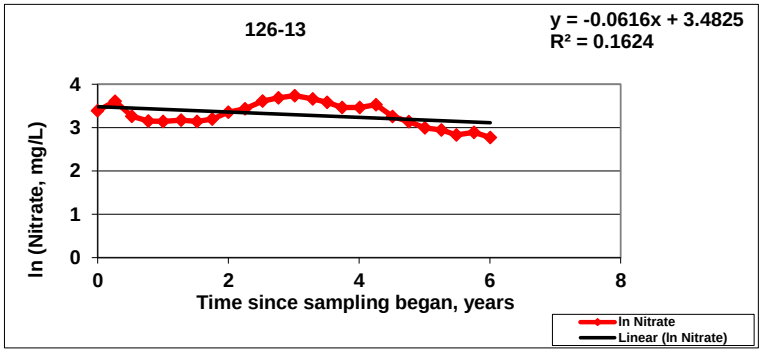
Facility Name: Dona Ana Dairies

Facility Location and Address: Dona Ana County, New Mexico

Well 126-13

Location of well (source area, down-gradient, perimeter or cross-gradient, in ROI of cleanup system, other):

Sampling Date	Depth to Ground Water	Nitrate mg/L	Nitrate ug/L	ln Nitrate mg/L	Elapsed time since 11/09/15 years
9-Nov-15		29.6	**29600**	**3.388**	**0.00**
15-Feb-16		36.9	**36900**	**3.608**	**0.27**
18-May-16		26.1	**26100**	**3.262**	**0.52**
18-Aug-16		23.4	**23400**	**3.153**	**0.78**
9-Nov-16		23.2	**23200**	**3.144**	**1.00**
17-Feb-17		23.8	**23800**	**3.170**	**1.28**
17-May-17		23.2	**23200**	**3.144**	**1.52**
10-Aug-17		24.4	**24400**	**3.195**	**1.75**
8-Nov-17		28.6	**28600**	**3.353**	**2.00**
9-Feb-18		31	**31000**	**3.434**	**2.25**
18-May-18		37	**37000**	**3.611**	**2.52**
15-Aug-18		40	**40000**	**3.689**	**2.77**
14-Nov-18		42	**42000**	**3.738**	**3.02**
22-Feb-19		39	**39000**	**3.664**	**3.29**
14-May-19		36	**36000**	**3.584**	**3.51**
5-Aug-19		32	**32000**	**3.466**	**3.74**
12-Nov-19		32	**32000**	**3.466**	**4.01**
10-Feb-20		34	**34000**	**3.526**	**4.26**
13-May-20		26	**26000**	**3.258**	**4.51**
12-Aug-20		23	**23000**	**3.135**	**4.76**
10-Nov-20		20	**20000**	**2.996**	**5.01**
9-Feb-21		19	**19000**	**2.944**	**5.26**
4-May-21		17	**17000**	**2.833**	**5.49**
11-Aug-21		18	**18000**	**2.890**	**5.76**
9-Nov-21		16	**16000**	**2.773**	**6.01**
24-Feb-22		15	**15000**	**2.708**	**6.30**
NMWQCC		***10***	***1000***	***2.303***	



Formula

$t = -[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

Solutions

126-13, Nitrate				
Enter C_{CL}	⇒	**10**		
Enter C_o	⇒	**29.6**		
Enter k_{point}	⇒	**0.0616**		
Time to reach cleanup level			**17.6**	**years**

First-Order Decay Rate Calculation
for Monitored Natural Attenuation

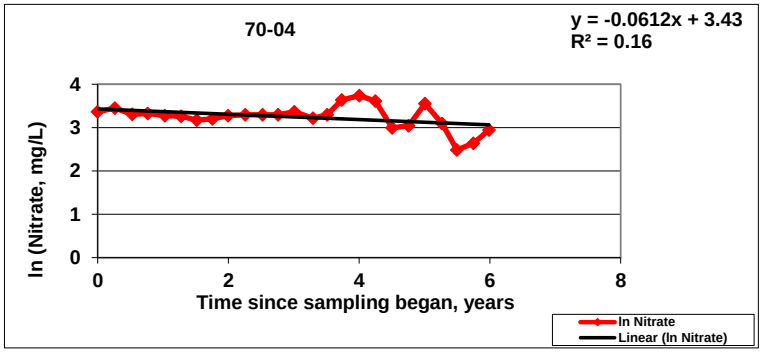
Facility Name: Dona Ana Dairies

Facility Location and Address: Dona Ana County, New Mexico

Well 70-04

Location of well (source area, down-gradient, perimeter or cross-gradient, in ROI of cleanup system, other):

Sampling Date	Depth to Ground Water	Nitrate mg/L	Nitrate ug/L	ln Nitrate mg/L	Elapsed time since 11/12/15 years
12-Nov-15		28.9	**28900**	**3.364**	**0.00**
16-Feb-16		31.4	**31400**	**3.447**	**0.26**
23-May-16		27.3	**27300**	**3.307**	**0.53**
18-Aug-16		27.8	**27800**	**3.325**	**0.77**
22-Nov-16		26.5	**26500**	**3.277**	**1.03**
20-Feb-17		26.1	**26100**	**3.262**	**1.28**
19-May-17		23.9	**23900**	**3.174**	**1.52**
14-Aug-17		24.6	**24600**	**3.203**	**1.76**
9-Nov-17		26.5	**26500**	**3.277**	**1.99**
13-Feb-18		27	**27000**	**3.296**	**2.26**
21-May-18		27	**27000**	**3.296**	**2.52**
15-Aug-18		27	**27000**	**3.296**	**2.76**
14-Nov-18		29	**29000**	**3.367**	**3.01**
26-Feb-19		25	**25000**	**3.219**	**3.29**
16-May-19		27	**27000**	**3.296**	**3.51**
6-Aug-19		38	**38000**	**3.638**	**3.73**
12-Nov-19		42	**42000**	**3.738**	**4.00**
10-Feb-20		37	**37000**	**3.611**	**4.25**
13-May-20		20	**20000**	**2.996**	**4.50**
14-Aug-20		21	**21000**	**3.045**	**4.76**
12-Nov-20		35	**35000**	**3.555**	**5.01**
16-Feb-21		22	**22000**	**3.091**	**5.27**
10-May-21		12	**12000**	**2.485**	**5.50**
10-Aug-21		14	**14000**	**2.639**	**5.75**
5-Nov-21		19	**19000**	**2.944**	**5.99**
15-Feb-22		17	**17000**	**2.833**	**6.27**
NMWQCC		***10***	***1000***	***2.303***	



Formula

$t = -[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

Solutions

70-04, Nitrate				
Enter C_{CL}	⟹	**10**		
Enter C_o	⟹	**28.9**		
Enter k_{point}	⟹	**0.0612**		
Time to reach cleanup level			**17.3**	**years**

First-Order Decay Rate Calculation
for Monitored Natural Attenuation

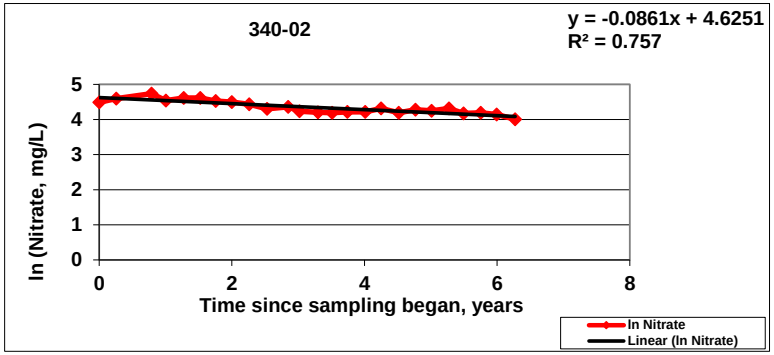
Facility Name: Dona Ana Dairies

Facility Location and Address: Dona Ana County, New Mexico

Well 340-02

Location of well (source area, down-gradient, perimeter or cross-gradient, in ROI of cleanup system, other):

Sampling Date	Depth to Ground Water	Nitrate mg/L	Nitrate ug/L	ln Nitrate mg/L	Elapsed time since 11/09/15 years
9-Nov-15		89.2	**89200**	**4.491**	**0.00**
11-Feb-16		99.1	**99100**	**4.596**	**0.26**
23-Aug-16		114	**114000**	**4.736**	**0.79**
10-Nov-16		93.8	**93800**	**4.541**	**1.01**
16-Feb-17		101	**101000**	**4.615**	**1.27**
18-May-17		101	**101000**	**4.615**	**1.52**
11-Aug-17		92.4	**92400**	**4.526**	**1.76**
8-Nov-17		89.7	**89700**	**4.496**	**2.00**
12-Feb-18		84	**84000**	**4.431**	**2.26**
21-May-18		74	**74000**	**4.304**	**2.53**
14-Sep-18		78	**78000**	**4.357**	**2.85**
15-Nov-18		69	**69000**	**4.234**	**3.02**
25-Feb-19		67	**67000**	**4.205**	**3.30**
14-May-19		66	**66000**	**4.190**	**3.51**
6-Aug-19		68	**68000**	**4.220**	**3.74**
12-Nov-19		68	**68000**	**4.220**	**4.01**
7-Feb-20		75	**75000**	**4.317**	**4.25**
14-May-20		66	**66000**	**4.190**	**4.52**
14-Aug-20		72	**72000**	**4.277**	**4.77**
11-Nov-20		70	**70000**	**4.248**	**5.01**
15-Feb-21		75	**75000**	**4.317**	**5.27**
6-May-21		65	**65000**	**4.174**	**5.49**
9-Aug-21		66	**66000**	**4.190**	**5.75**
4-Nov-21		63	**63000**	**4.143**	**5.99**
14-Feb-22		55	**55000**	**4.007**	**6.27**
NMWQCC		***10***	***1000***	***2.303***	



Formula

$t = -[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

Solutions

340-02, Nitrate				
Enter C_{CL}	⟹	**10**		
Enter C_o	⟹	**89.2**		
Enter k_{point}	⟹	**0.0861**		
Time to reach cleanup level			**25.4**	**years**

First-Order Decay Rate Calculation
for Monitored Natural Attenuation

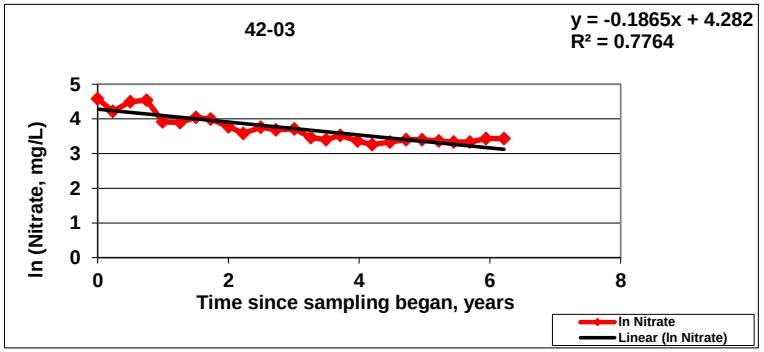
Facility Name: Dona Ana Dairies

Facility Location and Address: Dona Ana County, New Mexico

Well 42-03

Location of well (source area, down-gradient, perimeter or cross-gradient, in ROI of cleanup system, other):

Sampling Date	Depth to Ground Water	Nitrate mg/L	Nitrate ug/L	ln Nitrate mg/L	Elapsed time since 12/1/15 years
1-Dec-15		97.9	**97900**	**4.584**	**0.00**
23-Feb-16		68.0	**68000**	**4.220**	**0.23**
1-Jun-16		90.0	**90000**	**4.500**	**0.50**
31-Aug-16		93.5	**93500**	**4.538**	**0.75**
28-Nov-16		50.2	**50200**	**3.916**	**0.99**
6-Mar-17		49.2	**49200**	**3.896**	**1.26**
2-Jun-17		57.1	**57100**	**4.045**	**1.50**
23-Aug-17		54.5	**54500**	**3.998**	**1.73**
1-Dec-17		43.6	**43600**	**3.775**	**2.00**
21-Feb-18		36	**36000**	**3.584**	**2.23**
29-May-18		43	**43000**	**3.761**	**2.49**
22-Aug-18		40	**40000**	**3.689**	**2.73**
4-Dec-18		41	**41000**	**3.714**	**3.01**
6-Mar-19		32	**32000**	**3.466**	**3.26**
30-May-19		30	**30000**	**3.401**	**3.50**
16-Aug-19		34	**34000**	**3.526**	**3.71**
22-Nov-19		29	**29000**	**3.367**	**3.98**
11-Feb-20		26	**26000**	**3.258**	**4.20**
20-May-20		28	**28000**	**3.332**	**4.47**
18-Aug-20		30	**30000**	**3.401**	**4.72**
16-Nov-20		30	**30000**	**3.401**	**4.96**
17-Feb-21		29	**29000**	**3.367**	**5.22**
11-May-21		28	**28000**	**3.332**	**5.45**
10-Aug-21		28	**28000**	**3.332**	**5.70**
8-Nov-21		31	**31000**	**3.434**	**5.94**
16-Feb-22		31	**31000**	**3.434**	**6.22**
NMWQCC		***10***	***1000***	***2.303***	



Formula

$t = -[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

Solutions

42-03, Nitrate				
Enter C_{CL}	⟹	**10**		
Enter C_o	⟹	**97.9**		
Enter k_{point}	⟹	**0.1865**		
Time to reach cleanup level			**12.2**	**years**

First-Order Decay Rate Calculation
for Monitored Natural Attenuation

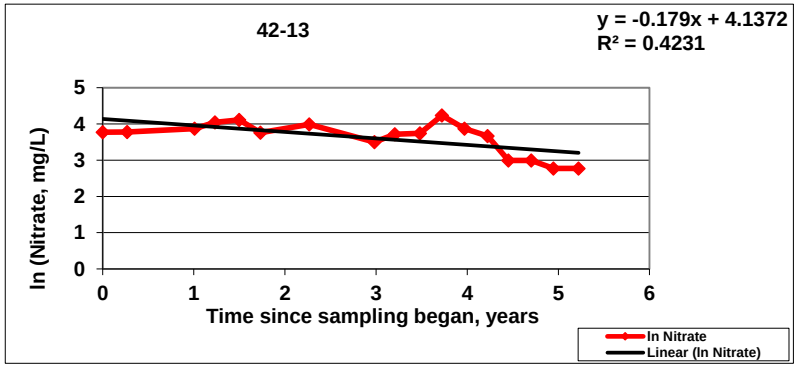
Facility Name: Dona Ana Dairies

Facility Location and Address: Dona Ana County, New Mexico

Well 42-13

Location of well (source area, down-gradient, perimeter or cross-gradient, in ROI of cleanup system, other):

Sampling Date	Depth to Ground Water	Nitrate mg/L	Nitrate ug/L	ln Nitrate mg/L	Elapsed time since 11/28/16 years
28-Nov-16		43.5	**43500**	**3.773**	**0.00**
6-Mar-17		43.6	**43600**	**3.775**	**0.27**
1-Dec-17		48.0	**48000**	**3.871**	**1.01**
21-Feb-18		57	**57000**	**4.043**	**1.23**
29-May-18		61	**61000**	**4.111**	**1.50**
22-Aug-18		43	**43000**	**3.761**	**1.73**
6-Mar-19		54	**54000**	**3.989**	**2.27**
22-Nov-19		33	**33000**	**3.497**	**2.98**
11-Feb-20		41	**41000**	**3.714**	**3.21**
22-May-20		42	**42000**	**3.738**	**3.48**
18-Aug-20		69	**69000**	**4.234**	**3.72**
16-Nov-20		48	**48000**	**3.871**	**3.97**
17-Feb-21		39	**39000**	**3.664**	**4.22**
11-May-21		20	**20000**	**2.996**	**4.45**
11-Aug-21		20	**20000**	**2.996**	**4.70**
8-Nov-21		16	**16000**	**2.773**	**4.95**
16-Feb-22		16	**16000**	**2.773**	**5.22**
NMWQCC		***10***	***1000***	***2.303***	



Formula

$t = -[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

Solutions

42-13, Nitrate			
Enter C_{CL}	⇨	**10**	
Enter C_o	⇨	**43.5**	
Enter k_{point}	⇨	**0.179**	
Time to reach cleanup level		**8.2**	**years**

First-Order Decay Rate Calculation
for Monitored Natural Attenuation

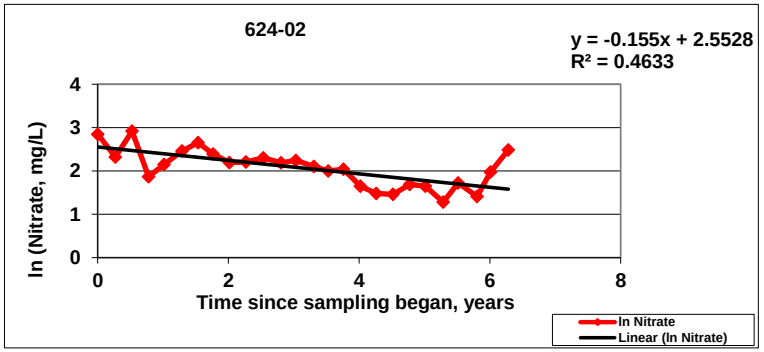
Facility Name: Dona Ana Dairies

Facility Location and Address: Dona Ana County, New Mexico

Well 624-02

Location of well (source area, down-gradient, perimeter or cross-gradient, in ROI of cleanup system, other):

Sampling Date	Depth to Ground Water	Nitrate mg/L	Nitrate ug/L	ln Nitrate mg/L	Elapsed time since 11/09/15 years
10-Nov-15		17.2	**17200**	**2.845**	**0.00**
16-Feb-16		10.2	**10200**	**2.322**	**0.27**
19-May-16		18.5	**18500**	**2.918**	**0.53**
19-Aug-16		6.46	**6460**	**1.866**	**0.78**
14-Nov-16		8.58	**8580**	**2.149**	**1.02**
22-Feb-17		11.7	**11700**	**2.460**	**1.29**
23-May-17		14.2	**14200**	**2.653**	**1.54**
15-Aug-17		10.9	**10900**	**2.389**	**1.77**
14-Nov-17		8.97	**8970**	**2.194**	**2.02**
14-Feb-18		9.1	**9100**	**2.208**	**2.27**
22-May-18		10	**10000**	**2.303**	**2.53**
29-Aug-18		8.9	**8900**	**2.186**	**2.81**
20-Nov-18		9.4	**9400**	**2.241**	**3.03**
28-Feb-19		8.2	**8200**	**2.104**	**3.31**
20-May-19		7.4	**7400**	**2.001**	**3.53**
13-Aug-19		7.7	**7700**	**2.041**	**3.76**
15-Nov-19		5.2	**5200**	**1.649**	**4.02**
12-Feb-20		4.4	**4400**	**1.482**	**4.26**
15-May-20		4.3	**4300**	**1.459**	**4.52**
17-Aug-20		5.4	**5400**	**1.686**	**4.78**
12-Nov-20		5.2	**5200**	**1.649**	**5.01**
19-Feb-21		3.6	**3600**	**1.281**	**5.28**
14-May-21		5.6	**5600**	**1.723**	**5.52**
27-Aug-21		4.1	**4100**	**1.411**	**5.80**
11-Nov-21		7.2	**7200**	**1.974**	**6.01**
18-Feb-22		12	**12000**	**2.485**	**6.28**
NMWQCC		***10***	***1000***	***2.303***	



Formula

$t = -[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

Solutions

624-02, Nitrate				
Enter C_{CL}	⟹	**10**		
Enter C_o	⟹	**17.2**		
Enter k_{point}	⟹	**0.155**		
Time to reach cleanup level			**3.5**	**years**

First-Order Decay Rate Calculation
for Monitored Natural Attenuation

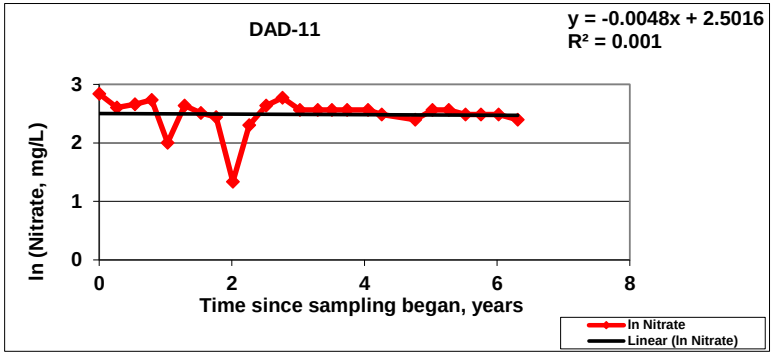
Facility Name: Dona Ana Dairies

Facility Location and Address: Dona Ana County, New Mexico

Well DAD-11

Location of well (source area, down-gradient, perimeter or cross-gradient, in ROI of cleanup system, other):

Sampling Date	Depth to Ground Water	Nitrate mg/L	Nitrate ug/L	ln Nitrate mg/L	Elapsed time since 11/24/15 years
24-Nov-15		17.1	17100	2.839	0.00
29-Feb-16		13.5	13500	2.603	0.27
8-Jun-16		14.3	14300	2.660	0.54
8-Sep-16		15.4	15400	2.734	0.79
5-Dec-16		7.40	7400	2.001	1.03
8-Mar-17		14.0	14000	2.639	1.29
6-Jun-17		12.3	12300	2.510	1.53
29-Aug-17		11.5	11500	2.442	1.76
29-Nov-17		3.80	3800	1.335	2.02
26-Feb-18		10	10000	2.303	2.26
31-May-18		14	14000	2.639	2.52
29-Aug-18		16	16000	2.773	2.76
3-Dec-18		13	13000	2.565	3.03
11-Mar-19		13	13000	2.565	3.30
28-May-19		13	13000	2.565	3.51
20-Aug-19		13	13000	2.565	3.74
12-Dec-19		13	13000	2.565	4.05
26-Feb-20		12	12000	2.485	4.26
28-Aug-20		11	11000	2.398	4.76
1-Dec-20		13	13000	2.565	5.02
1-Mar-21		13	13000	2.565	5.27
1-Jun-21		12	12000	2.485	5.52
25-Aug-21		12	12000	2.485	5.76
30-Nov-21		12	12000	2.485	6.02
15-Mar-22		11	11000	2.398	6.31
NMWQCC		***10***	***1000***	***2.303***	



Formula

$t = -[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

Solutions

DAD-11, Nitrate				
Enter C_{CL}	⟹	**10**		
Enter C_o	⟹	**17.1**		
Enter k_{point}	⟹	**0.0048**		
Time to reach cleanup level			**111.8**	**years**

First-Order Decay Rate Calculation
for Monitored Natural Attenuation

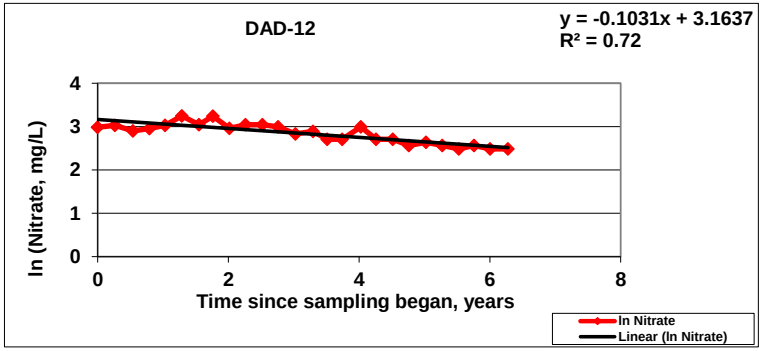
Facility Name: Dona Ana Dairies

Facility Location and Address: Dona Ana County, New Mexico

Well DAD-12

Location of well (source area, down-gradient, perimeter or cross-gradient, in ROI of cleanup system, other):

Sampling Date	Depth to Ground Water	Nitrate mg/L	Nitrate ug/L	ln Nitrate mg/L	Elapsed time since 11/24/15 years
24-Nov-15		19.8	19800	2.986	0.00
29-Feb-16		20.7	20700	3.030	0.27
8-Jun-16		18.2	18200	2.901	0.54
8-Sep-16		19.2	19200	2.955	0.79
5-Dec-16		20.7	20700	3.030	1.03
8-Mar-17		25.7	25700	3.246	1.29
12-Jun-17		21.0	21000	3.045	1.55
28-Aug-17		25.6	25600	3.243	1.76
29-Nov-17		19.3	19300	2.960	2.02
27-Feb-18		21	21000	3.045	2.26
1-Jun-18		21	21000	3.045	2.52
28-Aug-18		20	20000	2.996	2.76
3-Dec-18		17	17000	2.833	3.03
11-Mar-19		18	18000	2.890	3.30
28-May-19		15	15000	2.708	3.51
20-Aug-19		15	15000	2.708	3.74
3-Dec-19		20	20000	2.996	4.03
26-Feb-20		15	15000	2.708	4.26
29-May-20		15	15000	2.708	4.52
27-Aug-20		13	13000	2.565	4.76
30-Nov-20		14	14000	2.639	5.02
1-Mar-21		13	13000	2.565	5.27
1-Jun-21		12	12000	2.485	5.52
25-Aug-21		13	13000	2.565	5.76
23-Nov-21		12	12000	2.485	6.00
3-Mar-22		12	12000	2.485	6.28
NMWQCC		***10***	***1000***	***2.303***	



Formula

$t = -[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

Solutions

DAD-12, Nitrate				
Enter C_{CL}	⇒	10		
Enter C_o	⇒	19.8		
Enter k_{point}	⇒	0.1031		
Time to reach cleanup level			6.6	years

First-Order Decay Rate Calculation
for Monitored Natural Attenuation

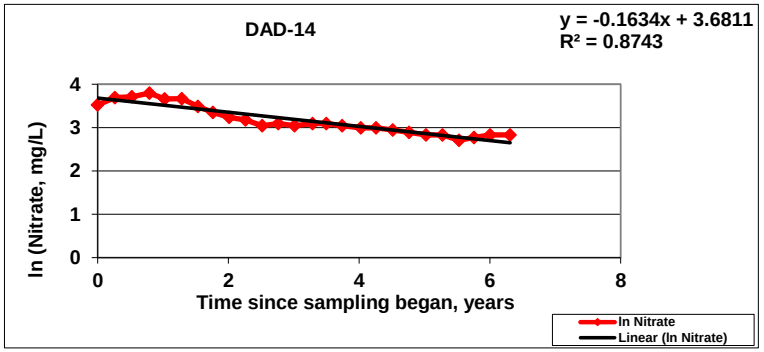
Facility Name: Dona Ana Dairies

Facility Location and Address: Dona Ana County, New Mexico

Well DAD-14

Location of well (source area, down-gradient, perimeter or cross-gradient, in ROI of cleanup system, other):

Sampling Date	Depth to Ground Water	Nitrate mg/L	Nitrate ug/L	ln Nitrate mg/L	Elapsed time since 11/24/15 years
24-Nov-15		33.9	**33900**	**3.523**	**0.00**
29-Feb-16		40.2	**40200**	**3.694**	**0.27**
2-Jun-16		40.9	**40900**	**3.711**	**0.52**
8-Sep-16		44.5	**44500**	**3.795**	**0.79**
2-Dec-16		39.0	**39000**	**3.664**	**1.02**
8-Mar-17		39.1	**39100**	**3.666**	**1.29**
6-Jun-17		32.7	**32700**	**3.487**	**1.53**
28-Aug-17		28.5	**28500**	**3.350**	**1.76**
27-Nov-17		25.5	**25500**	**3.239**	**2.01**
26-Feb-18		24	**24000**	**3.178**	**2.26**
31-May-18		21	**21000**	**3.045**	**2.52**
29-Aug-18		22	**22000**	**3.091**	**2.76**
28-Nov-18		21	**21000**	**3.045**	**3.01**
8-Mar-19		22	**22000**	**3.091**	**3.29**
24-May-19		22	**22000**	**3.091**	**3.50**
20-Aug-19		21	**21000**	**3.045**	**3.74**
3-Dec-19		20	**20000**	**2.996**	**4.03**
26-Feb-20		20	**20000**	**2.996**	**4.26**
29-May-20		19	**19000**	**2.944**	**4.52**
28-Aug-20		18	**18000**	**2.890**	**4.76**
1-Dec-20		17	**17000**	**2.833**	**5.02**
2-Mar-21		17	**17000**	**2.833**	**5.27**
3-Jun-21		15	**15000**	**2.708**	**5.53**
26-Aug-21		16	**16000**	**2.773**	**5.76**
23-Nov-21		17	**17000**	**2.833**	**6.00**
15-Mar-22		17	**17000**	**2.833**	**6.31**
NMWQCC		***10***	***1000***	***2.303***	



Formula

$t = -[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

Solutions

DAD-14, Nitrate				
Enter C_{CL}	⟹	**10**		
Enter C_o	⟹	**33.9**		
Enter k_{point}	⟹	**0.1634**		
Time to reach cleanup level			**7.5**	**years**

First-Order Decay Rate Calculation
for Monitored Natural Attenuation

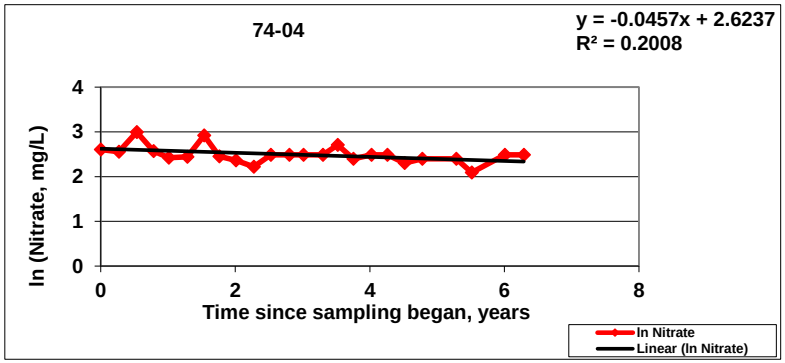
Facility Name: Dona Ana Dairies

Facility Location and Address: Dona Ana County, New Mexico

Well 74-04

Location of well (source area, down-gradient, perimeter or cross-gradient, in ROI of cleanup system, other):

Sampling Date	Depth to Ground Water	Nitrate mg/L	Nitrate ug/L	ln Nitrate mg/L	Elapsed time since 11/12/15 years
12-Nov-15		13.5	13500	2.603	0.00
18-Feb-16		12.9	12900	2.557	0.27
25-May-16		20.0	20000	2.996	0.53
25-Aug-16		13.1	13100	2.573	0.79
15-Nov-16		11.3	11300	2.425	1.01
24-Feb-17		11.5	11500	2.442	1.29
26-May-17		18.6	18600	2.923	1.54
16-Aug-17		11.6	11600	2.451	1.76
14-Nov-17		10.6	10600	2.361	2.01
19-Feb-18		9.2	9200	2.219	2.27
23-May-18		12	12000	2.485	2.53
31-Aug-18		12	12000	2.485	2.80
16-Nov-18		12	12000	2.485	3.01
1-Mar-19		12	12000	2.485	3.30
21-May-19		15	15000	2.708	3.52
14-Aug-19		11	11000	2.398	3.76
20-Nov-19		12	12000	2.485	4.02
14-Feb-20		12	12000	2.485	4.26
18-May-20		10	10000	2.303	4.52
21-Aug-20		11	11000	2.398	4.78
22-Feb-21		11	11000	2.398	5.28
17-May-21		8.1	8100	2.092	5.52
12-Nov-21		12	12000	2.485	6.01
23-Feb-22		12	12000	2.485	6.29
NMWQCC		***10***	***1000***	***2.303***	



Formula

$t = -[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

Solutions

74-04, Nitrate				
Enter C_{CL}	⇒	**10**		
Enter C_o	⇒	**13.5**		
Enter k_{point}	⇒	**0.0457**		
Time to reach cleanup level			**6.6**	**years**

First-Order Decay Rate Calculation
for Monitored Natural Attenuation

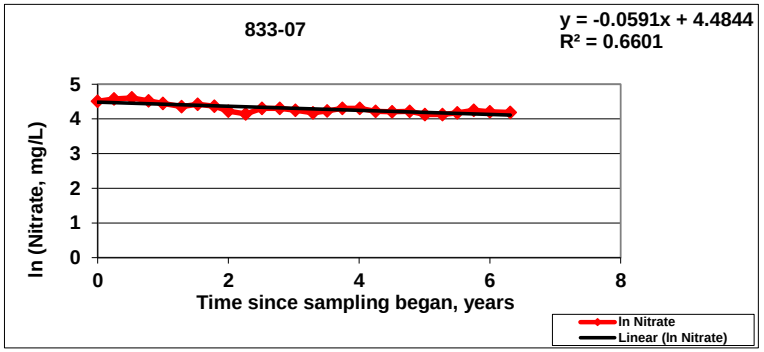
Facility Name: Dona Ana Dairies

Facility Location and Address: Dona Ana County, New Mexico

Well 833-07

Location of well (source area, down-gradient, perimeter or cross-gradient, in ROI of cleanup system, other):

Sampling Date	Depth to Ground Water	Nitrate mg/L	Nitrate ug/L	ln Nitrate mg/L	Elapsed time since 11/18/15 years
18-Nov-15		91.0	**91000**	**4.511**	**0.00**
18-Feb-16		97.4	**97400**	**4.579**	**0.25**
27-May-16		100	**100000**	**4.605**	**0.52**
29-Aug-16		92.2	**92200**	**4.524**	**0.78**
17-Nov-16		85.3	**85300**	**4.446**	**1.00**
1-Mar-17		78.0	**78000**	**4.357**	**1.28**
30-May-17		83.3	**83300**	**4.422**	**1.53**
31-Aug-17		78.7	**78700**	**4.366**	**1.79**
17-Nov-17		68.2	**68200**	**4.222**	**2.00**
22-Feb-18		63	**63000**	**4.143**	**2.27**
24-May-18		74	**74000**	**4.304**	**2.52**
31-Aug-18		74	**74000**	**4.304**	**2.79**
26-Nov-18		70	**70000**	**4.248**	**3.02**
4-Mar-19		65	**65000**	**4.174**	**3.29**
22-May-19		69	**69000**	**4.234**	**3.51**
15-Aug-19		74	**74000**	**4.304**	**3.74**
20-Nov-19		74	**74000**	**4.304**	**4.01**
17-Feb-20		68	**68000**	**4.220**	**4.25**
19-May-20		67	**67000**	**4.205**	**4.50**
25-Aug-20		68	**68000**	**4.220**	**4.77**
19-Nov-20		62	**62000**	**4.127**	**5.01**
24-Feb-21		62	**62000**	**4.127**	**5.27**
18-May-21		65	**65000**	**4.174**	**5.50**
18-Aug-21		70	**70000**	**4.248**	**5.75**
16-Nov-21		67	**67000**	**4.205**	**6.00**
10-Mar-22		66	**66000**	**4.190**	**6.31**
NMWQCC		***10***	***1000***	***2.303***	



Formula

$t = -[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

Solutions

833-07, Nitrate				
Enter C_{CL}	⟹	**10**		
Enter C_o	⟹	**91**		
Enter k_{point}	⟹	**0.0591**		
Time to reach cleanup level			**37.4**	**years**

First-Order Decay Rate Calculation
for Monitored Natural Attenuation

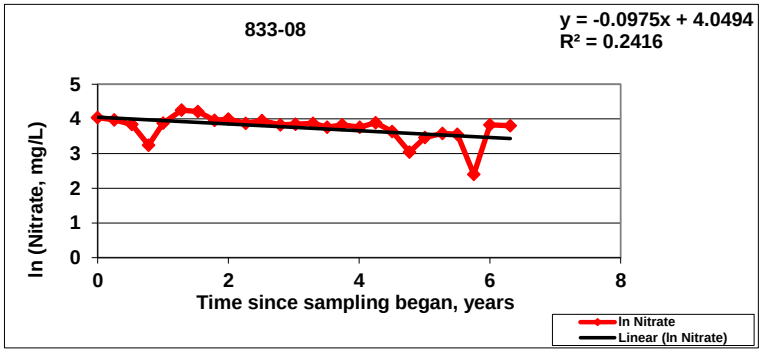
Facility Name: Dona Ana Dairies

Facility Location and Address: Dona Ana County, New Mexico

Well 833-08

Location of well (source area, down-gradient, perimeter or cross-gradient, in ROI of cleanup system, other):

Sampling Date	Depth to Ground Water	Nitrate mg/L	Nitrate ug/L	ln Nitrate mg/L	Elapsed time since 11/18/15 years
18-Nov-15		56.9	**56900**	**4.041**	**0.00**
19-Feb-16		52.9	**52900**	**3.968**	**0.25**
27-May-16		46.5	**46500**	**3.839**	**0.52**
29-Aug-16		25.6	**25600**	**3.243**	**0.78**
18-Nov-16		48.3	**48300**	**3.877**	**1.00**
1-Mar-17		70.3	**70300**	**4.253**	**1.28**
31-May-17		67.6	**67600**	**4.214**	**1.53**
1-Sep-17		52.3	**52300**	**3.957**	**1.79**
17-Nov-17		54.3	**54300**	**3.995**	**2.00**
22-Feb-18		48	**48000**	**3.871**	**2.27**
24-May-18		52	**52000**	**3.951**	**2.52**
4-Sep-18		46	**46000**	**3.829**	**2.80**
27-Nov-18		47	**47000**	**3.850**	**3.03**
5-Mar-19		48	**48000**	**3.871**	**3.30**
23-May-19		43	**43000**	**3.761**	**3.51**
14-Aug-19		46	**46000**	**3.829**	**3.74**
20-Nov-19		43	**43000**	**3.761**	**4.01**
17-Feb-20		49	**49000**	**3.892**	**4.25**
19-May-20		38	**38000**	**3.638**	**4.50**
24-Aug-20		21	**21000**	**3.045**	**4.77**
18-Nov-20		32	**32000**	**3.466**	**5.01**
24-Feb-21		36	**36000**	**3.584**	**5.27**
18-May-21		35	**35000**	**3.555**	**5.50**
18-Aug-21		11	**11000**	**2.398**	**5.75**
16-Nov-21		46	**46000**	**3.829**	**6.00**
10-Mar-22		45	**45000**	**3.807**	**6.31**
NMWQCC		***10***	***1000***	***2.303***	



Formula

$t = -[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

Solutions

833-08, Nitrate				
Enter C_{CL}	⟹	**10**		
Enter C_o	⟹	**56.9**		
Enter k_{point}	⟹	**0.0975**		
Time to reach cleanup level			**17.8**	**years**

First-Order Decay Rate Calculation
for Monitored Natural Attenuation

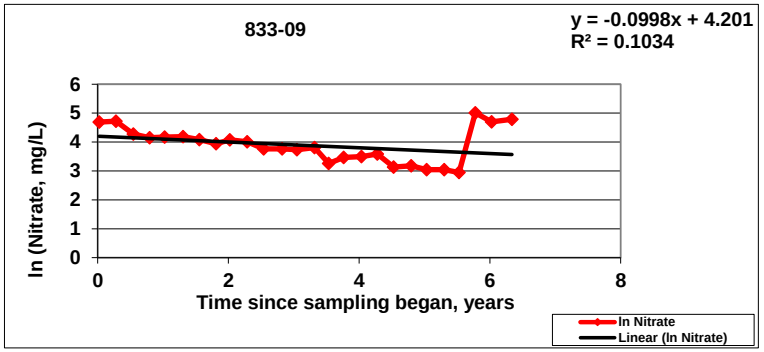
Facility Name: Dona Ana Dairies

Facility Location and Address: Dona Ana County, New Mexico

Well 833-09

Location of well (source area, down-gradient, perimeter or cross-gradient, in ROI of cleanup system, other):

Sampling Date	Depth to Ground Water	Nitrate mg/L	Nitrate ug/L	ln Nitrate mg/L	Elapsed time since 11/09/15 years
18-Nov-15		109	**109000**	**4.691**	**0.02**
19-Feb-16		112	**112000**	**4.718**	**0.28**
26-May-16		71.8	**71800**	**4.274**	**0.55**
26-Aug-16		63.3	**63300**	**4.148**	**0.80**
17-Nov-16		64.9	**64900**	**4.173**	**1.02**
28-Feb-17		65.6	**65600**	**4.184**	**1.31**
30-May-17		59.2	**59200**	**4.081**	**1.56**
31-Aug-17		51.5	**51500**	**3.942**	**1.81**
16-Nov-17		59.0	**59000**	**4.078**	**2.02**
21-Feb-18		55	**55000**	**4.007**	**2.29**
24-May-18		43	**43000**	**3.761**	**2.54**
4-Sep-18		43	**43000**	**3.761**	**2.82**
26-Nov-18		42	**42000**	**3.738**	**3.05**
4-Mar-19		45	**45000**	**3.807**	**3.32**
22-May-19		26	**26000**	**3.258**	**3.53**
14-Aug-19		32	**32000**	**3.466**	**3.76**
21-Nov-19		33	**33000**	**3.497**	**4.04**
18-Feb-20		36	**36000**	**3.584**	**4.28**
19-May-20		23	**23000**	**3.135**	**4.53**
25-Aug-20		24	**24000**	**3.178**	**4.80**
19-Nov-20		21	**21000**	**3.045**	**5.03**
25-Feb-21		21	**21000**	**3.045**	**5.30**
19-May-21		19	**19000**	**2.944**	**5.53**
18-Aug-21		150	**150000**	**5.011**	**5.78**
17-Nov-21		110	**110000**	**4.700**	**6.03**
10-Mar-22		120	**120000**	**4.787**	**6.34**
NMWQCC		***10***	***1000***	***2.303***	



Formula

$t = -[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

Solutions

833-09, Nitrate				
Enter C_{CL}	⇒	**10**		
Enter C_o	⇒	**109**		
Enter k_{point}	⇒	**0.0998**		
Time to reach cleanup level			**23.9**	**years**

First-Order Decay Rate Calculation
for Monitored Natural Attenuation

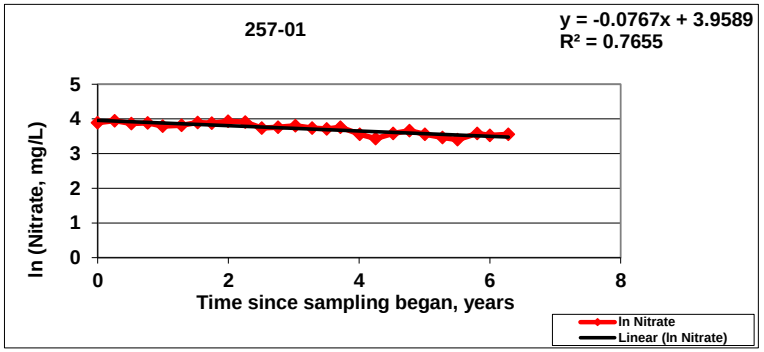
Facility Name: Dona Ana Dairies

Facility Location and Address: Dona Ana County, New Mexico

Well 257-01

Location of well (source area, down-gradient, perimeter or cross-gradient, in ROI of cleanup system, other):

Sampling Date	Depth to Ground Water	Nitrate mg/L	Nitrate ug/L	ln Nitrate mg/L	Elapsed time since 11/19/15 years
19-Nov-15		49.1	**49100**	**3.894**	**0.00**
22-Feb-16		51.9	**51900**	**3.949**	**0.26**
26-May-16		47.7	**47700**	**3.865**	**0.52**
25-Aug-16		48.7	**48700**	**3.886**	**0.77**
16-Nov-16		44.4	**44400**	**3.793**	**0.99**
2-Mar-17		45.5	**45500**	**3.818**	**1.28**
31-May-17		49.3	**49300**	**3.898**	**1.53**
18-Aug-17		48.5	**48500**	**3.882**	**1.75**
16-Nov-17		51.1	**51100**	**3.934**	**1.99**
20-Feb-18		50	**50000**	**3.912**	**2.26**
23-May-18		42	**42000**	**3.738**	**2.51**
23-Aug-18		43	**43000**	**3.761**	**2.76**
27-Nov-18		45	**45000**	**3.807**	**3.02**
1-Mar-19		42	**42000**	**3.738**	**3.28**
21-May-19		41	**41000**	**3.714**	**3.50**
6-Aug-19		43	**43000**	**3.761**	**3.72**
21-Nov-19		35	**35000**	**3.555**	**4.01**
18-Feb-20		31	**31000**	**3.434**	**4.25**
26-May-20		36	**36000**	**3.584**	**4.52**
25-Aug-20		39	**39000**	**3.664**	**4.77**
20-Nov-20		35	**35000**	**3.555**	**5.01**
25-Feb-21		32	**32000**	**3.466**	**5.27**
20-May-21		30	**30000**	**3.401**	**5.50**
8-Sep-21		36	**36000**	**3.584**	**5.81**
17-Nov-21		34	**34000**	**3.526**	**6.00**
28-Feb-22		35	**35000**	**3.555**	**6.28**
NMWQCC		***10***	***1000***	***2.303***	



Formula

$t = -[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

Solutions

257-01, Nitrate				
Enter C_{CL}	⇒	**10**		
Enter C_o	⇒	**49.1**		
Enter k_{point}	⇒	**0.0767**		
Time to reach cleanup level			**20.7**	**years**

First-Order Decay Rate Calculation
for Monitored Natural Attenuation

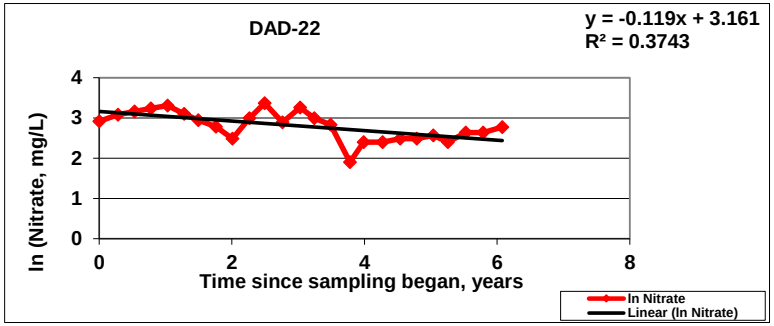
Facility Name: Dona Ana Dairies

Facility Location and Address: Dona Ana County, New Mexico

Well DAD-22

Location of well (source area, down-gradient, perimeter or cross-gradient, in ROI of cleanup system, other):

Sampling Date	Depth to Ground Water	Nitrate mg/L	Nitrate ug/L	ln Nitrate mg/L	Elapsed time since 02/25/16 years
25-Feb-16		18.5	18500	2.918	0.00
8-Jun-16		21.8	21800	3.082	0.28
6-Sep-16		23.6	23600	3.161	0.53
5-Dec-16		25.4	25400	3.235	0.78
7-Mar-17		27.3	27300	3.307	1.03
7-Jun-17		22.2	22200	3.100	1.28
23-Aug-17		19.0	19000	2.944	1.49
28-Nov-17		16.2	16200	2.785	1.76
27-Feb-18		12	12000	2.485	2.01
1-Jun-18		20	20000	2.996	2.27
24-Aug-18		29	29000	3.367	2.50
30-Nov-18		18	18000	2.890	2.76
7-Mar-19		26	26000	3.258	3.03
24-May-19		20	20000	2.996	3.24
21-Aug-19		17	17000	2.833	3.49
6-Dec-19		6.7	6700	1.902	3.78
19-Feb-20		11	11000	2.398	3.99
3-Jun-20		11	11000	2.398	4.27
8-Sep-20		12	12000	2.485	4.54
7-Dec-20		12	12000	2.485	4.79
8-Mar-21		13	13000	2.565	5.04
28-May-21		11	11000	2.398	5.26
3-Sep-21		14	14000	2.639	5.53
8-Dec-21		14	14000	2.639	5.79
23-Mar-22		16	16000	2.773	6.08
NMWQCC		***10***	***1000***	***2.303***	



Formula

$t = -[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

Solutions

DAD-22, Nitrate				
Enter C_{CL}	⟹	**10**		
Enter C_o	⟹	**18.5**		
Enter k_{point}	⟹	**0.119**		
Time to reach cleanup level			**5.2**	**years**

First-Order Decay Rate Calculation
for Monitored Natural Attenuation

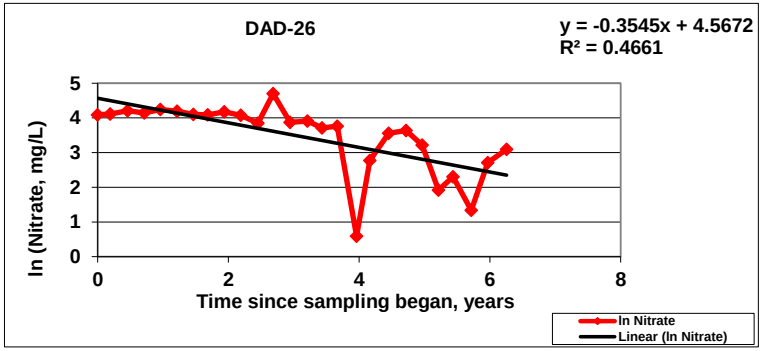
Facility Name: Dona Ana Dairies

Facility Location and Address: Dona Ana County, New Mexico

Well DAD-26

Location of well (source area, down-gradient, perimeter or cross-gradient, in ROI of cleanup system, other):

Sampling Date	Depth to Ground Water	Nitrate mg/L	Nitrate ug/L	ln Nitrate mg/L	Elapsed time since 12/22/15 years
22-Dec-15		59.6	59600	4.088	0.00
1-Mar-16		61.1	61100	4.113	0.19
6-Jun-16		67.0	67000	4.205	0.46
8-Sep-16		63.2	63200	4.146	0.72
6-Dec-16		69.6	69600	4.243	0.96
10-Mar-17		66.3	66300	4.194	1.22
9-Jun-17		60.5	60500	4.103	1.47
28-Aug-17		59.8	59800	4.091	1.68
28-Nov-17		65.1	65100	4.176	1.94
28-Feb-18		59	59000	4.078	2.19
4-Jun-18		47	47000	3.850	2.45
28-Aug-18		110	110000	4.700	2.68
30-Nov-18		48	48000	3.871	2.94
7-Mar-19		50	50000	3.912	3.21
28-May-19		41	41000	3.714	3.43
21-Aug-19		43	43000	3.761	3.67
6-Dec-19		1.8	1800	0.588	3.96
19-Feb-20		16	16000	2.773	4.16
3-Jun-20		35	35000	3.555	4.45
8-Sep-20		38	38000	3.638	4.72
7-Dec-20		25	25000	3.219	4.96
8-Mar-21		6.8	6800	1.917	5.21
28-May-21		10	10000	2.303	5.44
7-Sep-21		3.8	3800	1.335	5.72
8-Dec-21		15	15000	2.708	5.97
23-Mar-22		22	22000	3.091	6.25
NMWQCC		***10***	***1000***	***2.303***	



Formula

$t = -[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

Solutions

DAD-26, Nitrate				
Enter C_{CL}	⇒	10		
Enter C_o	⇒	59.6		
Enter k_{point}	⇒	0.3545		
Time to reach cleanup level			5.0	years