Tyson's Site
Montgomery County, Pennsylvania

Off-Site Operable Unit Remedial Investigation Report

Volume III
Appendices

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Prepared For
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APPENDIX H

WATER LEVEL DATA AND HYDROGRAPHS

Water elevations in overburden wells 2/87 to 7/87.

WELL	2/2/87	3/13/87	4/27/87	5/1/87	5/7/87	5/13/87	5/27/87	7/1/87
ERT - 1 (deep)	86.86	87.25	88.36	87.71	86.84	85.75	85.26	83.61
ERT - 1(shallow)	83.33	86.64	87.57	87.05	86.31	85.41	85.01	83.65
ERT - 2	75.13	75.21	75.64	75.41	*	74.87	74.75	74.28
001	*	63.07	63.078	63.03	62.94	62.9	62.87	61.79
002	*	59.98	62.96	62.32	62.89	60.89	60.3	58.78
003	*	*	*	*	*	*	*	*
004	91.53	91.39	91.25	91.31	90.14	90.84	90.85	90.09
005	78.58	78.51	78.76	78.66	78.57	77.9	78.62	77.8
NUS -2 A	97.19	97.14	97.15	97.15	97.13	97.13	97.15	97.1
NUS - 3	108.51	112.98	114.6	111.63	113.84	108.77	110.63	107.47
NUS - 4	75.84	76.04	77.29	76.59	75.62	75.23	74.95	74.38
NUS - 5	98.38	100.88	100.48	99.15	99.76	*	95.43	94.21
NUS - 7	*	*	60.25	59.7	59.72	59.26	59.33	58.5
B - 4	87.86	87.07	87.65	87.82	87.47	87.07	86.85	85.89

* indicates no available data

note: water level data not available from well 003 due to defect in 2" casing.

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Water levels obtained from Background Well,
Tysons Site

Well	Date	Ground water elevation (feet)
MW-1	4/18/86	188.87
	4/25/86	192.48
	5/13/86	187.07
	6/6/86	184.72
	6/13/86	184.29
	6/20/86	183.91
	6/27/86	183.32
	7/11/86	183.13
	7/18/86	182.63
	8/1/86	190.17
	8/22/86	190.62
	10/7/86	187.81
	3/12/87	196.16
	4/10/87	200.28
	4/15/87	198.66
	4/17/87	198.16
	4/27/87	196.67
	5/1/87	197.01
	5/7/87	195.95
	5/13/87	194.46
	5/27/87	192.59
	6/19/87	191.03
	7/1/87	190.42

Water levels obtained from Well Nest 2, Tysons Site

Well	Date	Ground water elevation (feet)	Well	Date	Ground water elevation (feet)
2-S	3/10/86	88.19	2-I	3/10/86	82.39
	3/25/86	88.89		3/25/86	82.83
	4/7/86	86.00		4/7/86	81.29
	4/15/86	84.27		4/15/86	80.62
	4/18/86	89.92		4/18/86	84.33
	4/25/86	87.86		4/25/86	84.79
	5/2/86	87.11		5/2/86	83.23
	5/12/86	85.84		5/12/86	81.54
	5/13/86	85.64		5/13/86	81.68
	5/23/86	82.50		5/23/86	79.39
	5/27/86	82.50		5/27/86	80.13
	5/29/86	82.13		5/29/86	79.98
	6/6/86	81.03		6/6/86	79.68
	6/13/86	80.41		6/13/86	79.24
	6/20/86	79.74		6/20/86	78.79
	6/27/86	78.92		6/27/86	78.34
	7/3/86	78.76		7/3/86	78.31
	7/11/86	78.17		7/11/86	79.03
	7/18/86	78.12		7/18/86	77.83
	7/25/86	78.04		7/25/86	78.11
	8/1/86	82.62		8/1/86	79.66
	8/8/86	80.41		8/8/86	79.49
	8/15/86	81.53		8/15/86	79.67
	8/22/86	84.81		8/22/86	80.24
	8/29/86	86.00		8/29/86	80.96
	10/4/86	*		10/4/86	77.45
	10/17/86	*		10/17/86	78.14
	1/14/87	87.17		1/14/87	83.67
	2/2/87	88.64		2/2/87	83.39
	2/4/87	86.60		2/4/87	83.49
	3/12/87	87.24		3/12/87	83.77
	4/6/87	90.07		4/6/87	86.04
	4/7/87	89.89		4/7/87	87.00
	4/8/87	89.57		4/8/87	87.41
	4/10/87	88.56		4/10/87	87.18
	4/14/87	87.72		4/14/87	84.96
	4/15/87	87.56		4/15/87	84.61
	4/17/87	87.28		4/17/87	84.04
	4/27/87	88.34		4/27/87	83.76
	5/1/87	88.07		5/1/87	84.35
	5/7/87	87.38		5/7/87	83.20
	5/13/87	86.66		5/13/87	82.08
	5/27/87	85.71		5/27/87	81.43
	6/19/87	81.45		6/19/87	80.18
	7/1/87	80.63		7/1/87	80.16

* Indicates no available data

Water levels obtained from Well Nest 3, Tysons Site .

Well	Date	Ground water elevation (feet)	Well	Date	Ground water elevation (feet)	Well	Date	Ground water elevation (feet)
3-S	3/10/86	78.66	3-I	3/10/86	78.34	3-D	3/10/86	85.74
	3/25/86	78.85		3/25/86	78.17		3/25/86	85.49
	4/7/86	78.30		4/7/86	*		4/7/86	84.18
	4/15/86	78.07		4/15/86	76.84		4/15/86	83.43
	4/18/86	79.59		4/18/86	81.65		4/18/86	84.09
	4/25/86	79.24		4/25/86	79.63		4/25/86	87.12
	5/2/86	78.86		5/2/86	78.38		5/2/86	86.20
	5/12/86	78.26		5/12/86	77.38		5/12/86	84.59
	5/13/86	78.33		5/13/86	77.08		5/13/86	84.49
	5/23/86	77.42		5/23/86	76.24		5/23/86	81.59
	5/27/86	77.47		5/27/86	76.46		5/27/86	82.17
	5/29/86	77.34		5/29/86	76.43		5/29/86	82.34
	6/6/86	76.95		6/6/86	76.12		6/6/86	82.34
	6/13/86	76.69		6/13/86	75.85		6/13/86	82.04
	6/20/86	76.43		6/20/86	75.55		6/20/86	81.73
	6/27/86	76.05		6/27/86	75.10		6/27/86	81.31
	7/3/86	76.18		7/3/86	75.19		7/3/86	80.99
	7/11/86	75.93		7/11/86	74.84		7/11/86	80.75
	7/18/86	75.62		7/18/86	*		7/18/86	80.54
	7/25/86	75.89		7/25/86	74.80		7/25/86	80.66
	8/1/86	77.49		8/1/86	76.34		8/1/86	81.83
	8/8/86	77.34		8/8/86	76.17		8/8/86	82.14
	8/15/86	77.47		8/15/86	76.17		8/15/86	82.18
	8/22/86	77.86		8/22/86	76.78		8/22/86	81.54
	8/29/86	78.48		8/29/86	76.79		8/29/86	82.88
	10/4/86	*		10/4/86	74.83		10/4/86	*
	10/17/86	*		10/17/86	74.98		10/17/86	70.29
	1/14/87	78.69		1/14/87	77.84		1/14/87	86.26
	2/2/87	78.65		2/2/87	77.81		2/2/87	85.86
	2/3/87	78.65		2/3/87	77.75		2/3/87	85.81
	2/4/87	78.70		2/4/87	77.81		2/4/87	85.86
	3/12/87	78.91		3/12/87	78.19		3/12/87	85.20
	4/6/87	79.98		4/6/87	81.78		4/6/87	84.19
	4/7/87	79.90		4/7/87	81.80		4/7/87	84.40
	4/8/87	79.83		4/8/87	81.77		4/8/87	84.61
	4/10/87	79.63		4/10/87	80.75		4/10/87	85.05
	4/14/87	79.12		4/14/87	78.88		4/14/87	85.58
	4/15/87	79.07		4/15/87	78.70		4/15/87	85.65
	4/17/87	78.93		4/17/87	78.37		4/17/87	85.67
	4/27/87	79.15		4/27/87	78.77		4/27/87	85.27
	5/1/87	79.22		5/1/87	78.74		5/1/87	85.38
	5/7/87	78.76		5/7/87	77.83		5/7/87	88.30
	5/13/87	78.33		5/13/87	77.15		5/13/87	85.03
	5/27/87	78.05		5/27/87	76.67		5/27/87	84.10
	6/19/87	77.08		6/19/87	75.79		6/19/87	82.85
	7/1/87	77.01		7/1/87	75.76		7/1/87	82.44

* Indicates no available data

Water levels obtained from Well Nest 4, Tysons Site.

Well	Date	Ground water elevation (feet)	Well	Date	Ground water elevation (feet)	Well	Date	Ground water elevation (feet)
4-S	3/10/86	50.39	4-I	3/10/86	-7.87	4-D	3/10/86	72.92
	3/25/86	21.46		3/25/86	-9.55		3/25/86	68.77
	4/7/86	62.79		4/7/86	23.21		4/7/86	72.83
	4/15/86	62.59		4/15/86	35.33		4/15/86	73.11
	4/18/86	63.07		4/18/86	38.69		4/18/86	73.77
	4/25/86	63.70		4/25/86	45.97		4/25/86	74.64
	5/2/86	63.54		5/2/86	51.22		5/2/86	74.40
	5/12/86	62.95		5/12/86	56.13		5/12/86	73.82
	5/13/86	62.97		5/13/86	59.38		5/13/86	73.46
	5/23/86	62.58		5/23/86	60.14		5/23/86	73.52
	5/27/86	62.69		5/27/86	60.14		5/27/86	73.18
	5/29/86	62.44		5/29/86	60.44		5/29/86	73.11
	6/6/86	62.42		6/6/86	61.64		6/6/86	72.77
	6/13/86	62.28		6/13/86	62.21		6/13/86	72.57
	6/20/86	61.99		6/20/86	62.64		6/20/86	72.35
	6/27/86	61.85		6/27/86	62.92		6/27/86	72.16
	7/3/86	61.76		7/3/86	63.01		7/3/86	72.03
	7/11/86	61.88		7/11/86	63.28		7/11/86	71.90
	7/18/86	61.67		7/18/86	63.20		7/18/86	71.88
	7/25/86	61.51		7/25/86	63.16		7/25/86	71.71
	8/1/86	61.76		8/1/86	63.15		8/1/86	72.28
	8/8/86	61.97		8/8/86	63.62		8/8/86	72.75
	8/15/86	62.02		8/15/86	63.49		8/15/86	72.42
	8/22/86	61.99		8/22/86	63.54		8/22/86	72.64
	8/29/86	63.22		8/29/86	63.69		8/29/86	72.90
	10/4/86	*		10/4/86	57.09		10/4/86	*
	10/17/86	*		10/17/86	49.10		10/17/86	71.72
	12/11/86	61.06		12/11/86	61.27		12/11/86	72.56
	2/3/87	63.01		2/3/87	65.04		2/3/87	74.27
	2/4/87	63.00		2/4/87	65.04		2/4/87	74.27
	3/12/87	63.28		3/12/87	65.02		3/12/87	74.40
	4/6/87	63.43		4/6/87	64.83		4/6/87	74.38
	4/7/87	63.69		4/7/87	65.03		4/7/87	74.79
	4/8/87	63.90		4/8/87	65.00		4/8/87	74.91
	4/10/87	63.90		4/10/87	65.09		4/10/87	75.09
	4/14/87	63.58		4/14/87	65.27		4/14/87	74.72
	4/15/87	63.63		4/15/87	65.19		4/15/87	74.73
	4/17/87	63.61		4/17/87	65.23		4/17/87	74.83
	4/27/87	63.54		4/27/87	65.23		4/27/87	74.40
	5/1/87	63.55		5/1/87	65.27		5/1/87	74.51
	5/7/87	63.47		5/7/87	65.20		5/7/87	74.52
	5/13/87	63.26		5/13/87	65.20		5/13/87	74.02
	5/27/87	63.09		5/27/87	64.96		5/27/87	73.69
	6/19/87	62.50		6/19/87	64.51		6/19/87	72.94
	7/1/87	62.49		7/1/87	64.31		7/1/87	72.97

* Indicates no available data

Water levels obtained from Well Nest 5, Tysons Site.

Well	Date	Ground water elevation (feet)	Well	Date	Ground water elevation (feet)	Well	Date	Ground water elevation (feet)
5-S	3/10/86	77.89	5-I	3/10/86	82.09	5-D	3/10/86	<-22.81
	3/25/86	77.96		3/25/86	83.42		3/25/86	-6.64
	4/7/86	77.56		4/7/86	22.00		4/7/86	21.64
	4/15/86	77.18		4/15/86	81.58		4/15/86	34.47
	4/18/86	78.79		4/18/86	>84.34		4/18/86	37.24
	4/25/86	78.51		4/25/86	>84.34		4/25/86	45.78
	5/2/86	78.01		5/2/86	84.05		5/2/86	52.46
	5/12/86	77.49		5/12/86	82.31		5/12/86	59.82
	5/13/86	77.89		5/13/86	81.73		5/13/86	60.19
	5/23/86	76.45		5/23/86	80.19		5/23/86	64.83
	5/27/86	76.77		5/27/86	80.63		5/27/86	66.16
	5/29/86	76.73		5/29/86	81.02		5/29/86	66.87
	6/6/86	76.47		6/6/86	80.46		6/6/86	69.64
	6/13/86	76.29		6/13/86	80.08		6/13/86	71.38
	6/20/86	75.89		6/20/86	79.72		6/20/86	72.95
	6/27/86	75.41		6/27/86	79.27		6/27/86	74.18
	7/3/86	75.92		7/3/86	79.26		7/3/86	74.94
	7/11/86	75.40		7/11/86	78.99		7/11/86	75.82
	7/18/86	75.02		7/18/86	78.64		7/18/86	76.47
	7/25/86	75.41		7/25/86	78.93		7/25/86	77.04
	8/1/86	76.51		8/1/86	80.63		8/1/86	>77.19
	8/8/86	76.64		8/8/86	81.10		8/8/86	>77.19
	8/15/86	76.61		8/15/86	80.57		8/15/86	76.57
	8/22/86	77.36		8/22/86	81.03		8/22/86	>77.19
	8/29/86	77.18		8/29/86	81.65		8/29/86	>77.19
	10/4/86	*		10/4/86	>84.34		10/4/86	*
	10/17/86	*		10/17/86	83.89		10/17/86	-4.46
	2/3/87	78.96		2/3/87	83.20		2/3/87	72.29
	2/4/87	77.10		2/4/87	80.62		2/4/87	78.25
	3/12/87	77.51		3/12/87	82.95		3/12/87	78.48
	4/6/87	78.83		4/6/87	85.36		4/6/87	78.29
	4/7/87	78.90		4/7/87	86.24		4/7/87	83.39
	4/8/87	78.90		4/8/87	86.54		4/8/87	83.61
	4/10/87	78.88		4/10/87	86.35		4/10/87	83.79
	4/14/87	78.03		4/14/87	84.49		4/14/87	83.04
	4/15/87	78.03		4/15/87	84.04		4/15/87	83.27
	4/17/87	77.78		4/17/87	83.43		4/17/87	82.99
	4/27/87	77.99		4/27/87	83.37		4/27/87	81.96
	5/1/87	77.98		5/1/87	83.86		5/1/87	81.84
	5/7/87	77.66		5/7/87	82.81		5/7/87	81.54
	5/13/87	77.17		5/13/87	81.74		5/13/87	81.07
	5/27/87	76.06		5/27/87	81.14		5/27/87	80.69
	6/19/87	76.30		6/19/87	79.95		6/19/87	80.51
	7/1/87	76.27		7/1/87	79.84		7/1/87	80.52

* Indicates no available data

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Water levels obtained from Well Nest 6, Tysons Site.

Well	Date	Ground water elevation (feet)	Well	Date	Ground water elevation (feet)	Well	Date	Ground water elevation (feet)
6-S	3/10/86	76.29	6-I	3/10/86	75.63	6-D	3/10/86	>86.88
	3/25/86	76.47		3/25/86	75.78		3/25/86	>86.88
	4/7/86	76.16		4/7/86	74.73		4/7/86	>86.88
	4/15/86	75.89		4/15/86	74.46		4/15/86	>86.88
	4/18/86	76.33		4/18/86	76.37		4/18/86	82.93
	4/25/86	77.04		4/25/86	76.93		4/25/86	82.93
	5/2/86	76.45		5/2/86	75.75		5/2/86	82.91
	5/12/86	76.07		5/12/86	74.71		5/12/86	82.98
	5/13/86	76.07		5/13/86	74.70		5/13/86	82.88
	5/23/86	75.43		5/23/86	73.75		5/23/86	83.43
	5/27/86	75.53		5/27/86	74.06		5/27/86	82.83
	5/29/86	76.57		5/29/86	73.88		5/29/86	83.84
	6/6/86	75.27		6/6/86	73.37		6/6/86	82.80
	6/13/86	75.17		6/13/86	73.37		6/13/86	82.40
	6/20/86	74.85		6/20/86	73.11		6/20/86	82.10
	6/27/86	74.47		6/27/86	72.77		6/27/86	81.81
	7/3/86	74.57		7/3/86	72.42		7/3/86	81.39
	7/11/86	74.24		7/11/86	72.46		7/11/86	81.22
	7/18/86	73.83		7/18/86	72.06		7/18/86	81.00
	7/25/86	74.51		7/25/86	72.48		7/25/86	80.20
	8/1/86	75.47		8/1/86	73.61		8/1/86	82.78
	8/8/86	75.42		8/8/86	73.57		8/8/86	82.73
	8/15/86	74.92		8/15/86	73.63		8/15/86	82.69
	8/22/86	76.21		8/22/86	73.95		8/22/86	82.44
	8/29/86	75.88		8/29/86	73.77		8/29/86	82.84
	10/4/86	*		10/4/86	71.95		10/4/86	*
	10/17/86	*		10/17/86	72.21		10/17/86	*
	2/4/87	76.40		2/4/87	74.86		2/4/87	84.67
	3/12/87	76.42		3/12/87	75.08		3/12/87	85.46
	4/6/87	78.48		4/6/87	77.84		4/6/87	87.37
	4/7/87	78.37		4/7/87	78.09		4/7/87	88.38
	4/8/87	78.27		4/8/87	78.11		4/8/87	88.75
	4/10/87	77.72		4/10/87	77.39		4/10/87	88.65
	4/14/87	76.83		4/14/87	75.89		4/14/87	86.75
	4/15/87	76.69		4/15/87	75.69		4/15/87	86.30
	4/17/87	76.57		4/17/87	75.40		4/17/87	85.71
	4/27/87	76.98		4/27/87	75.50		4/27/87	85.54
	5/1/87	76.76		5/1/87	75.56		5/1/87	86.01
	5/7/87	76.34		5/7/87	74.90		5/7/87	85.06
	5/13/87	76.01		5/13/87	74.20		5/13/87	83.90
	5/27/87	75.69		5/27/87	73.82		5/27/87	83.25
	6/19/87	75.23		6/19/87	72.98		6/19/87	82.17
	7/1/87	75.22		7/1/87	72.97		7/1/87	82.02

* indicates no available data

Water levels obtained from Well Nest 7, Tysons Site.

Well	Date	Ground water elevation (feet)	Well	Date	Ground water elevation (feet)	Well	Date	Ground water elevation (feet)
7-S	3/10/86	*	7-I	3/10/86	*	7-D	3/10/86	*
	3/25/86	60.05		3/25/86	60.39		3/25/86	<-32.19
	4/7/86	60.01		4/7/86	59.95		4/7/86	-32.43
	4/15/86	59.70		4/15/86	59.84		4/15/86	-10.17
	4/18/86	61.63		4/18/86	61.93		4/18/86	-3.18
	4/25/86	60.53		4/25/86	60.61		4/25/86	10.98
	5/2/86	60.05		5/2/86	60.01		5/2/86	21.70
	5/12/86	59.83		5/12/86	59.69		5/12/86	32.86
	5/13/86	59.66		5/13/86	59.57		5/13/86	33.81
	5/23/86	60.10		5/23/86	60.00		5/23/86	41.35
	5/27/86	59.60		5/27/86	59.52		5/27/86	43.83
	5/29/86	59.50		5/29/86	59.47		5/29/86	44.98
	6/6/86	59.33		6/6/86	59.29		6/6/86	48.46
	6/13/86	59.43		6/13/86	59.40		6/13/86	50.87
	6/20/86	59.26		6/20/86	59.77		6/20/86	52.76
	6/27/86	59.15		6/27/86	59.12		6/27/86	54.15
	7/3/86	59.32		7/3/86	59.33		7/3/86	55.15
	7/11/86	59.17		7/11/86	59.23		7/11/86	56.28
	7/18/86	59.07		7/18/86	59.01		7/18/86	56.86
	7/25/86	59.08		7/25/86	59.05		7/25/86	57.39
	8/1/86	59.15		8/1/86	59.13		8/1/86	57.72
	8/8/86	59.26		8/8/86	59.16		8/8/86	58.08
	8/15/86	59.15		8/15/86	59.25		8/15/86	58.46
	8/22/86	60.06		8/22/86	59.80		8/22/86	58.65
	8/29/86	59.45		8/29/86	59.35		8/29/86	58.90
	10/4/86	*		10/4/86	59.08		10/4/86	*
	10/17/86	*		10/17/86	59.21		10/17/86	-1.44
	2/3/87	60.17		2/3/87	59.95		2/3/87	55.31
	2/4/87	60.50		2/4/87	59.95		2/4/87	55.31
	3/12/87	60.32		3/12/87	60.13		3/12/87	58.02
	4/6/87	61.97		4/6/87	61.90		4/6/87	58.88
	4/7/87	61.44		4/7/87	61.30		4/7/87	58.93
	4/8/87	61.16		4/8/87	61.01		4/8/87	58.97
	4/10/87	60.76		4/10/87	60.61		4/10/87	59.06
	4/14/87	60.37		4/14/87	60.19		4/14/87	59.14
	4/15/87	60.30		4/15/87	60.07		4/15/87	59.20
	4/17/87	60.29		4/17/87	60.06		4/17/87	59.24
	4/27/87	60.26		4/27/87	60.11		4/27/87	59.42
	5/1/87	60.06		5/1/87	59.82		5/1/87	59.45
	5/7/87	60.12		5/7/87	59.84		5/7/87	59.47
	5/13/87	59.89		5/13/87	59.61		5/13/87	59.50
	5/27/87	59.95		5/27/87	59.69		5/27/87	59.59
	6/19/87	59.35		6/19/87	59.16		6/19/87	59.46
	7/1/87	59.43		7/1/87	59.25		7/1/87	59.45

* Indicates no available data

Water levels obtained from Well Nest 8, Tysons Site.

Well	Date	Ground water elevation (feet)	Well	Date	Ground water elevation (feet)	Well	Date	Ground water elevation (feet)
8-S	3/10/86	62.00	8-I	3/10/86	72.06	8-D	3/10/86	*
	3/25/86	62.77		3/25/86	72.79		3/25/86	39.34
	4/7/86	62.63		4/7/86	72.71		4/7/86	55.63
	4/15/86	62.59		4/15/86	72.46		4/15/86	61.73
	4/18/86	65.36		4/18/86	75.21		4/18/86	63.77
	4/25/86	62.06		4/25/86	74.20		4/25/86	68.49
	5/2/86	62.99		5/2/86	71.54		5/2/86	69.44
	5/12/86	62.45		5/12/86	72.85		5/12/86	>71.19
	5/13/86	62.60		5/13/86	73.37		5/13/86	>71.19
	5/23/86	62.53		5/23/86	73.87		5/23/86	71.16
	5/27/86	62.16		5/27/86	74.24		5/27/86	71.15
	5/29/86	62.16		5/29/86	74.42		5/29/86	71.16
	6/6/86	61.91		6/6/86	75.16		6/6/86	71.16
	6/13/86	61.96		6/13/86	76.05		6/13/86	71.10
	6/20/86	61.71		6/20/86	74.32		6/20/86	71.12
	6/27/86	61.59		6/27/86	76.24		6/27/86	71.11
	7/3/86	61.73		7/3/86	>76.58		7/3/86	71.13
	7/11/86	61.50		7/11/86	76.32		7/11/86	71.15
	7/18/86	61.49		7/18/86	76.31		7/18/86	71.16
	7/25/86	61.57		7/25/86	76.30		7/25/86	71.13
	8/1/86	61.60		8/1/86	>76.58		8/1/86	71.14
	8/8/86	61.66		8/8/86	>76.58		8/8/86	>71.19
	8/15/86	61.65		8/15/86	>76.58		8/15/86	>71.19
	8/22/86	62.47		8/22/86	>76.58		8/22/86	>71.19
	8/29/86	62.21		8/29/86	>76.58		8/29/86	>71.19
	10/4/86	*		10/4/86	>76.58		10/4/86	*
	10/17/86	*		10/17/86	75.20		10/17/86	>71.19
	2/4/87	63.00		2/4/87	76.03		2/4/87	80.59
	3/12/87	63.39		3/12/87	77.55		3/12/87	79.11
	4/8/87	64.82		4/8/87	80.33		4/8/87	83.89
	4/10/87	64.53		4/10/87	79.90		4/10/87	81.69
	4/14/87	63.89		4/14/87	78.51		4/14/87	80.18
	4/15/87	60.67		4/15/87	78.18		4/15/87	79.59
	4/17/87	63.57		4/17/87	77.85		4/17/87	79.36
	4/27/87	63.74		4/27/87	77.77		4/27/87	80.62
	5/1/87	63.41		5/1/87	77.91		5/1/87	78.52
	5/7/87	63.25		5/7/87	77.36		5/7/87	79.14
	5/13/87	62.84		5/13/87	76.52		5/13/87	78.82
	5/27/87	62.81		5/27/87	76.20		5/27/87	79.05
	6/19/87	62.02		6/19/87	75.37		6/19/87	78.22
	7/1/87	62.07		7/1/87	75.32		7/1/87	78.14

* Indicates no available data

Water levels obtained from Well Nest 9, Tysons Site.

Well	Date	Ground water elevation (feet)	Well	Date	Ground water elevation (feet)	Well	Date	Ground water elevation (feet)
9-S	7/25/86	63.04	9-I	7/25/86	26.33	9-D	7/18/86	<-20.64
	8/1/86	63.21		8/1/86	59.26		7/25/86	14.54
	8/8/86	60.13		8/8/86	58.83		8/1/86	37.23
	8/15/86	60.15		8/15/86	60.04		8/8/86	51.51
	8/20/86	60.26		8/22/86	60.22		8/15/86	58.80
	12/11/86	59.50		8/29/86	60.57		8/22/86	63.55
	2/3/87	61.16		10/4/86	59.78		8/29/86	66.65
	2/4/87	61.20		10/17/86	59.52		10/4/86	*
	3/12/87	61.48		12/11/86	59.38		10/17/86	43.03
	4/6/87	62.49		2/3/87	61.60		12/11/86	70.38
	4/7/87	62.54		2/4/87	61.60		2/3/87	75.92
	4/8/87	62.30		3/12/87	61.71		2/4/87	75.92
	4/10/87	62.08		4/6/87	61.42		3/12/87	75.94
	4/14/87	61.74		4/7/87	61.55		4/6/87	76.45
	4/15/87	61.71		4/8/87	61.63		4/7/87	76.55
	4/17/87	61.67		4/10/87	61.77		4/8/87	76.71
	4/27/87	61.78		4/14/87	61.51		4/10/87	76.90
	5/1/87	61.57		4/15/87	61.88		4/14/87	77.60
	5/7/87	61.56		4/17/87	61.90		4/15/87	77.78
	5/13/87	61.19		4/27/87	61.91		4/17/87	78.05
	5/27/87	61.12		5/1/87	61.99		4/27/87	78.59
	6/19/87	60.54		5/7/87	61.87		5/1/87	78.69
	7/1/87	60.54		5/13/87	61.87		5/7/87	78.70
				5/27/87	61.68		5/13/87	78.66
				6/19/87	61.10		5/27/87	78.40
				7/1/87	61.09		6/19/87	77.94
							7/1/87	77.83

* indicates no available data

Water levels obtained from Well Nest 10, Tysons Site.

Well	Date	Ground water elevation (feet)	Well	Date	Ground water elevation (feet)	Well	Date	Ground water elevation (feet)	Well	Date	Ground water elevation (feet)
10-S	8/1/86	59.54	10-I	8/15/86	-13.03	10-D	8/15/86	57.15	10-XD	10/17/86	-115.61
	8/8/86	59.66		8/22/86	42.00		8/22/86	60.88		2/2/87	72.90
	8/15/86	59.79		8/29/86	57.44		8/29/86	60.65		2/3/87	72.00
	8/29/86	60.18		10/4/86	60.32		10/4/86	*		2/4/87	72.00
	2/2/87	61.00		10/17/86	60.26		10/17/86	60.78		3/12/87	72.70
	2/3/87	60.97		2/2/87	62.92		2/2/87	60.90		4/6/87	76.01
	2/4/87	61.00		2/3/87	62.87		2/3/87	60.80		4/7/87	76.37
	3/12/87	61.32		2/4/87	62.90		2/4/87	60.80		4/8/87	76.70
	4/6/87	63.12		3/12/87	63.24		3/12/87	61.00		4/10/87	77.39
	4/7/87	63.07		4/6/87	62.41		4/6/87	62.15		4/14/87	77.52
	4/8/87	62.73		4/7/87	62.78		4/7/87	62.49		4/15/87	77.30
	4/10/87	62.38		4/8/87	62.83		4/8/87	62.09		4/17/87	77.25
	4/14/87	62.08		4/10/87	62.82		4/10/87	61.67		4/27/87	76.85
	4/15/87	61.95		4/14/87	62.72		4/14/87	61.33		5/1/87	77.11
	4/17/87	61.89		4/15/87	62.57		4/15/87	61.30		5/7/87	77.08
	4/27/87	62.16		4/17/87	62.50		4/17/87	61.12		5/13/87	76.77
	5/1/87	61.89		4/27/87	62.34		4/27/87	61.15		5/27/87	76.31
	5/7/87	61.75		5/1/87	62.35		5/1/87	60.94		6/19/87	75.91
	5/13/87	61.16		5/7/87	62.20		5/7/87	60.99		7/1/87	75.88
	5/27/87	61.39		5/13/87	62.00		5/13/87	60.61			
	6/19/87	61.05		5/27/87	61.95		5/27/87	60.62			
	7/1/87	60.85		6/19/87	61.36		6/19/87	60.06			
				7/1/87	61.51		7/1/87	60.06			

* indicates no available data

AR300804

Water levels obtained from Well Nest 11, Tysons Site.

Well	Date	Ground water elevation (feet)	Well	Date	Ground water elevation (feet)	Well	Date	Ground water elevation (feet)
11-S	2/4/87	61.50	11-I	2/4/87	78.30	11-D	8/29/86	>71.13
	3/12/87	61.75		3/12/87	78.24		10/4/86	*
	4/6/87	63.61		4/6/87	76.70		10/17/86	70.11
	4/7/87	63.13		4/7/87	>80.32		2/4/87	77.73
	4/8/87	62.69		4/8/87	80.38		3/12/87	75.34
	4/10/87	62.52		4/10/87	81.83		4/6/87	80.50
	4/14/87	62.06		4/14/87	80.37		4/7/87	81.12
	4/15/87	61.92		4/15/87	80.09		4/8/87	81.23
	4/17/87	61.74		4/17/87	79.75		4/10/87	81.30
	4/27/87	61.83		4/27/87	79.41		4/14/87	80.12
	5/1/87	61.58		5/1/87	79.83		4/15/87	79.71
	5/7/87	61.55		5/7/87	79.11		4/17/87	79.33
	5/13/87	61.14		5/13/87	78.14		4/27/87	79.03
	5/27/87	61.35		5/27/87	77.63		5/1/87	79.49
	6/19/87	60.67		6/19/87	76.66		5/7/87	78.83
	7/1/87	60.62		7/1/87	76.68		5/13/87	77.87
							5/27/87	77.46
							6/19/87	76.64
							7/1/87	76.56

* indicates no available data

Water levels obtained from Well Nest 12, Tysons Site

Well	Date	Ground water elevation (feet)	Well	Date	Ground water elevation (feet)
12-S	10/4/86	*	12-D	10/4/86	57.59
	10/17/86	*		10/17/86	45.99
	2/2/87	61.16		2/2/87	59.89
	2/3/87	61.19		2/3/87	59.90
	2/4/87	61.20		2/4/87	59.90
	3/3/87	62.42		3/3/87	61.31
	3/12/87	61.32		3/12/87	60.25
	4/6/87	62.88		4/6/87	61.43
	4/7/87	62.61		4/7/87	61.64
	4/8/87	62.35		4/8/87	61.27
	4/10/87	62.00		4/10/87	60.94
	4/14/87	60.99		4/14/87	60.98
	4/15/87	61.37		4/15/87	60.31
	4/17/87	61.23		4/17/87	60.21
	4/27/87	61.34		4/27/87	60.26
	5/1/87	61.17		5/1/87	60.19
	5/7/87	61.08		5/7/87	60.09
	5/13/87	60.79		5/13/87	59.83
	5/27/87	60.76		5/27/87	59.73
	6/19/87	60.19		6/19/87	59.15
	7/1/87	60.20		7/1/87	59.27

* indicates no available data

WATER ELEVATIONS FROM STAFF GAUGES
AND RIVER PIEZOMETERS
(feet above mean sea level)

DATE	4/24/87	4/27/87	5/1/87	5/7/87	5/27/87	6/19/87	7/1/87
Staff Gauge-1		59.29	59.12	59.22	59.06	58.63	58.66
Staff Gauge-2	59.11	59.24	59.04	59.13	59.00	58.57	58.61
Piezometer-1	54.89	56.95	56.97	57.51	58.71	58.79	58.75
Piezometer-2	59.10	59.25	59.13	59.23	58.91	*	58.57
Piezometer-3	58.21	*	56.87	57.80	58.59	58.85	58.81
Piezometer-4	59.52	59.62	59.52	59.34	59.41	58.83	58.88
Piezometer-5	59.10	58.84	59.78	59.97	59.80	59.63	59.51
Piezometer-6	56.00	55.95	56.32	56.40	56.44	*	56.51
Piezometer-7	52.09	*	52.60	53.87	56.63	*	58.40
Piezometer-8	52.72	58.84	59.56	59.91	59.70	59.39	59.21

* -Indicates no available data

AR300807

DISCHARGE MEASUREMENTS FROM WIERS
(gallons per minute)

DATE	5/1/87	5/7/87	5/13/87	5/27/87	6/19/87	6/24/87	7/1/87
WIER NUMBER							
Wier 1	1.25	1.3	1.1	1.4	0	1.89	0
Wier 2	0.66	0.8	0.69	0.78	0	0.61	0
Wier 3	24	28.4	8	19.4	0	0.9	0
Wier 4	11	9.2	0	0	0	13	1.5
Wier 5	24	13	0	0	0	0	0
Wier 6	2.6	2	0	0.04	0	0	0
Wier 7	24	25.5	15	14	7.5	9.8	7.5

AR300808

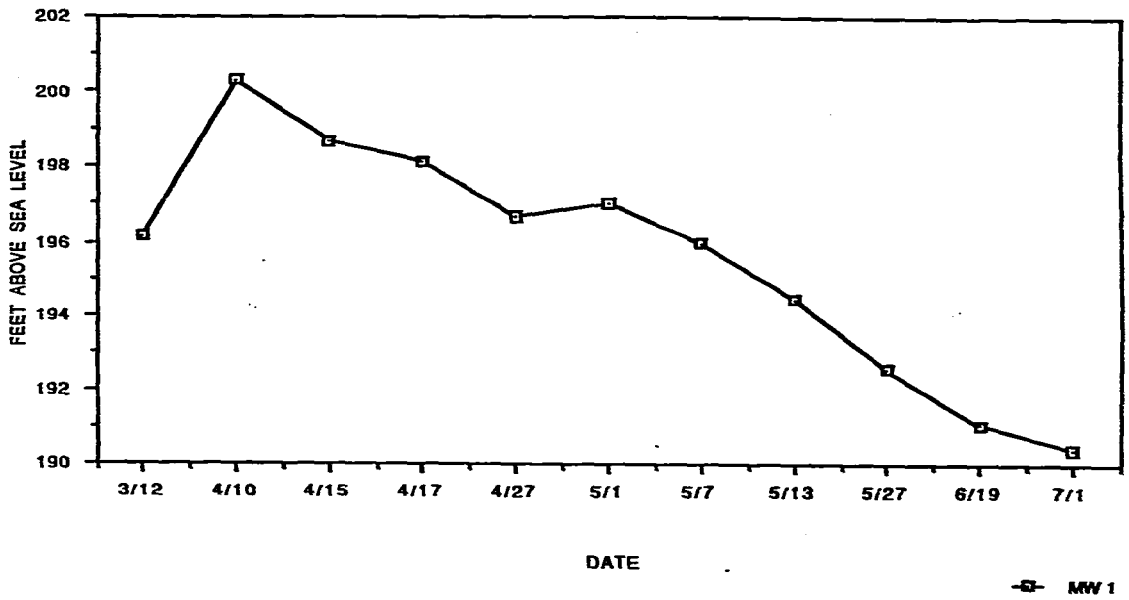
Weekly precipitation, Montgomery County Landfill, Upper Merion Township,
1 January thru 30 June, 1987*

JANUARY		FEBRUARY		MARCH	
Date	Precipitation (inches)	Date	Precipitation (inches)	Date	Precipitation (inches)
1/1 - 1/4	1.30	2 / 1	0.00	3/1/87	0.80
1/5 - 1/11	0.28	2/2 - 2/8	0.00	3/2 - 3/8	0.03
1/12 - 1/18	0.72	2/9 - 2/15	0.40	3/9 - 3/15	0.09
1/19 - 1/25	2.20	2/16 - 2/22	0.00	3/16 - 3/22	0.00
1/26 - 1/30	0.32	2/23 - 2/28	1.19	3/23 - 3/29	0.30
				3/30 - 3/31	1.10

APRIL		MAY		JUNE	
Date	Precipitation (inches)	Date	Precipitation (inches)	Date	Precipitation (inches)
4/1 - 4/5	2.55	5/1 - 5/3	0.32	6/1 - 6/7	1.23
4/6 - 4/12	0.19	5/4 - 5/10	0.73	6/8 - 6/14	0.35
4/13 - 4/19	0.50	5/11 - 5/17	0.26	6/15 - 6/21	0.25
4/20 - 4/26	1.74	5/18 - 5/24	1.57	6/22 - 6/28	0.48
4/27 - 4/30	0.14	5/25 - 5/31	0.20	6/29 - 6/30	0.00

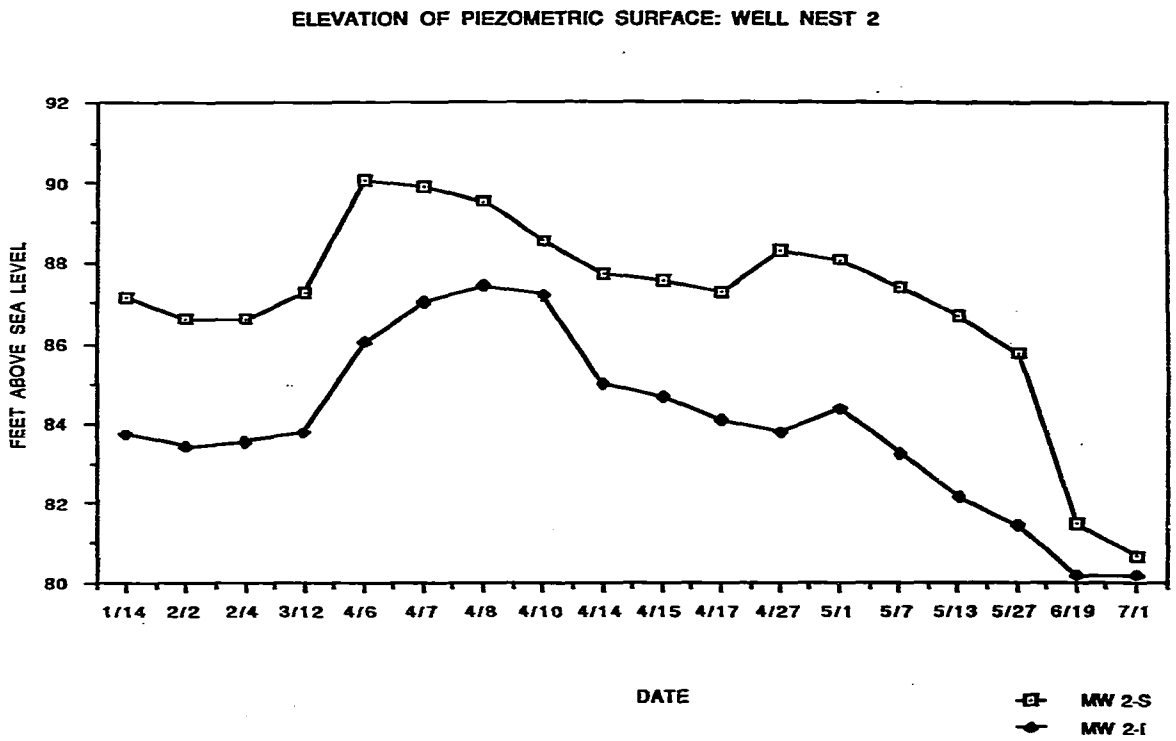
* source: Philadelphia Suburban Water Co., personal communication, 21 July 1987

ERM



AR300810

ERM



AR300811

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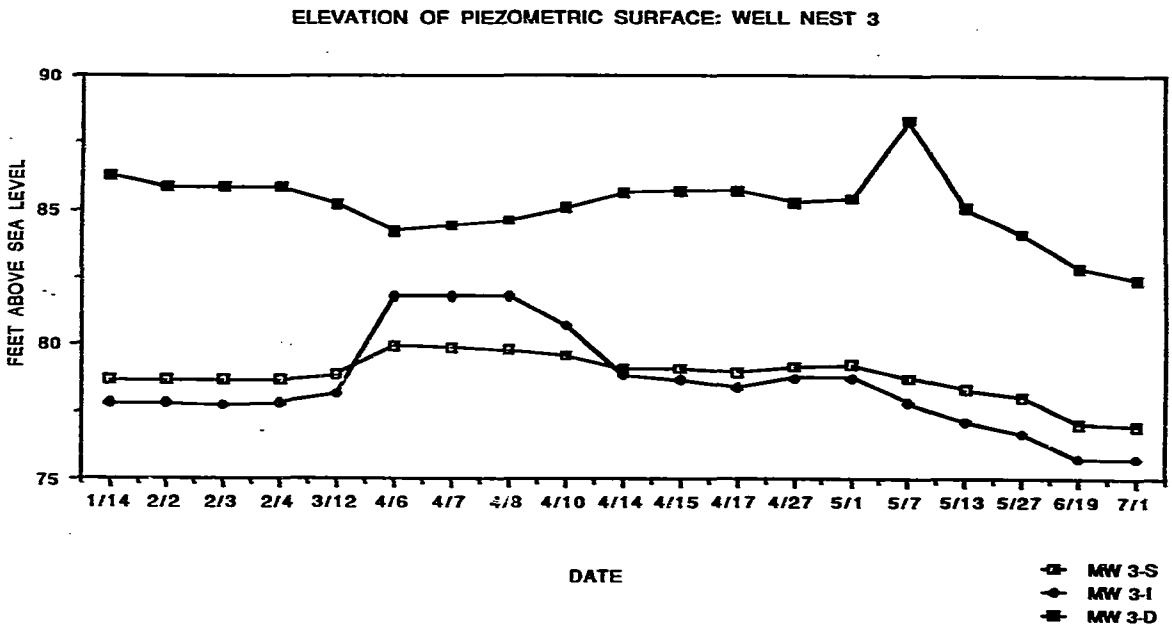

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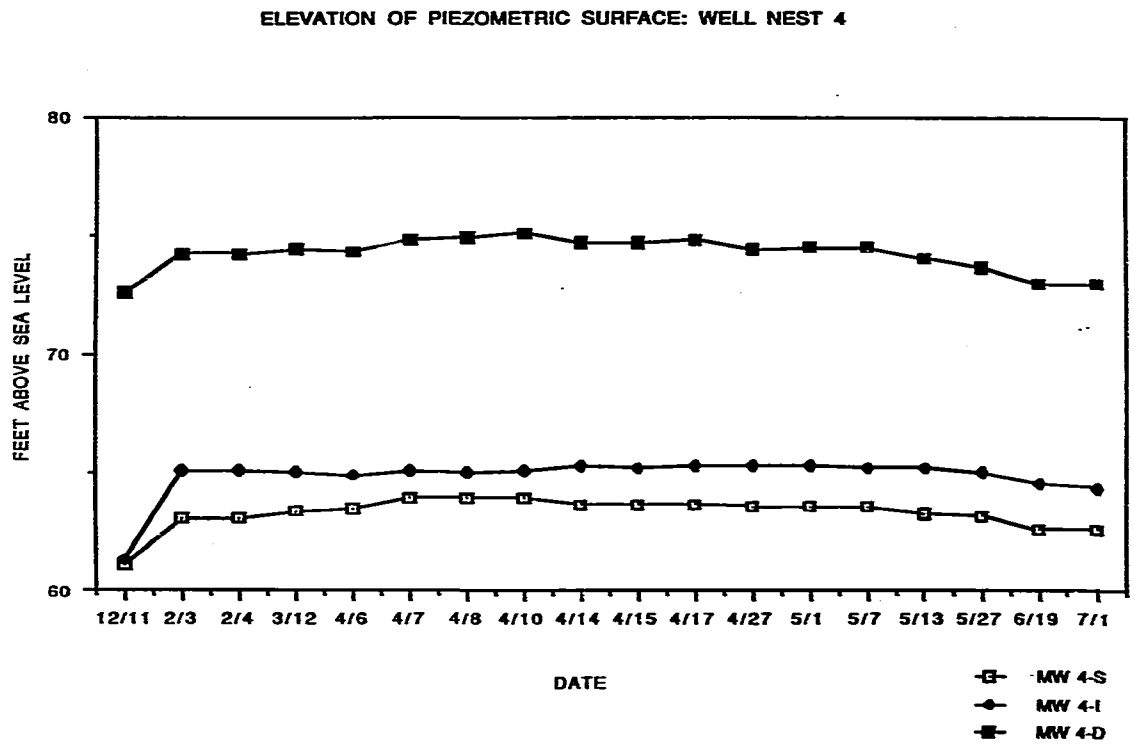

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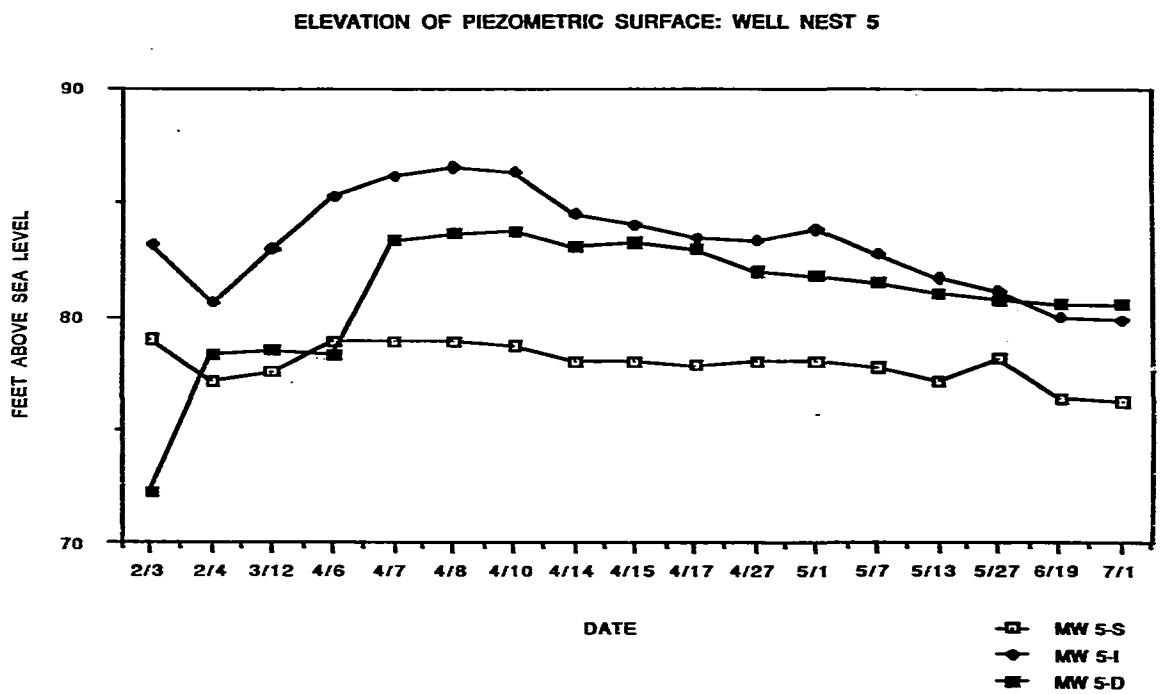

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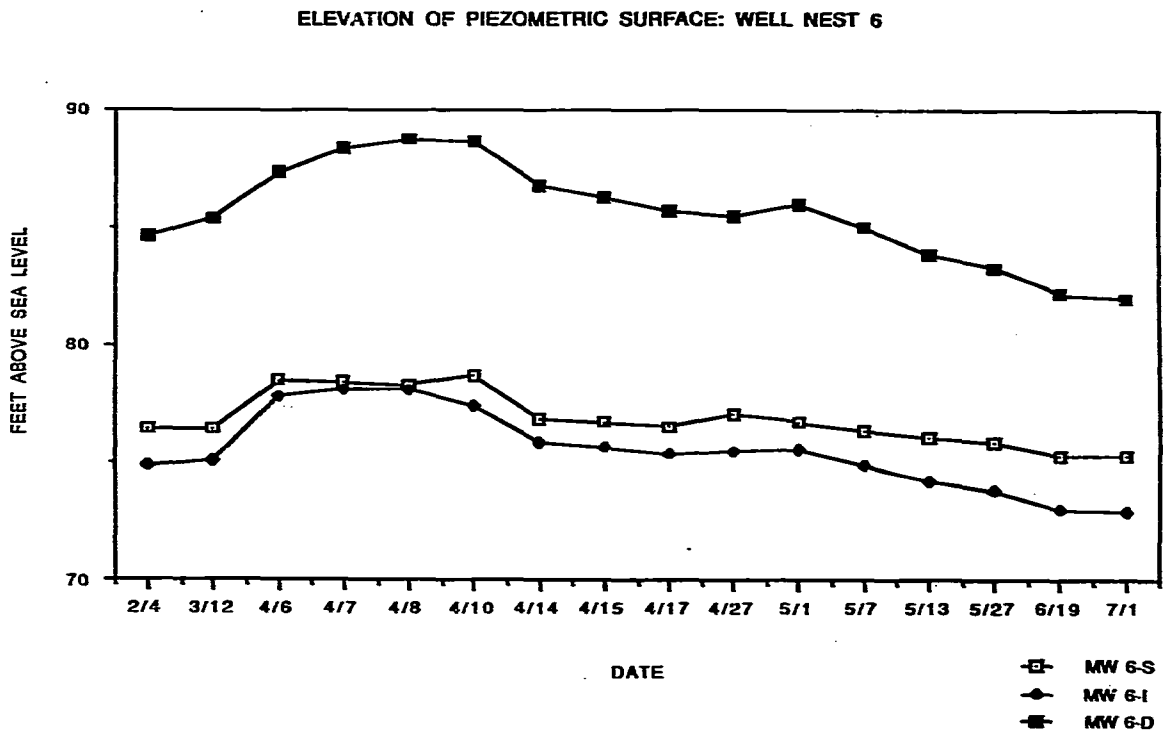

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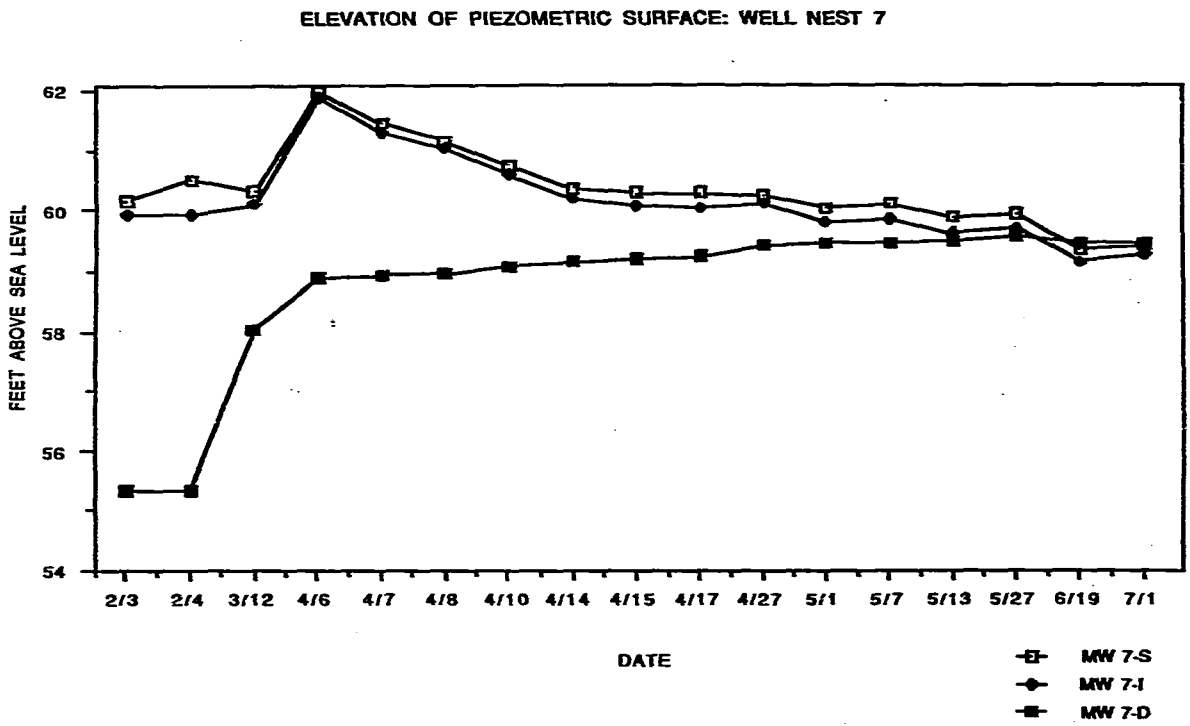

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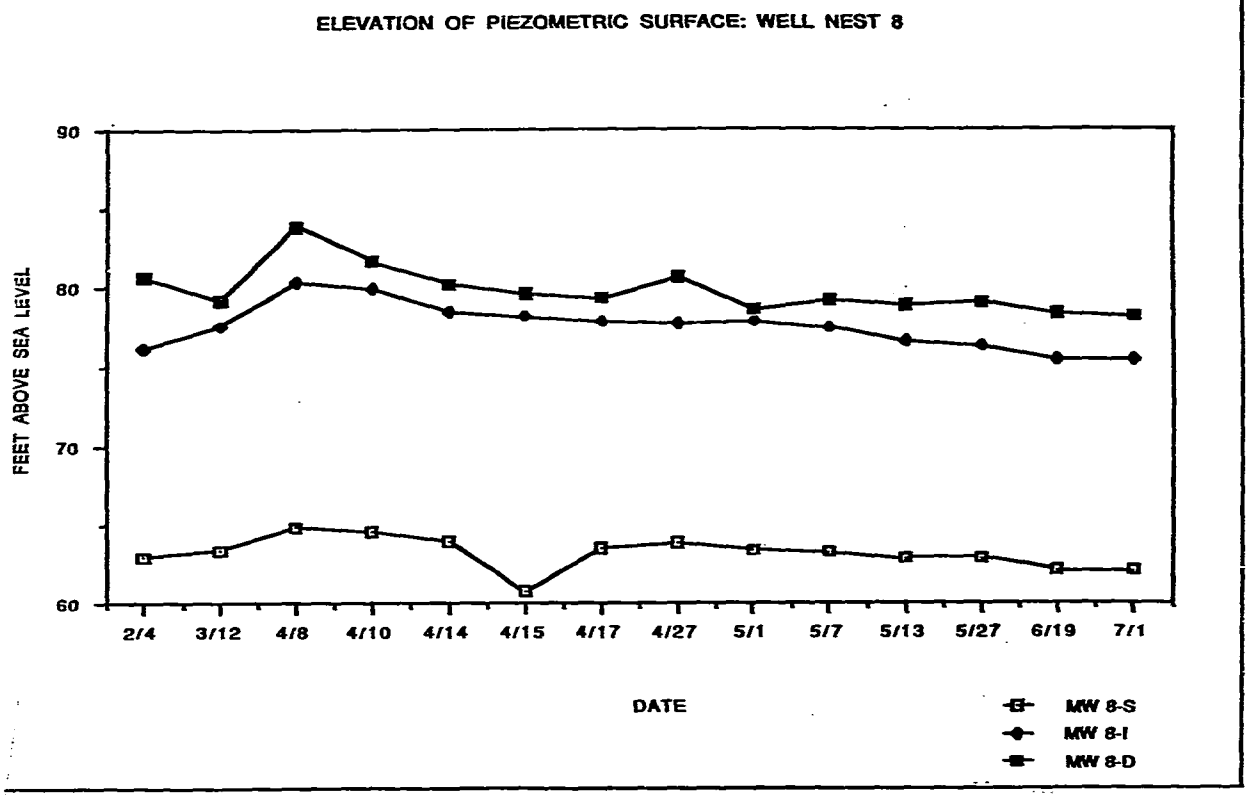

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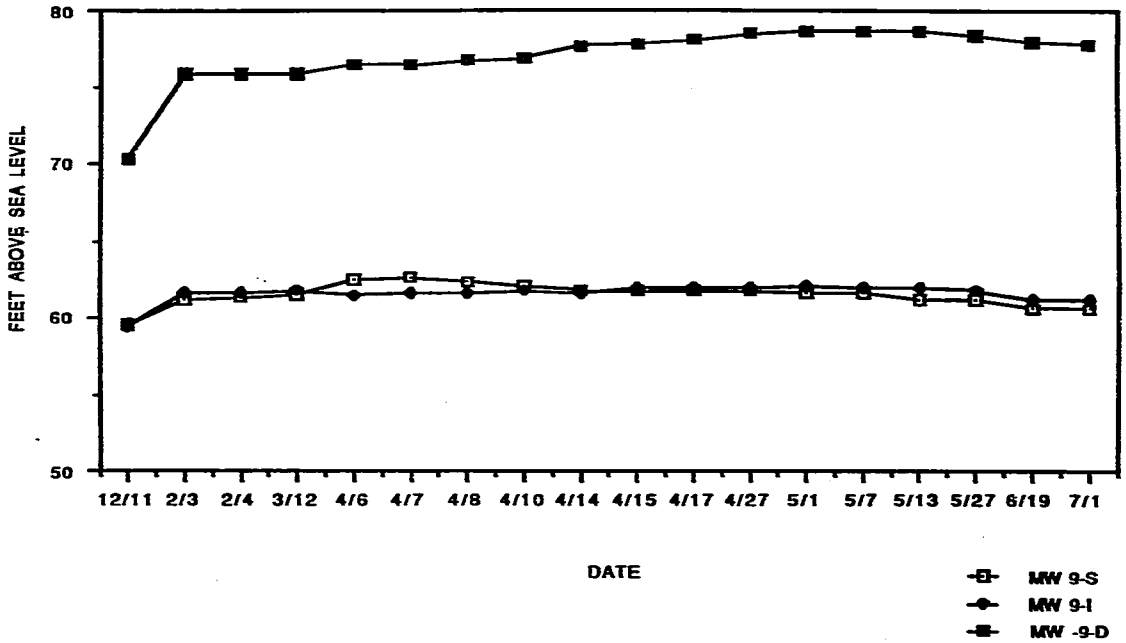

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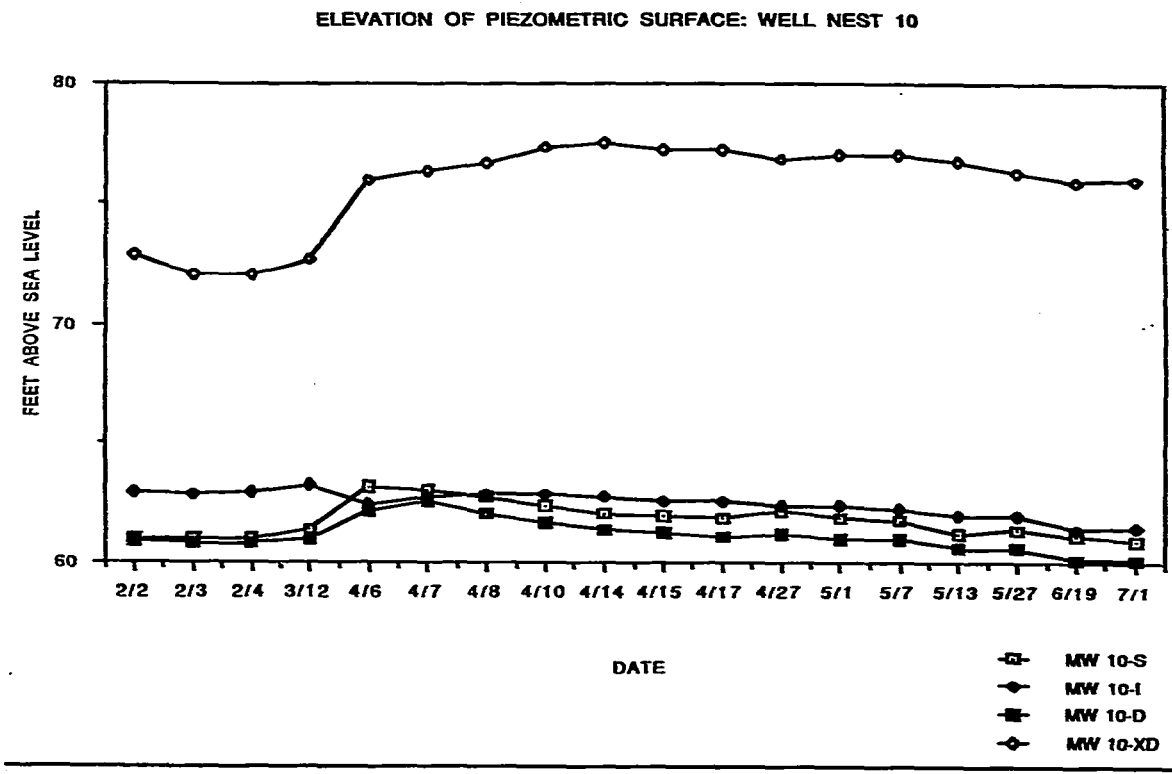

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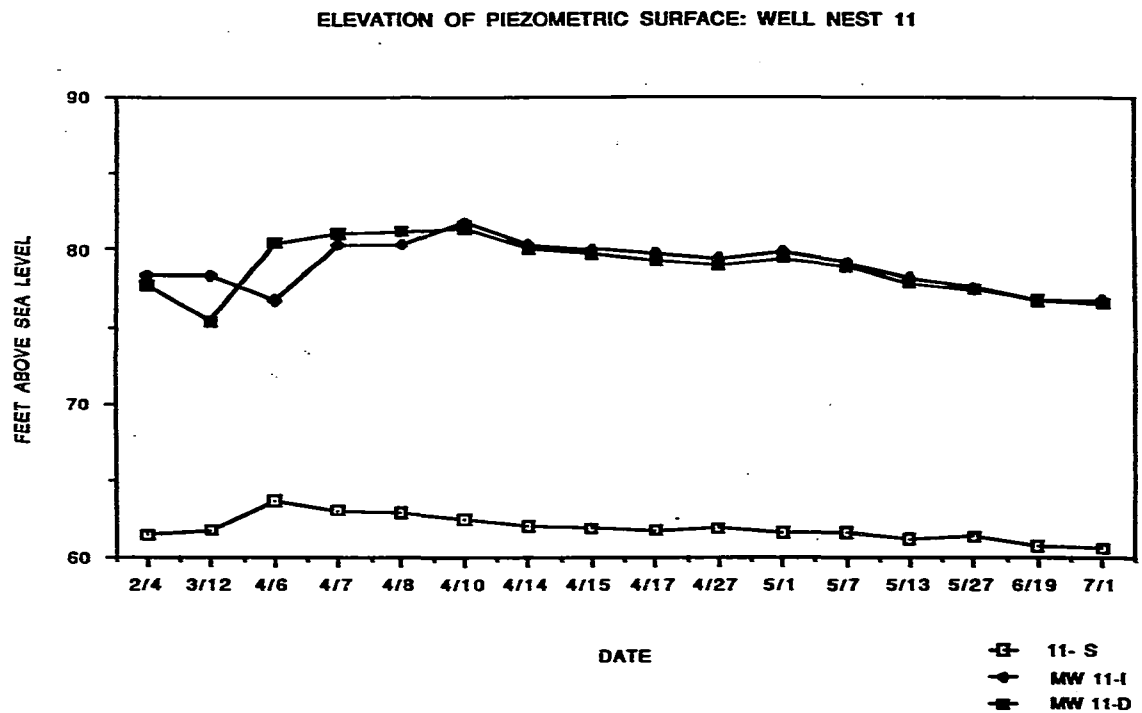

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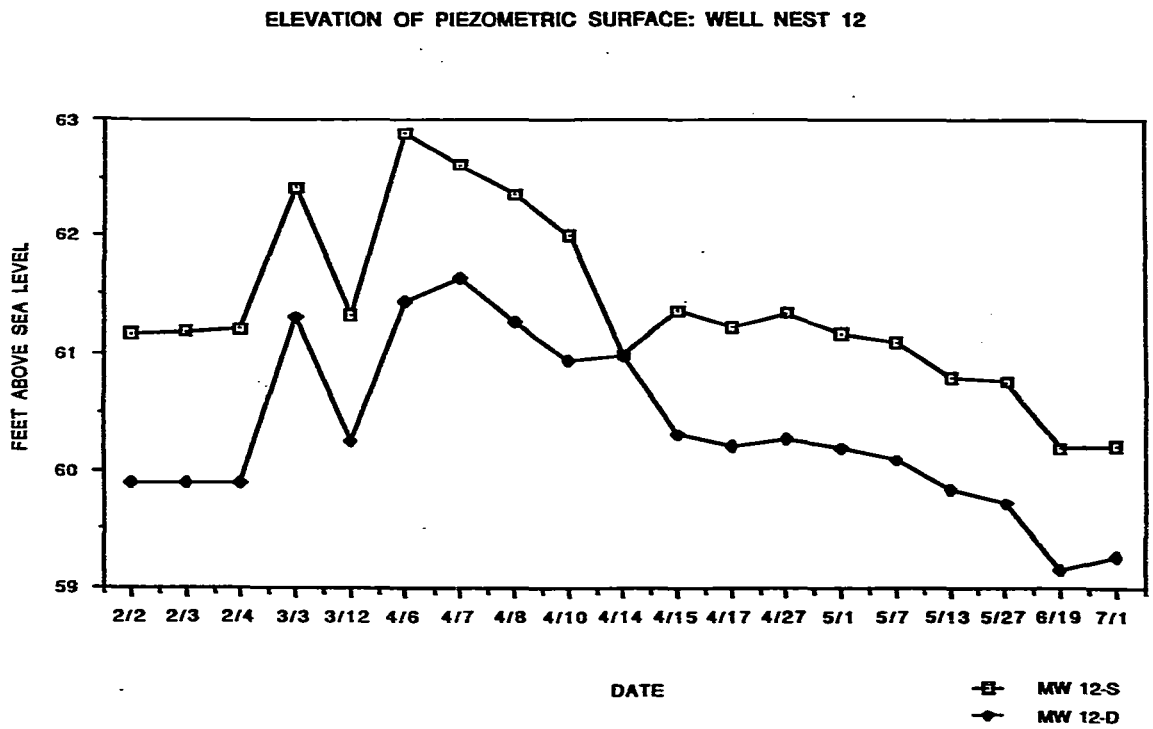

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APPENDIX I

PAPADOPULOS REPORT

HYDRAULIC PROPERTIES AND RATE OF GROUND-WATER FLOW AND DISSOLVED CONTAMINANT TRANSPORT IN THE DEEP AQUIFER TYSON'S SITE UPPER MERION TOWNSHIP, PENNSYLVANIA

PREPARED FOR

CIBA-GEIGY CORPORATION

ARDSLEY, NEW YORK

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JULY, 1987

AR300824

EXECUTIVE SUMMARY

Data from hydrogeologic tests conducted in wells open to the deep bedrock aquifer downgradient of the Tyson's Site were evaluated to determine the transmissivity of this aquifer. The results of these evaluations indicate that within the area of contaminated ground-water flow, the deep aquifer may be characterized by two areas of transmissivity, one having an average transmissivity of 310 ft^2/d and another having an average transmissivity of 31 ft^2/d.

Using these transmissivities and the average hydraulic gradients of the deep aquifer, the rate of ground-water flow within the contaminated area downgradient of the site is calculated to be about the 22,000 ft^3/d. The rate of dissolved contaminants transported by ground water is estimated to be about 18,000 kg/yr.

AR300825

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1.0 INTRODUCTION

1.1 Background

The Tyson's Site, in Montgomery County, Pennsylvania, is a former sandstone quarry which was operated as a disposal site for septic and chemical wastes between 1962 and 1970. The wastes were disposed in a series of unlined lagoons within an approximately four-acre plot. The site lies about 500 feet to the south of the Schuylkill River and is bordered to the east and the west by unnamed tributaries to the river. The high-wall of the former quarry forms the southern boundary of the site, and a Conrail railroad switching yard lies to the north of the site. The area between the Conrail tracks and the river is covered by floodplain sediments and wetlands. The surficial materials at the site and its vicinity are underlain by fractured bedrock which extends beneath the Schuylkill River into Norristown and beyond with an average dip of 12 degrees to the north-northwest.

The Pennsylvania Department of Environmental Resources ordered the site closed in 1973. During closure, the lagoons were emptied of standing water and backfilled. Between January 1983 and August 1985, a series of investigations were conducted at the site by the U.S. Environmental Protection Agency (EPA) and its contractors. These investigations included the implementation of some immediate remedial measures, a Remedial Investigation/Feasibility Study (RI/FS) and other associated studies primarily aimed at developing and refining a remedial action for the On-Site Area (see Figure 1). However, hydrogeologic evaluations conducted during these investigations did not address ground-water flow and/or contamination within the fractured bedrock that underlies the site and its vicinity.

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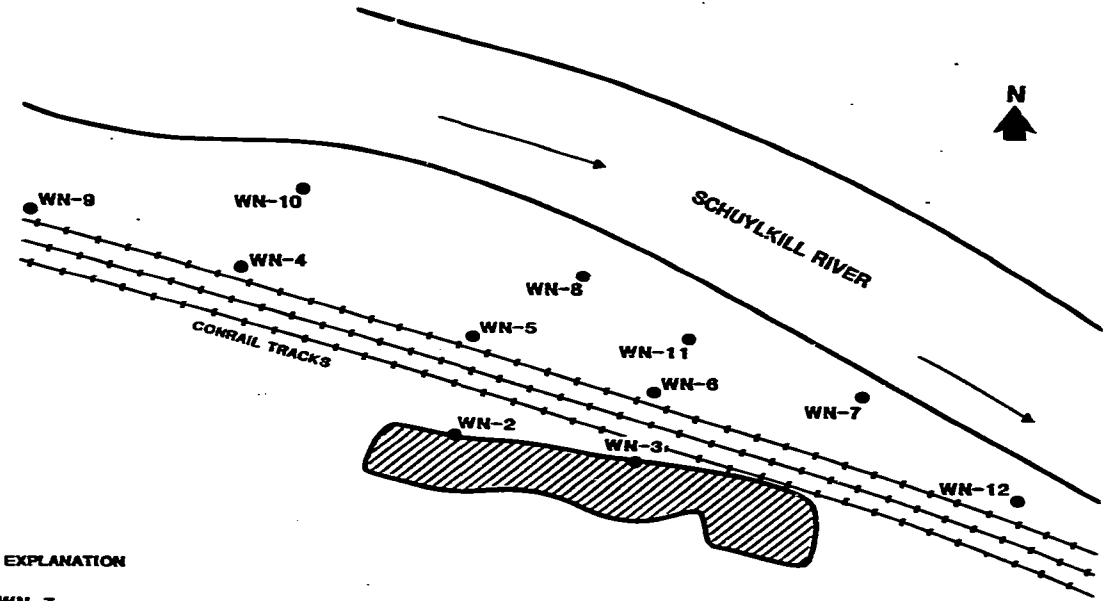

Adapted from ERM, 1987, Figure 4-16

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LOCATION OF SITE AND OF DEEP AQUIFER WELL NESTS

FIGURE 1

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On May 27, 1986, CIBA-GEIGY Corporation, one of the potentially responsible parties (PRPs), entered into an Administrative Consent Order (ACO) with EPA for the conduct of an RI/FS for the Off-Site Area, including the deep aquifer (fractured bedrock aquifer). The conduct of the Off-Site RI/FS was undertaken by Environmental Resources Management, Inc. (ERM), consultants to CIBA-GEIGY Corporation.

The investigation of the deep aquifer included the installation of one background well (MW-1) upgradient of the site and of eleven well nests (WN-2 through WN-12) in the area between the site and the Schuylkill River. The locations of these well nests are shown in Figure 1. Except for well nests WN-2, WN-10 and WN-12, each well nest consists of three wells completed in a shallow (S), intermediate (I) and deep (D) interval within the bedrock. Well nest WN-2 consists of two wells completed in a shallow and an intermediate interval. Well nest WN-12 also consists of two wells completed in shallow and deep intervals. Well nest WN-10 includes a fourth well completed in an extra-deep (XD) interval. The open interval in each well was drilled as a 6-inch hole with a minimum length of 20 feet and the well was completed by cementing 6-inch diameter steel casing from the top of the open interval to land surface. The total depth, open interval and estimated yield of each of these wells are given on Table 3-1 of the Off-Site RI Report (ERM, 1987).

By permission of the EPA , ERM initiated certain tasks of the Off-Site RI prior to the signing of the ACO. Thus, the installation of MW-1 and of well nests WN-2 through WN-8 began in November 1985 and was completed by April 1986. Hydrogeologic tests, consisting of slug tests, step-pumping tests and a constant rate pumping test, were conducted at these well nests during April

and May 1986. Well nests WN-9 through WN-12 were installed later, between July and September 1986. Hydrogeologic tests, consisting of slug tests and constant-drawdown (flowing-well) tests, were conducted at these latter well nests during April 1987.

Data from all the hydrogeologic tests conducted by ERM were analyzed by S. S. Papadopulos & Associates, Inc. (SSP&A) to estimate the transmissivity of the deep aquifer at each well nest location. The resulting distribution of transmissivity was then used to evaluate the rates of ground-water flow and of contaminant transport through the deep aquifer downgradient of the Tyson's Site.

1.2 Study Objectives

The objectives of this study are:

1. To estimate the distribution of the transmissivity in the deep aquifer from an evaluation of all available hydrogeologic test data; and

2. To calculate the rates of ground-water flow and of dissolved contaminant transport through the deep aquifer downgradient of the site.

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2.0 EVALUATION OF HYDROGEOLOGIC TEST DATA

2.1 Methods of Testing

The hydrogeologic tests conducted to evaluate the hydraulic properties of the deep aquifer consisted of slug tests, step-pumping tests, constant-drawdown tests, and a constant-rate test performed by pumping well 5S at an average rate of 9 gpm. A brief discussion of these tests is presented below.

2.1.1 Slug Tests

During April 1986, slug tests were performed on wells 2S, 2I, 3S, 3I, 3D, 6S, and 6I. These tests were conducted using a submersible pump to remove rapidly a volume of water from the well and thus causing a sudden water-level decline in the well. The recovery of the water level to the pre-test level was recorded using a data logger. Additional slug tests were performed during April 1987 on wells 9S, 9I, 9D, 10S, 10I, 10D, 11S, 12S, and 12D. Also at that time, a repeat test was performed on well 2S, because this well had an unusual response during its April 1986 testing. This latter series of tests was conducted by instantaneously inserting a weighted, sealed PVC pipe into the well to cause a sudden water-level change and recording the water-level recovery to the pre-test level. In wells 2S, 9S, 10S, and 12S the return of the water level to pre-test conditions was also recorded when the sealed pipe was removed from the well.

The water-level data obtained from the conduct of all slug tests are presented in Appendix J of the Off-Site RI Report (ERM, 1987).

2.1.2 Step-Pumping Tests

Step-pumping tests were conducted on wells 2S, 2I, 3S, 3I, 4S, 5S, 5I, 6S, 6I, 7S, 7I, 8S and 8I. A submersible pump, set near the bottom of the well, was used for these tests. In most wells, the test was started at an initial discharge rate of one gpm. After the drawdown had somewhat stabilized, the discharge rate was increased by increments of one to four gpm. This procedure was repeated for several steps or until the well could no longer maintain the discharge rate for a given step. Throughout the test, a data logger was used to record the drawdown in the well. Data from these tests are presented in Appendix K of the Off-Site RI Report (ERM, 1987).

2.1.3 Constant-Drawdown Tests

The potentiometric surface of wells 11I and 11D is above land surface. Therefore, constant-drawdown tests were conducted on these wells. The wells were fitted with valves and standpipes above the top of the well casing and the water level was allowed to rise in the standpipe for several hours, until it stabilized. The height of the water level above the valve was recorded and the valve was then opened fully to allow water to flow freely from the well. The discharge rate was measured frequently throughout the test using a calibrated container and a stopwatch. These discharge measurements are presented in Appendix J of the Off-Site RI Report (ERM, 1987).

2.1.4 Constant-Rate Pumping Test

A constant-rate pumping test was performed at the site in May 1986. The test was conducted by pumping well 5S with a submersible pump at a relatively constant rate for a period of about eight days. During the test, the pumping

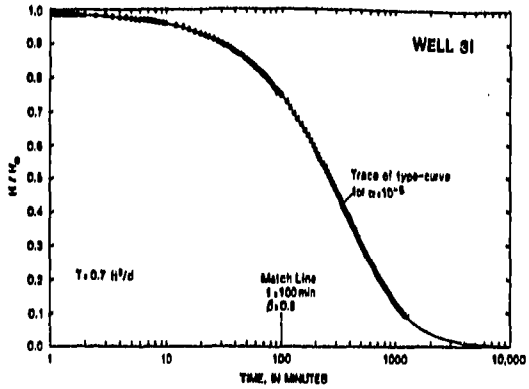
rate varied between 8.5 and 10.5 gpm and averaged 9 gpm. Throughout the pumping period and for approximately two days after the pump was shut off, water-level data were collected from the pumped well and all other offsite wells existing at that time. These data are tabulated in Appendix L of the Off-Site RI Report (ERM, 1987).

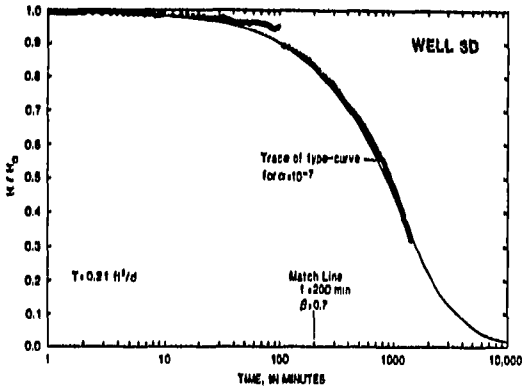
2.2 Methods of Analysis

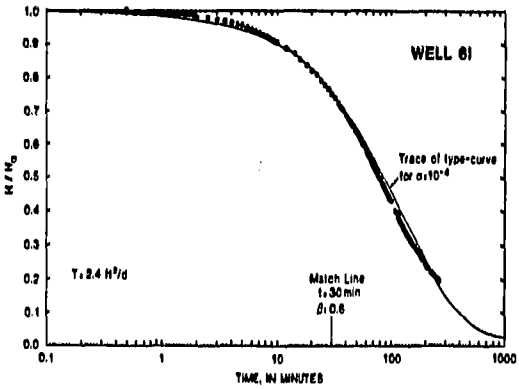
Hydrogeologic test data by more than one testing method were obtained from several of the wells open to the deep aquifer. For most of these wells, analyses of data from different testing methods resulted in similar estimates of transmissivity. However, for such wells the data analyses presented below are those for the testing and analysis method deemed to provide the most reliable estimate of transmissivity for the interval open to each well.

2.2.1 Slug-Test Data

Data obtained from the conduct of slug tests were analyzed using the type-curve method of Cooper and others (1967). Figures 2, 3, 4 and 5 show plots of the ratio of the residual water-level change H to the initial water-level change H_0 against the logarithm of time t since the beginning of the tests for wells 3I, 3D, 6I, 9S, 9I, 9D, 10S, 10I, 10D, 11S, 12S and 12D. Also shown on these figures are the trace of the type curve to which the test data were matched, the coordinates of the match line and the transmissivity T calculated from these match line coordinates.







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ANALYSIS OF SLUG-TEST DATA
WELLS 3I, 3D AND 6I

FIGURE

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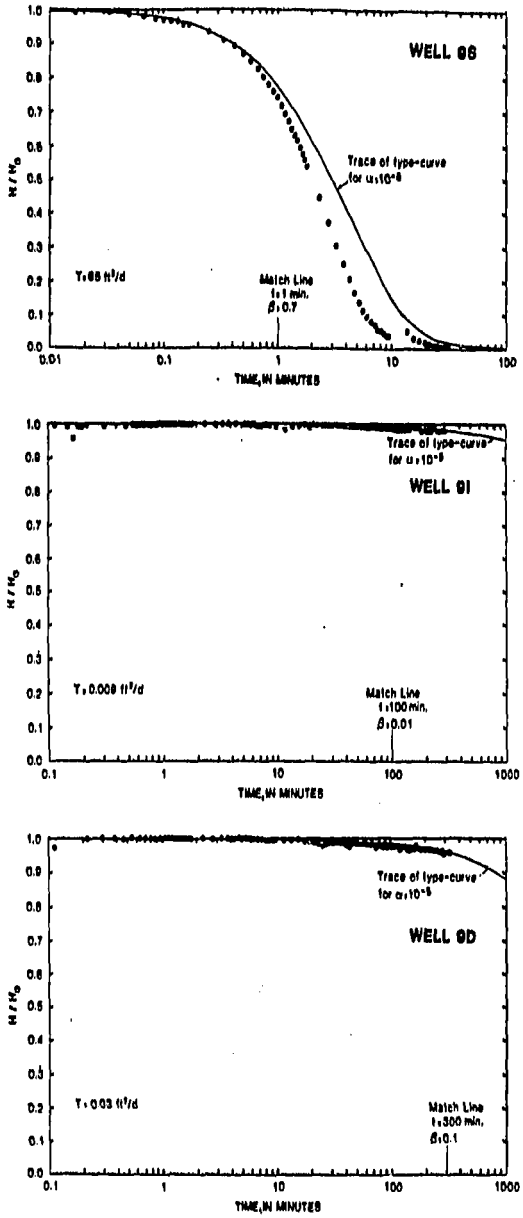

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ANALYSIS OF SLUG-TEST DATA
WELLS 9S, 9I AND 9D

FIGURE 3

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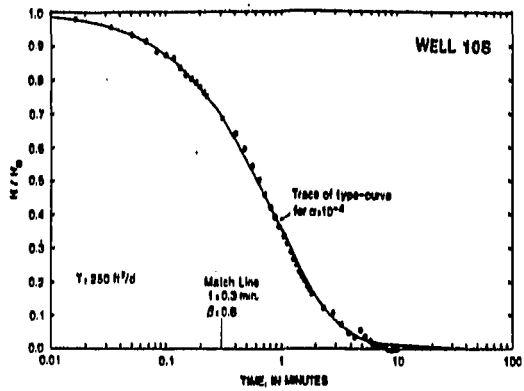

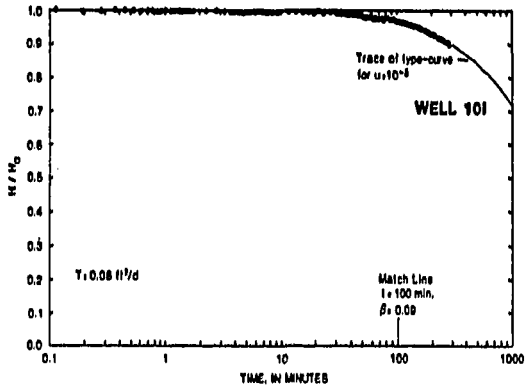

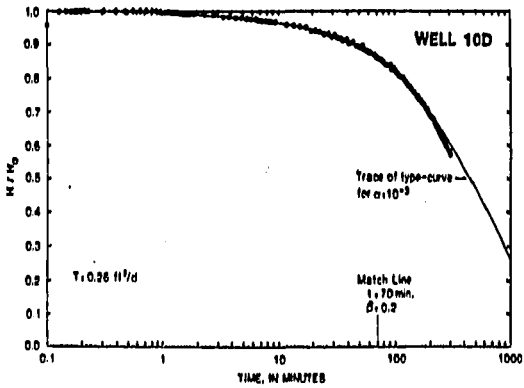

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ANALYSIS OF SLUG-TEST DATA
WELLS 10S, 10I AND 10D

FIGURE

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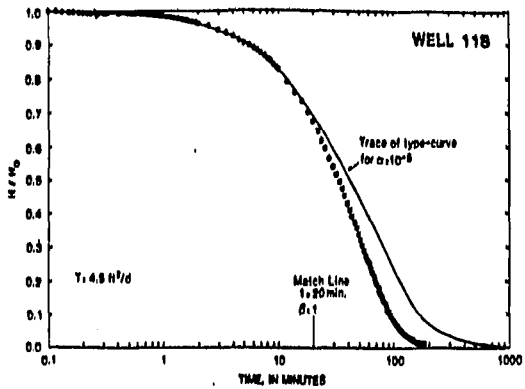

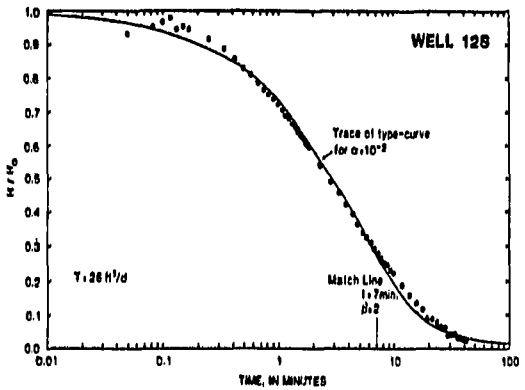

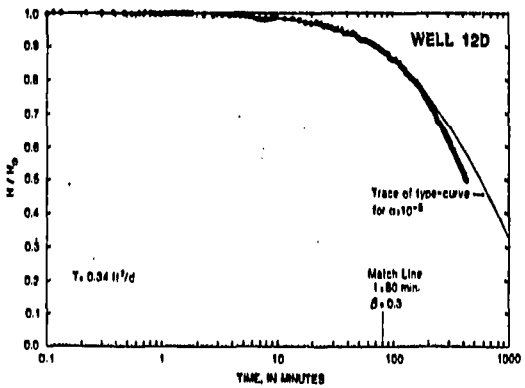

S. S. PAPADOPULOS & ASSOCIATES, INC. CONSULTING GROUND-WATER HYDROLOGISTS	ANALYSIS OF SLUG-TEST DATA WELLS 11S, 12S AND 12D	FIGURE 567

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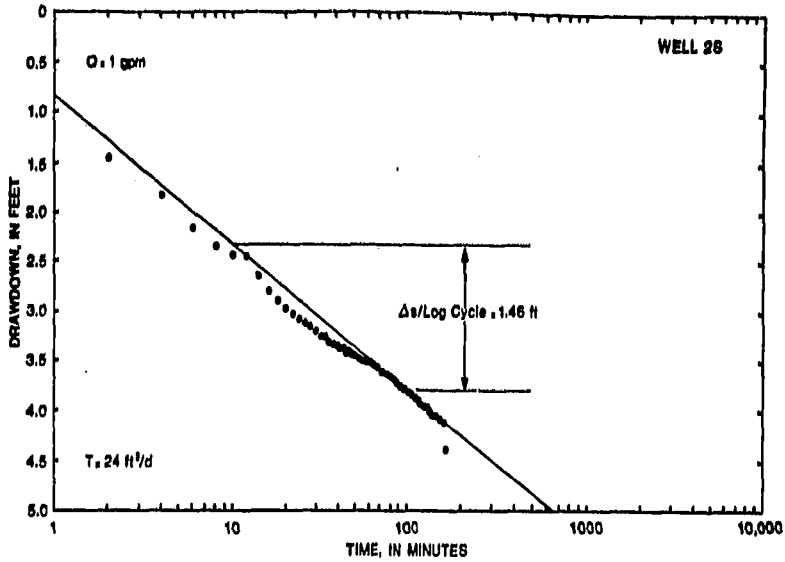
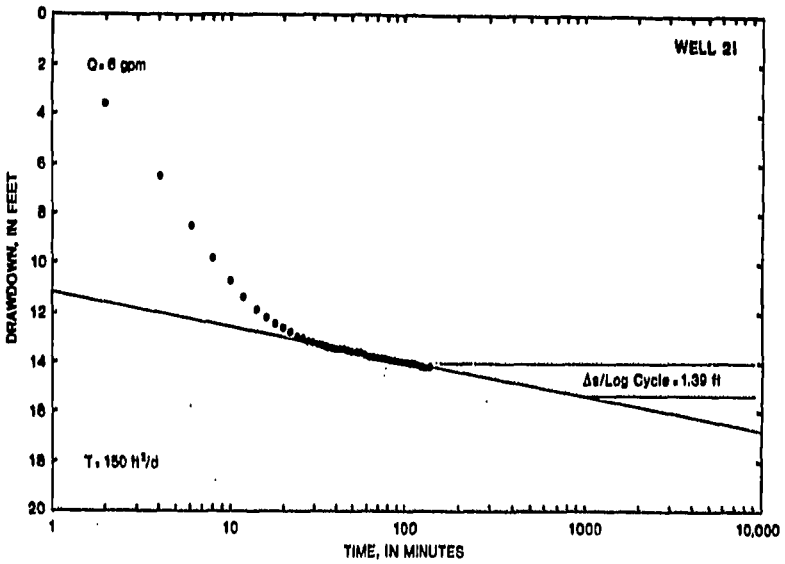
2.2.2 Step-Pumping Test Data

Two approaches were used to analyze the water-level response data obtained from the step-pumping tests. In the first approach, the straight-line method of Cooper and Jacob (1946) was applied to data from the first pumping step. Figure 6 shows plots of the drawdown against time from the first step of the tests conducted on wells 2S and 2I. Also shown on these plots are the slopes of the straight lines drawn through the data and the transmissivities calculated from these slopes.

In the second approach, the test data were analyzed using the generalized form of Cooper and Jacob's (1946) straight-line method. In applying this method corrections were made to the step discharge rate to account for wellbore storage effects. That is, for each drawdown measurement a corresponding formation discharge rate was calculated by subtracting from the measured step discharge the portion of discharge derived from water stored in the well.

Figures 7, 8 and 9 show plots of the specific drawdown from wells 3S, 4S, 6S, 7S, 7I, 8S and 8I against the logarithm of an equivalent time. The specific drawdown is the ratio of the drawdown to the corresponding formation discharge, and the equivalent time is the weighted logarithmic mean of the actual time since the beginning of the test (Cooper and Jacob, 1946). This equivalent time corresponds to the time at which a measured drawdown would have occurred if the entire test was conducted at a constant rate equal to the formation discharge corresponding to that particular drawdown measurement.





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ANALYSIS OF FIRST STEP DATA
WELLS 2S AND 2I

FIGURE 6

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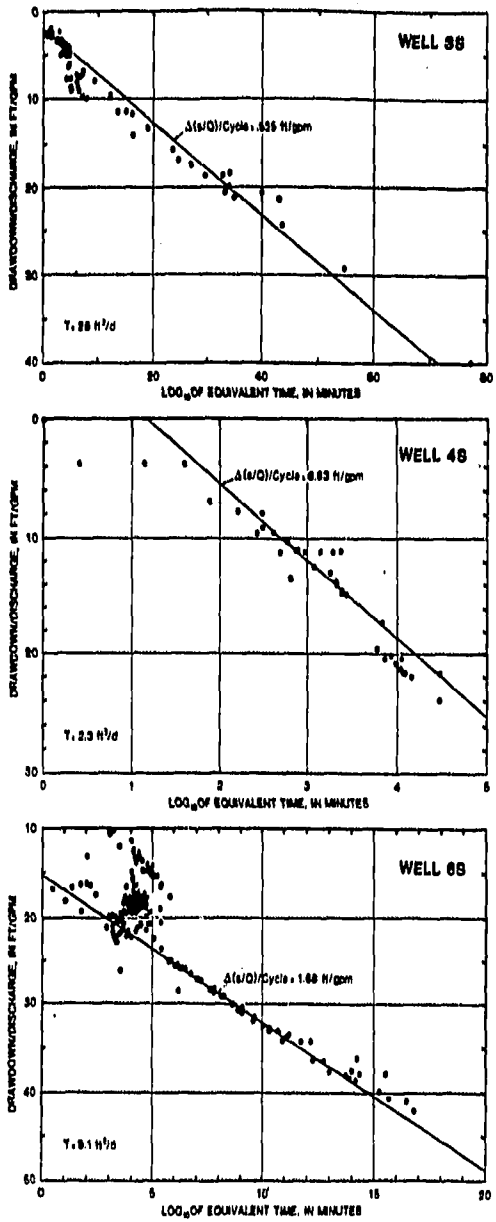

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ANALYSIS OF STEP-PUMPING TEST DATA
WELLS 3S, 4S AND 6S

FIGURE 7

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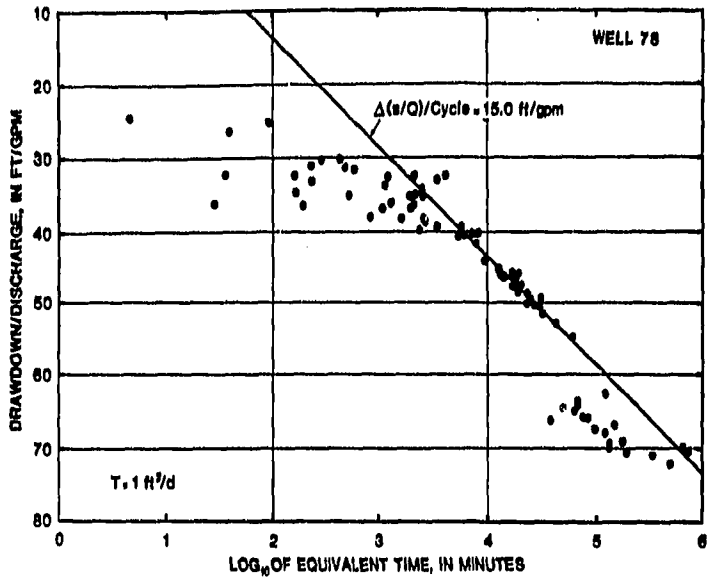

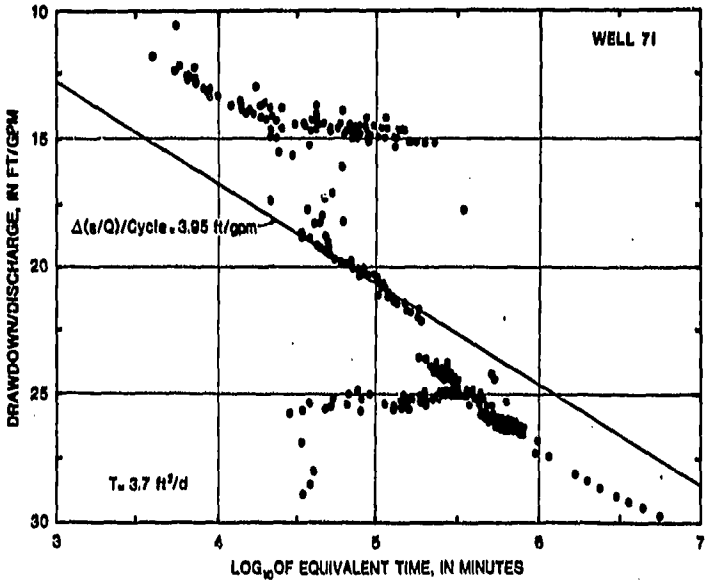

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ANALYSIS OF STEP-PUMPING TEST DATA
WELLS 7S AND 7I

FIGURE 8

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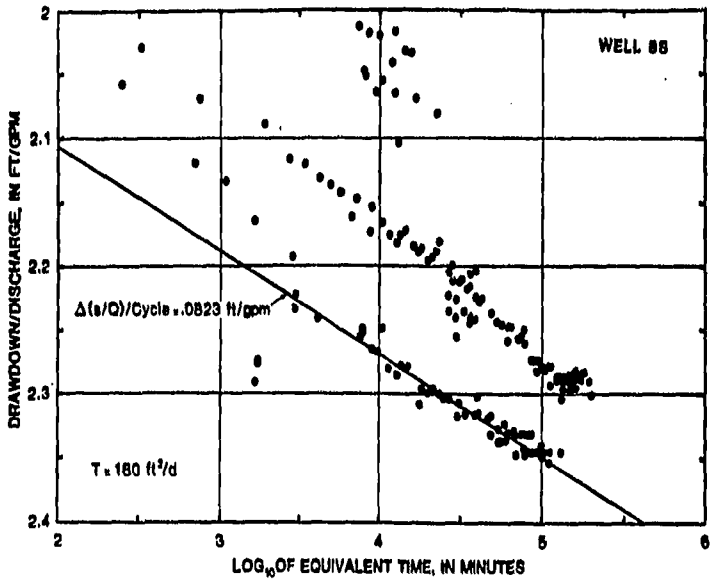

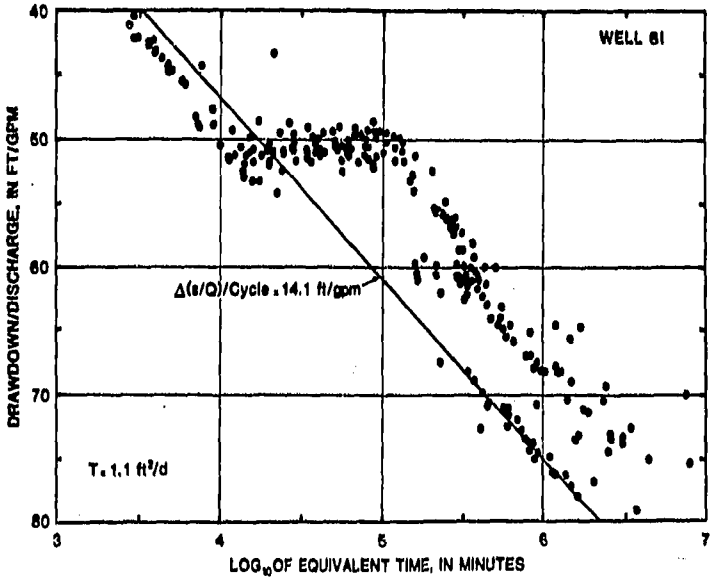

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ANALYSIS OF STEP-PUMPING TEST DATA
WELLS 8S AND 8I

FIGURE 9

AR300843

The plots of Figures 7, 8 and 9 combine the data from all the steps of the tests, including data from the recovery periods. The scatter displayed by the data is due to the discretized approach used for wellbore storage corrections and the shifts in the data due to differences in well losses for each of the test steps. However, the data for each plot maintain the general slope indicated by the straight line drawn through the data. The value of the slope for this line and the transmissivity calculated from this slope is shown on each data plot (Figure 7, 8 and 9).

2.2.3 Constant-Drawdown Test Data

The discharge rate data from the constant-drawdown test on well 11I were analyzed using the type-curve method of Jacob and Lohman (1952). Figure 10 shows a logarithmic plot of the discharge rate against time since the beginning of the test. Also shown on this figure are the trace of the type curve for the constant-drawdown discharge function (Jacob and Lohman, 1952), the coordinate of the match point and the transmissivity calculated from the match point coordinates.

The discharge rate data from well 11D indicate that the well was apparently developing during the constant-drawdown test and, instead of decreasing, the discharge value increased with time and approached a relatively constant rate near the end of the test. Therefore, the Jacob and Lohman (1952) method could not be applied to the test data. To estimate the transmissivity of the interval open to this well, the product of the square of the effective radius of the well and the storage coefficient of the open interval were assumed to be the same as that for well 11I. The value of this product was calculated from the match point coordinates of the data plot for well 11I.

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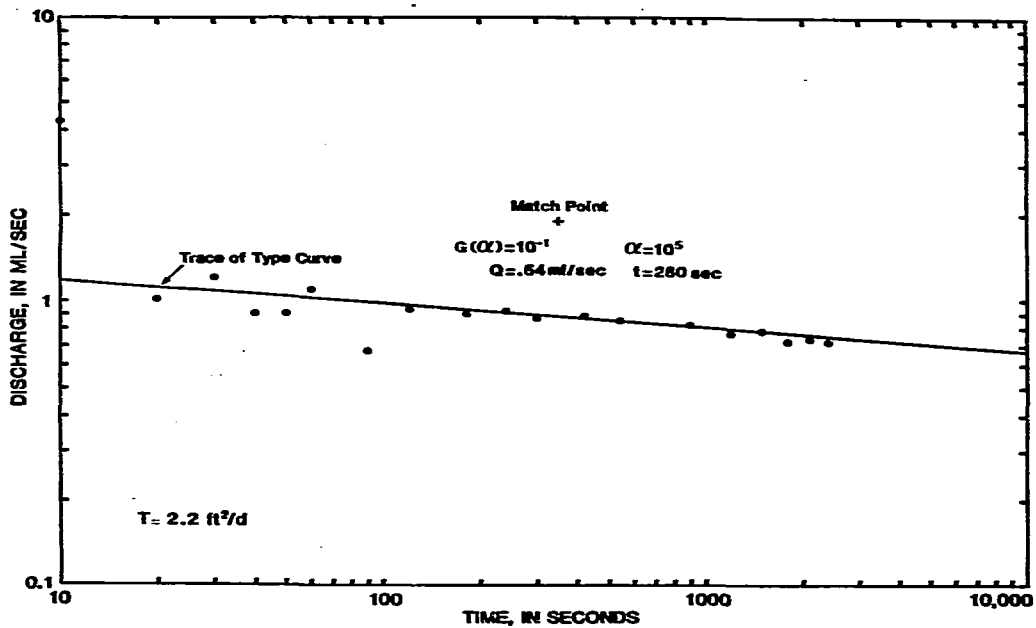

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ANALYSIS OF CONSTANT-DRAWDOWN TEST DATA – WELL 11I

FIGURE 10

AR300015

(Figure 10). This value and the specific capacity of well 11D at the end of the constant-drawdown test were then substituted into the Theis (1935) equation and the equation was solved for the transmissivity by trial and error. This approach resulted in a transmissivity estimate of 0.06 ft^2/d for the open interval of well 11D.

2.2.4 Constant-Rate Pumping Test Data

Review of water-level data collected during this test indicates that water levels were declining prior to and after the test (Figure 11). Consequently, during the test, part of the measured decline in water levels is due to pumping and part is due to other factors. The water-level declines measured in observation wells during the test are small (less than about 4 feet) and a large part of this decline is not related to pumping. The portion of the measured decline that is related to pumping cannot be reliably determined, at least for the observation wells. As a result, analysis of water-level declines measured in the observation wells will not yield reliable estimates of transmissivity for the bedrock aquifer.

Water-level declines measured in the pumping wells are much larger than those measured in the observation well and the effects of pumping are more easily distinguished from water-level changes due to other factors (Figure 11). Therefore, data from the pumped well can be analyzed using methods based on the Theis (1935) equation. Hence, to obtain an estimate of the transmissivity in the vicinity of the pumped well, recovery data from well 5S was analyzed using the Theis (1935) recovery method (Figure 12).

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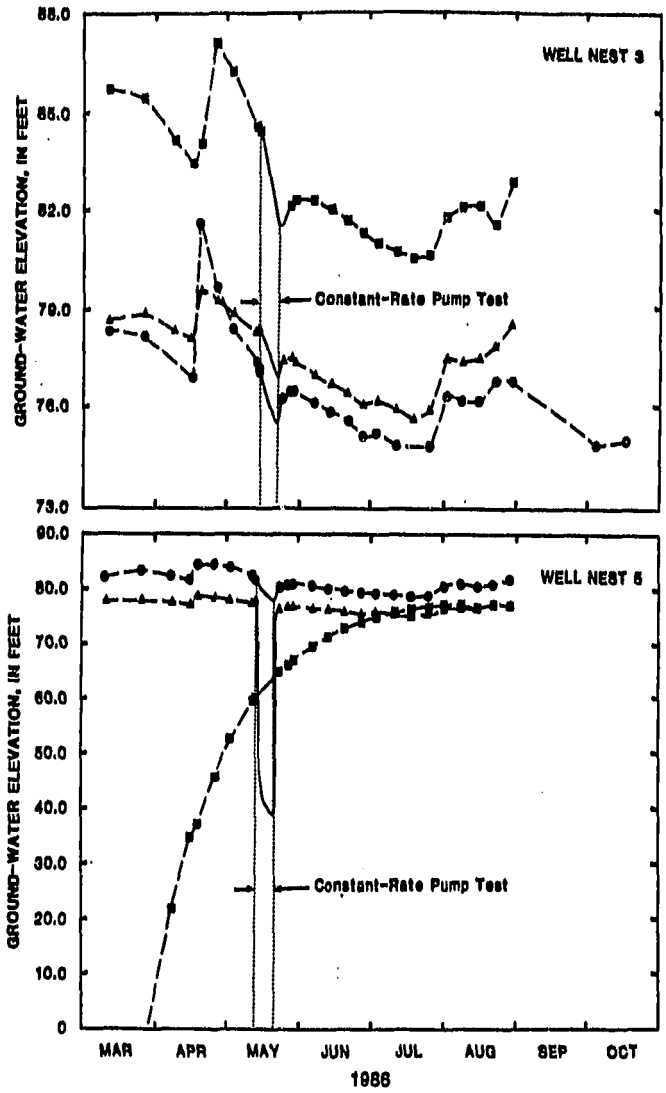

EXPLANATION

Weekly Water-Level Measurements In:

- ▲ Shallow Wells
- ● Intermediate Wells
- ■ Deep Wells

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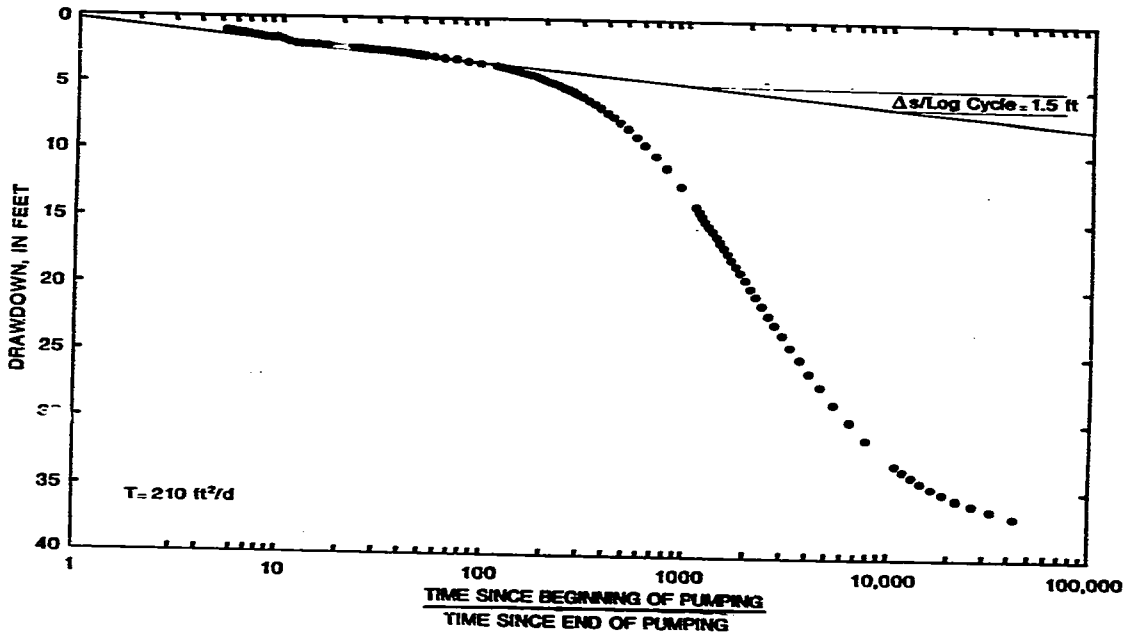
HYDROGRAPHS OF WELLS IN WELL NESTS 3 AND 5

FIGURE

AR300847



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ANALYSIS OF RECOVERY DATA FROM CONSTANT-RATE PUMPING TEST
PUMPED WELL 5S

FIGURE 12

AR300848

2.2.5 Long-Term Water-Level Recovery Data

Review of weekly water-level data collected from all wells (ERM, 1987 Appendix H) indicated that wells 4I, 5D and 7D recovered very slowly from the effects of dewatering caused during their installation. The recovery of the water level in well 5D is shown in Figure 11. Water levels in wells 4I and 7D recovered in a manner similar to that in well 5D. Water-level data from this recovery period, which lasted from about 120 days in well 4I to about 170 days in well 7D, were treated as long-term slug test responses (Figure 13) to obtain a rough estimate of the transmissivity of the interval open to these wells.

2.3 Summary of the Test Results

The analyses of the hydrogeologic test data discussed in the previous section provide information on the transmissivity of the open interval for each of the tested wells. The results of these analyses are summarized on Table 1. Values of the hydraulic conductivity, determined by dividing the transmissivity by the thickness of the open interval in each well, are also presented on Table 1.

Attempts to analyze data collected from the step test of well 5I were unsuccessful due to scatter in the data. No other method of testing had been performed on well 5I. In order to obtain an estimate, the hydraulic conductivity for well 5I was assumed to be similar to that of the nearby well 6I and this value is included on Table 1.

Test data were not available for wells 4D, 6D, 8D and 10XD and estimates of transmissivity or of hydraulic conductivity are not presented for

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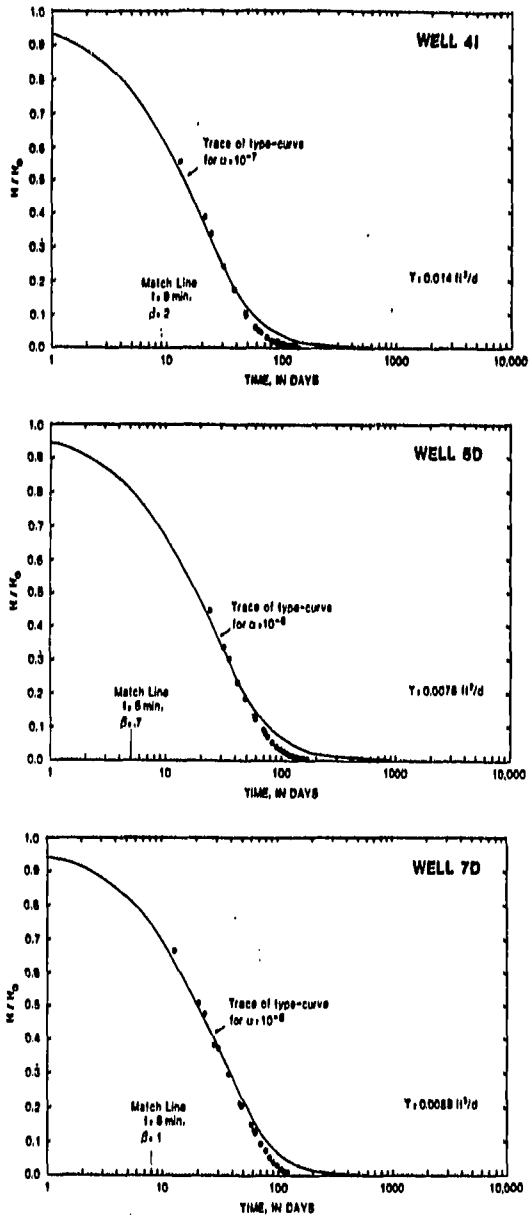

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ANALYSIS OF LONG-TERM RECOVERY DATA
WELLS 4I, 5D AND 7D

FIGURE 13

AR300850

TABLE 1

VALUES OF TRANSMISSIVITY AND HYDRAULIC CONDUCTIVITY AT WELL NEST LOCATIONS

Well	Open Interval Transmissivity ft^2/d	Open Interval ft	Hydraulic Conductivity ft/d	Zone Thickness ft	Zone Transmissivity ft^2/d	Total Transmissivity ft^2/d
2S	24	21.5	1.1	45	50	380
2I	150	25	6	55	330	
3S	28	21	1.3	38	49	51
3I	0.7	24	0.029	50	1.5	
3D	0.21	52	0.004	65	0.26	
4S	2.3	30	0.077	46	3.5	3.5
4I	0.014	26	0.00054	49	0.026	
5S	210	30	7	58	390	400
5I	—	32	0.12	64	7.7	
5D	0.0078	24	0.00033	41	0.014	
6S	9.1	20	0.46	38	17	22
6I	2.4	20	0.12	42	5	
7S	1	42	0.024	87	2.1	15
7I	3.7	20	0.19	68	13	
7D	0.0088	25	0.00035	38	0.013	
8S	180	30	6	68	410	410
8I	1.1	20	0.055	56	3.1	
9S	65	40	1.6	71	110	110
9I	0.009	40	0.00023	78	0.018	
9D	0.03	35	0.00078	50	0.043	
10S	250	22	11	51	560	560
10I	0.08	40	0.002	84	0.17	
10D	0.26	39	0.0067	85	0.57	
11S	4.5	40	0.11	80	8.8	13
11I	2.2	40	0.055	68	3.8	
11D	0.06	40	0.0015	55	0.083	
12S	26	40	0.65	80	52	54
12D	0.34	40	0.0085	63	1.5	

AR300851

wells 4D, 6D, 8D and 10XD. However, given the low transmissivities in the corresponding shallower wells 4I, 6I, 8I and 10D, the transmissivities for these deeper wells are assumed to be negligible.

The values of hydraulic conductivity were used to calculate the total transmissivity of the deep aquifer at the location of each well nest. The following procedure was used. The hydraulic conductivity determined from the transmissivity of the open interval of each well was assumed to apply to a zone representative of that well. For shallow wells, the representative zone extended from the top of the saturated deep aquifer to the midpoint between the open intervals of the shallow and the intermediate wells at the well nest location. The representative zone for intermediate wells was taken as the distance between the bottom of the shallow zone and the midpoint between the open intervals of the intermediate and deep wells. The representative deep well zone was the distance between the bottom of the intermediate zone and the bottom of the open interval in the deep well. A representative zone transmissivity was calculated by multiplying the thickness of the representative zone by the hydraulic conductivity (see Table 1). The reported total transmissivity of the deep aquifer at each well nest location is the sum of the representative zone transmissivities.

2.4 Average Transmissivities

Based on the results of the evaluation of the hydrogeologic test data, the total transmissivity of the deep aquifer is estimated to range from 3.5 feet squared per day (ft^2/d) at well nest WN-4 to 560 ft^2/d at well nest WN-10. However, of interest to the evaluation of the potential impacts of the site is the average transmissivity of the deep aquifer downgradient of the

site, within the area where contaminated ground water flows through the aquifer.

Ground-water quality data from the well nests (Table 4-7, Off-Site RI Report, ERM, 1987) indicate that contaminated ground-water flows through an area of the deep aquifer laterally extending from the east of well nest WN-9 to the east of well nest WN-12. Contaminants were detected at low concentrations at well nest WN-12 and were not detected at well nest WN-9. However, to be on the conservative side, that is, to avoid underestimating the rates of ground-water flow and contaminant transport, a 2,500-foot wide area that encompasses all well nests, including well nest WN-9, is considered for the evaluations presented in the next section. The lateral extent of this area is shown in Figure 14.

Also shown in Figure 14 is the spatial distribution of the transmissivity in the deep aquifer. This transmissivity distribution indicates that, in general, transmissivities at well nests on the west side of the area of concern are higher than those at well nests on the east side. The area of relatively high transmissivity encompasses well nests WN-2, WN-4, WN-5, WN-8, WN-9 and WN-10. The average transmissivity within this area is 310 ft^2/d. The area of relatively low transmissivity encompasses well nests WN-3, WN-6, WN-7, WN-11 and WN-12, and has an average transmissivity of 31 ft^2/d. The boundary between these two transmissivity areas is not clearly defined. Conservatively, it was assumed to be closer to the well nests with low transmissivity, resulting in the subdivision of the area of concern to a 1,500-foot wide high transmissivity area and a 1,000-foot wide low transmissivity area (see Figure 14).

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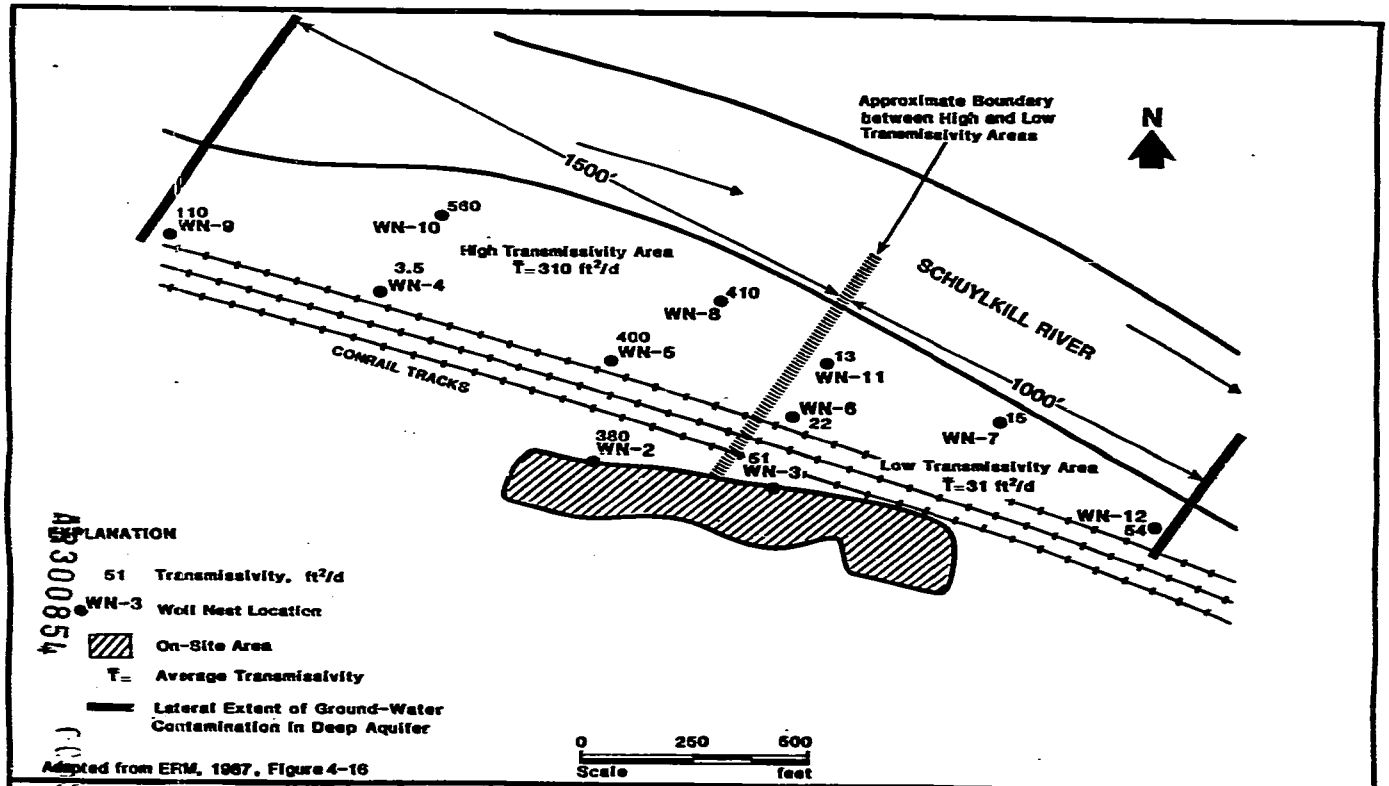

Adapted from ERM, 1987, Figure 4-16

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TRANSMISSIVITY DISTRIBUTION OF DEEP AQUIFER WITHIN CONTAMINATED AREA

FIGURE 14

A3300854

3.0 GROUND-WATER FLOW AND CONTAMINANT TRANSPORT

3.1 Rates of Ground-Water Flow

The rate of ground-water flow through the deep aquifer downgradient from the site was calculated by applying the following form of Darcy's equation to each of the two transmissivity areas:

$$Q = TIW$$

where Q = Rate of ground water flow, ft^3/d;

T = Average transmissivity for area, ft^2/d;

I = Average hydraulic gradient within the area, dimensionless; and

W = Width of area, ft.

Water-level data from the well nests indicate that the horizontal hydraulic gradients within the deep aquifer change with depth. The steepest gradients occur within the shallow interval of the deep aquifer. Since the transmissivities are also higher within the shallow interval (see Table 1), the weighted average water levels for the deep aquifer, and hence, the average horizontal gradients, would not be significantly different than those for the shallow interval of the aquifer. Therefore, the gradients within the shallow interval of the aquifer were selected as representative of the average hydraulic gradients for the deep aquifer. Based on water-level measurements made in shallow wells on April 17, 1987, the average hydraulic gradients for the high and low transmissivity areas of the aquifer were estimated to be 0.044 and 0.038, respectively.

AR300855

Using these average gradients and the widths and average transmissivities discussed in the previous section, the rate of ground-water flow through the deep aquifer was calculated to be 20,500 ft^3/d in the high transmissivity area and 1,200 ft^3/d in the low transmissivity area. Thus, the total rate of ground-water flow through the deep aquifer downgradient of the site is 21,700 ft^3/d.

3.2 Rates of Dissolved Contaminant Transport

Calculations of the rate at which dissolved contaminants are transported by ground water flowing through the deep aquifer downgradient of the site were made by multiplying the rates of ground-water flow determined above by the weighted average concentrations of the dissolved contaminants.

The weighted average concentration of a contaminant within each transmissivity area was calculated by multiplying the concentration of that contaminant, observed in a well within the area, by a weighting factor for that well, and summing these products for all the wells within the area. The weighting factor for a well was calculated as the ratio of the transmissivity representative of that well to the sum of the transmissivities of all the wells within the area. For example, within the high transmissivity area, the transmissivity for the shallow zone at well nest WN-2 is 50 ft^2/d (see Table 1). The sum of the transmissivities at all the well nests within the high transmissivity area is 1,863.5 ft^2/d. Therefore, the weighting factor for the concentration of a contaminant observed in well 2S is 50/1,863.5 or 0.0268.

Using the procedure described above and ground-water quality data from Table 4-7 of the Off-Site RI Report (ERM, 1987), the weighted average

concentrations of 1,2,3-trichloropropane, xylene, toluene and ethylbenzene, for the high and the low transmissivity areas, were calculated as follows:

Contaminant	Weighted Average Concentration, mg/L	
	High Transmissivity Area	Low Transmissivity Area
1,2,3-Trichloropropane	51.9	317.3
Xylene	8.7	29.0
Toluene	0.1	16.9
Ethylbenzene	1.3	4.2

The rates of dissolved contaminant transport were then calculated by multiplying these weighted average concentrations with the rates of groundwater flow presented in the previous section. The results of these transport rate calculations are as follows:

Contaminant	Transport Rate, kg/yr		
	High Transmissivity Area	Low Transmissivity Area	Total
1,2,3-Trichloropropane	11,000	3,900	14,900
Xylene	1,840	360	2,200
Toluene	20	210	230
Ethylbenzene	280	50	330
Total:	13,140	4,520	17,660

4.0 SUMMARY AND CONCLUSIONS

The evaluations of hydrogeologic test data and calculations based on the results of these evaluations lead to the following conclusions concerning hydrogeologic conditions in the deep aquifer downgradient of the Tyson's Site:

- The aquifer may be characterized by two areas of transmissivity, one having a transmissivity of 310 ft^2/d and another having a transmissivity of 31 ft^2/d.
- The rate of ground-water flow within the contaminated area of the aquifer downgradient of the site is about 22,000 ft^3/d.
- The rate of dissolved contaminants transported by ground water ranges from about 15,000 kg/yr for 1,2,3-trichloropropane to about 200 kg/yr for toluene, and totals about 18,000 kg/yr.

AR300858

5.0 REFERENCES

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Jacob, C. E. and S. W. Lohman, 1952, Nonsteady flow to a well of constant drawdown in an extensive aquifer: Am. Geophys. Union Trans., vol. 33, pp. 559-569.

Theis, C. V., 1935, The relation between the lowering of the piezometric surface and duration of discharge of a well using groundwater storage. Trans. Amer. Geophys. Union, vol. 2, pp. 519-524.

AR300859

APPENDIX J

SLUG TEST DATA AND CONSTANT DRAWDOWN TEST DATA

SLUG TEST DATA: MW 2 - S (slug inserted)

Step# 0 04/03 09:27

Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)
0.0000	34.42	0.2500	35.26	1.8333	35.31
0.0033	34.42	0.2666	35.27	1.9167	35.32
0.0066	34.39	0.2833	35.27	2.0000	35.32
0.0099	34.39	0.3000	35.27	2.5000	35.32
0.0133	34.36	0.3166	35.27	3.0000	35.32
0.0166	34.41	0.3333	35.27	3.5000	35.32
0.0200	34.43	0.4167	35.28	4.0000	35.32
0.0233	34.36	0.5000	35.29	4.5000	35.32
0.0266	34.50	0.5833	35.29	5.0000	35.33
0.0300	34.56	0.6667	35.30	5.5000	35.33
0.0333	34.61	0.7500	35.30	6.0000	35.33
0.0500	34.88	0.8333	35.30	6.5000	35.33
0.0666	35.01	0.9167	35.30	7.0000	35.33
0.0833	35.16	1.0000	35.30	7.5000	35.34
0.1000	35.15	1.0833	35.31	8.0000	35.34
0.1166	35.18	1.1667	35.31	8.5000	35.34
0.1333	35.20	1.2500	35.31	9.0000	35.34
0.1500	35.22	1.3333	35.31	9.5000	35.34
0.1666	35.24	1.4166	35.31	10.0000	35.34
0.1833	35.24	1.5000	35.31	12.0000	35.34
0.2000	35.25	1.5833	35.31	14.0000	35.34
0.2166	35.25	1.6667	35.31	16.0000	35.35
0.2333	35.26	1.7500	35.31		

SLUG TEST DATA: MW 2 - S (slug removed)

Step# 1 04/03 09:44

Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)
0.0000	35.34	0.2500	40.81	1.8333	35.40
0.0033	35.32	0.2666	40.82	1.9167	35.40
0.0066	35.32	0.2833	40.82	2.0000	35.40
0.0099	35.32	0.3000	40.82	2.5000	35.40
0.0133	35.33	0.3166	40.82	3.0000	35.39
0.0166	35.32	0.3333	40.82	3.5000	35.39
0.0200	35.33	0.4167	40.81	4.0000	35.39
0.0233	35.34	0.5000	40.84	4.5000	35.39
0.0266	36.29	0.5833	35.46	5.0000	35.39
0.0300	35.88	0.6667	35.40	5.5000	35.39
0.0333	35.96	0.7500	35.41	6.0000	35.40
0.0500	35.99	0.8333	35.41	6.5000	35.40
0.0666	37.01	0.9167	35.40	7.0000	35.40
0.0833	38.62	1.0000	35.40	7.5000	35.40
0.1000	40.82	1.0833	35.40	8.0000	35.40
0.1166	40.82	1.1667	35.40	8.5000	35.40
0.1333	40.82	1.2500	35.40	9.0000	35.40
0.1500	40.82	1.3333	35.40	9.5000	35.40
0.1666	40.81	1.4166	35.40	10.0000	35.40
0.1833	40.82	1.5000	35.40		
0.2000	40.82	1.5833	35.40		
0.2166	40.82	1.6667	35.40		
0.2333	40.81	1.7500	35.40		

SLUG TEST DATA: MW 9 - S (slug inserted)

Step# 0 04/02 09:18

Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)
0.0000	18.24	0.3000	15.26	4.0000	17.46
0.0033	18.20	0.3166	15.28	4.5000	17.60
0.0066	18.19	0.3333	15.29	5.0000	17.72
0.0099	18.18	0.4167	15.36	5.5000	17.80
0.0133	18.18	0.5000	15.43	6.0000	17.88
0.0166	18.15	0.5833	15.49	6.5000	17.93
0.0200	17.78	0.6667	15.55	7.0000	17.98
0.0233	17.66	0.7500	15.62	7.5000	18.01
0.0266	17.99	0.8333	15.69	8.0000	18.05
0.0300	17.59	0.9167	15.77	8.5000	18.06
0.0333	17.58	1.0000	15.83	9.0000	18.08
0.0500	17.39	1.0833	15.90	9.5000	18.10
0.0666	16.26	1.1667	15.95	10.0000	18.11
0.0833	15.73	1.2500	16.03	12.0000	17.89
0.1000	15.52	1.3333	16.10	14.0000	18.06
0.1166	15.37	1.4166	16.16	16.0000	18.13
0.1333	15.15	1.5000	16.23	18.0000	18.15
0.1500	15.13	1.5833	16.29	20.0000	18.16
0.1666	15.14	1.6667	16.34	22.0000	18.17
0.1833	15.17	1.7500	16.40	24.0000	18.18
0.2000	15.17	1.8333	16.46	26.0000	18.18
0.2166	15.18	1.9167	16.51	28.0000	18.19
0.2333	15.21	2.0000	16.57	30.0000	18.19
0.2500	15.23	2.5000	16.86	32.0000	18.20
0.2666	15.24	3.0000	17.09		
0.2833	15.25	3.5000	17.30		

SLUG TEST DATA: MW 9 - S (slug removed)

Step# 1 04/02 09:52

Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)
0.0000	20.88	0.3000	20.95	4.0000	19.32
0.0033	20.89	0.3166	20.92	4.5000	19.19
0.0066	20.93	0.3333	20.91	5.0000	19.07
0.0099	21.05	0.4167	20.86	5.5000	18.96
0.0133	21.15	0.5000	20.80	6.0000	18.87
0.0166	21.17	0.5833	20.74	6.5000	18.79
0.0200	21.17	0.6667	20.69	7.0000	18.71
0.0233	21.15	0.7500	20.64	7.5000	18.65
0.0266	21.15	0.8333	20.59	8.0000	18.60
0.0300	21.12	0.9167	20.54	8.5000	18.55
0.0333	21.12	1.0000	20.49	9.0000	18.51
0.0500	21.19	1.0833	20.44	9.5000	18.47
0.0666	21.20	1.1667	20.40	10.0000	18.44
0.0833	21.18	1.2500	20.35	12.0000	18.37
0.1000	21.31	1.3333	20.30	14.0000	18.32
0.1166	21.65	1.4166	20.26	16.0000	18.30
0.1333	21.87	1.5000	20.22	18.0000	18.29
0.1500	23.06	1.5833	20.18	20.0000	18.28
0.1666	23.57	1.6667	20.14	22.0000	18.27
0.1833	23.89	1.7500	20.09	24.0000	18.27
0.2000	23.84	1.8333	20.15	26.0000	18.26
0.2166	23.75	1.9167	20.10	28.0000	18.27
0.2333	23.24	2.0000	20.05	30.0000	18.26
0.2500	22.84	2.5000	19.84		
0.2666	22.45	3.0000	19.65		
0.2833	21.09	3.5000	19.48		

SLUG TEST DATA: MW 9 - I (slug inserted)

Step 0 04/01 11:10

Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)
0.0000	16.81	1.5833	14.37	54.0000	14.40	140.000	14.42	226.000	14.43
0.0033	16.63	1.6667	14.37	56.0000	14.40	142.000	14.42	228.000	14.44
0.0066	16.51	1.7500	14.37	58.0000	14.40	144.000	14.41	230.000	14.44
0.0099	16.65	1.8333	14.37	60.0000	14.40	146.000	14.42	232.000	14.43
0.0133	16.63	1.9167	14.37	62.0000	14.41	148.000	14.41	234.000	14.43
0.0166	16.43	2.0000	14.37	64.0000	14.39	150.000	14.42	236.000	14.43
0.0200	16.87	2.5000	14.36	66.0000	14.40	152.000	14.41	238.000	14.43
0.0233	16.03	3.0000	14.36	68.0000	14.40	154.000	14.43	240.000	14.43
0.0266	16.51	3.5000	14.38	70.0000	14.40	156.000	14.43	242.000	14.44
0.0300	15.78	4.0000	14.38	72.0000	14.40	158.000	14.43	244.000	14.44
0.0333	15.52	4.5000	14.38	74.0000	14.40	160.000	14.43	246.000	14.43
0.0500	15.30	5.0000	14.37	76.0000	14.40	162.000	14.43	248.000	14.43
0.0666	15.26	5.5000	14.38	78.0000	14.40	164.000	14.43	250.000	14.42
0.0833	14.61	6.0000	14.38	80.0000	14.40	166.000	14.42	252.000	14.44
0.1000	14.49	6.5000	14.36	82.0000	14.40	168.000	14.43	254.000	14.44
0.1166	14.34	7.0000	14.39	84.0000	14.40	170.000	14.43	256.000	14.44
0.1333	14.39	7.5000	14.40	86.0000	14.40	172.000	14.42	258.000	14.44
0.1500	14.39	8.0000	14.39	88.0000	14.40	174.000	14.42	260.000	14.43
0.1666	14.34	8.5000	14.38	90.0000	14.41	176.000	14.43	262.000	14.44
0.1833	14.42	9.0000	14.39	92.0000	14.41	178.000	14.43	264.000	14.44
0.2000	14.39	9.5000	14.39	94.0000	14.41	180.000	14.43	266.000	14.43
0.2166	14.40	10.0000	14.41	96.0000	14.41	182.000	14.42	268.000	14.43
0.2333	14.36	12.0000	14.43	98.0000	14.40	184.000	14.43	270.000	14.43
0.2500	14.41	14.0000	14.41	100.000	14.40	186.000	14.43	272.000	14.43
0.2666	14.52	16.0000	14.40	102.000	14.40	188.000	14.43	274.000	14.44
0.2833	14.40	18.0000	14.39	104.000	14.42	190.000	14.44	276.000	14.44
0.3000	14.41	20.0000	14.41	106.000	14.42	192.000	14.43	278.000	14.43
0.3166	14.39	22.0000	14.38	108.000	14.42	194.000	14.43	280.000	14.43
0.3333	14.37	24.0000	14.38	110.000	14.43	196.000	14.43	282.000	14.43
0.4167	14.39	26.0000	14.39	112.000	14.42	198.000	14.43	284.000	14.43
0.5000	14.39	28.0000	14.38	114.000	14.40	200.000	14.43	286.000	14.43
0.5833	14.39	30.0000	14.39	116.000	14.41	202.000	14.43	288.000	14.43
0.6667	14.38	32.0000	14.39	118.000	14.42	204.000	14.43	290.000	14.44
0.7500	14.38	34.0000	14.39	120.000	14.43	206.000	14.43	292.000	14.44
0.8333	14.38	36.0000	14.39	122.000	14.42	208.000	14.43	294.000	14.44
0.9167	14.38	38.0000	14.39	124.000	14.41	210.000	14.44	296.000	14.44
1.0000	14.38	40.0000	14.39	126.000	14.41	212.000	14.42	298.000	14.44
1.0833	14.36	42.0000	14.40	128.000	14.41	214.000	14.43	300.000	14.44
1.1667	14.38	44.0000	14.41	130.000	14.42	216.000	14.43	302.000	14.44
1.2500	14.38	46.0000	14.40	132.000	14.43	218.000	14.44	304.000	14.44
1.3333	14.38	48.0000	14.40	134.000	14.42	220.000	14.43	306.000	14.44
1.4166	14.37	50.0000	14.40	136.000	14.40	222.000	14.41	308.000	14.44
1.5000	14.37	52.0000	14.39	138.000	14.40	224.000	14.43		

SLUG TEST DATA: MW 9 - D (slug inserted)

Step# 0 04/01 10:38

Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)
0.0000	2.94	4.0000	0.14	90.0000	0.21	194.000	0.23	298.000	0.25
0.0033	2.94	4.5000	0.14	92.0000	0.20	196.000	0.24	300.000	0.25
0.0066	2.95	5.0000	0.14	94.0000	0.22	198.000	0.22	302.000	0.25
0.0099	2.92	5.5000	0.14	96.0000	0.20	200.000	0.23	304.000	0.26
0.0133	2.88	6.0000	0.14	98.0000	0.20	202.000	0.22	306.000	0.26
0.0166	2.83	6.5000	0.14	100.000	0.20	204.000	0.22	308.000	0.25
0.0200	2.81	7.0000	0.15	102.000	0.20	206.000	0.23	310.000	0.25
0.0233	2.81	7.5000	0.15	104.000	0.20	208.000	0.24	312.000	0.26
0.0266	2.74	8.0000	0.15	106.000	0.20	210.000	0.23	314.000	0.26
0.0300	2.69	8.5000	0.15	108.000	0.21	212.000	0.24	316.000	0.26
0.0333	2.61	9.0000	0.15	110.000	0.20	214.000	0.23	318.000	0.26
0.0500	2.50	9.5000	0.16	112.000	0.21	216.000	0.24	320.000	0.26
0.0666	2.45	10.0000	0.16	114.000	0.20	218.000	0.24	322.000	0.26
0.0833	2.19	12.0000	0.16	116.000	0.22	220.000	0.23	324.000	0.26
0.1000	1.87	14.0000	0.16	118.000	0.20	222.000	0.24	326.000	0.26
0.1166	1.65	16.0000	0.16	120.000	0.20	224.000	0.23	328.000	0.26
0.1333	1.52	18.0000	0.17	122.000	0.21	226.000	0.23	330.000	0.26
0.1500	1.38	20.0000	0.17	124.000	0.23	228.000	0.24	332.000	0.26
0.1666	0.98	22.0000	0.17	126.000	0.22	230.000	0.24	334.000	0.26
0.1833	0.83	24.0000	0.19	128.000	0.21	232.000	0.24	336.000	0.26
0.2000	0.60	26.0000	0.20	130.000	0.21	234.000	0.24	338.000	0.26
0.2166	-0.05	28.0000	0.19	132.000	0.20	236.000	0.24	340.000	0.26
0.2333	0.40	30.0000	0.18	134.000	0.20	238.000	0.24	342.000	0.26
0.2500	-0.41	32.0000	0.18	136.000	0.22	240.000	0.24	344.000	0.26
0.2666	0.10	34.0000	0.17	138.000	0.23	242.000	0.24	346.000	0.26
0.2833	-0.11	36.0000	0.17	140.000	0.23	244.000	0.24		
0.3000	0.40	38.0000	0.17	142.000	0.23	246.000	0.24		
0.3166	0.22	40.0000	0.18	144.000	0.23	248.000	0.24		
0.3333	-0.06	42.0000	0.20	146.000	0.21	250.000	0.25		
0.4167	0.14	44.0000	0.21	148.000	0.22	252.000	0.24		
0.5000	0.13	46.0000	0.19	150.000	0.24	254.000	0.23		
0.5833	0.13	48.0000	0.18	152.000	0.23	256.000	0.25		
0.6667	0.13	50.0000	0.18	154.000	0.22	258.000	0.25		
0.7500	0.13	52.0000	0.17	156.000	0.21	260.000	0.25		
0.8333	0.13	54.0000	0.18	158.000	0.22	262.000	0.25		
0.9167	0.13	56.0000	0.18	160.000	0.22	264.000	0.24		
1.0000	0.13	58.0000	0.19	162.000	0.22	266.000	0.24		
1.0833	0.13	60.0000	0.18	164.000	0.23	268.000	0.24		
1.1667	0.13	62.0000	0.18	166.000	0.22	270.000	0.24		
1.2500	0.13	64.0000	0.19	168.000	0.20	272.000	0.25		
1.3333	0.13	66.0000	0.19	170.000	0.21	274.000	0.25		
1.4166	0.13	68.0000	0.18	172.000	0.22	276.000	0.25		
1.5000	0.13	70.0000	0.19	174.000	0.22	278.000	0.25		
1.5833	0.13	72.0000	0.19	176.000	0.22	280.000	0.25		
1.6667	0.13	74.0000	0.22	178.000	0.22	282.000	0.24		
1.7500	0.13	76.0000	0.22	180.000	0.22	284.000	0.26		
1.8333	0.13	78.0000	0.20	182.000	0.22	286.000	0.25		
1.9167	0.13	80.0000	0.20	184.000	0.22	288.000	0.25		
2.0000	0.13	82.0000	0.19	186.000	0.23	290.000	0.25		
2.5000	0.13	84.0000	0.20	188.000	0.24	292.000	0.25		
3.0000	0.13	86.0000	0.22	190.000	0.22	294.000	0.25		
3.5000	0.14	88.0000	0.20	192.000	0.23	296.000	0.25		

SLUG TEST DATA: MW 10 - S (slug inserted)

Step# 0 04/02 11:07

Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)
0.0000	2.71	0.3166	1.74	5.0000	3.56
0.0033	2.61	0.3333	1.77	5.5000	3.61
0.0066	2.36	0.4167	1.93	6.0000	3.64
0.0099	2.50	0.5000	2.06	6.5000	3.66
0.0133	2.43	0.5833	2.18	7.0000	3.68
0.0166	2.29	0.6667	2.31	7.5000	3.68
0.0200	2.25	0.7500	2.42	8.0000	3.69
0.0233	2.14	0.8333	2.53	8.5000	3.70
0.0266	2.19	0.9167	2.62	9.0000	3.71
0.0300	2.16	1.0000	2.70	9.5000	3.70
0.0333	1.92	1.0833	2.77	10.0000	3.70
0.0500	1.89	1.1667	2.84	12.0000	3.71
0.0666	1.28	1.2500	2.90	14.0000	3.72
0.0833	1.22	1.3333	2.96	16.0000	3.70
0.1000	1.14	1.4166	3.01	18.0000	3.71
0.1166	1.20	1.5000	3.05	20.0000	3.69
0.1333	1.26	1.5833	3.10	22.0000	3.70
0.1500	1.32	1.6667	3.14	24.0000	3.71
0.1666	1.36	1.7500	3.17	26.0000	3.72
0.1833	1.44	1.8333	3.21	28.0000	3.70
0.2000	1.47	1.9167	3.24	30.0000	3.70
0.2166	1.49	2.0000	3.27	32.0000	3.70
0.2333	1.56	2.5000	3.39		
0.2500	1.61	3.0000	3.43		
0.2666	1.64	3.5000	3.51		
0.2833	1.67	4.0000	3.57		
0.3000	1.70	4.5000	3.61		

SLUG TEST DATA: MW 10 - S (slug removed)

Step# 1 04/02 11:40

Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)
0.0000	6.24	0.3333	5.50	6.0000	3.79
0.0033	6.20	0.4167	5.38	6.5000	3.78
0.0066	6.18	0.5000	5.26	7.0000	3.78
0.0099	6.16	0.5833	5.17	7.5000	3.77
0.0133	6.16	0.6667	5.08	8.0000	3.76
0.0166	6.14	0.7500	4.99	8.5000	3.76
0.0200	6.13	0.8333	4.92	9.0000	3.75
0.0233	6.12	0.9167	4.84	9.5000	3.74
0.0266	6.11	1.0000	4.78	10.0000	3.74
0.0300	6.10	1.0833	4.72	12.0000	3.73
0.0333	6.08	1.1667	4.66	14.0000	3.71
0.0500	6.08	1.2500	4.61	16.0000	3.70
0.0666	6.04	1.3333	4.56	18.0000	3.70
0.0833	6.00	1.4166	4.52	20.0000	3.69
0.1000	5.96	1.5000	4.48	22.0000	3.69
0.1166	5.91	1.5833	4.44	24.0000	3.69
0.1333	5.89	1.6667	4.40	26.0000	3.69
0.1500	5.84	1.7500	4.36	28.0000	3.70
0.1666	5.81	1.8333	4.33	30.0000	3.69
0.1833	5.77	1.9167	4.30	32.0000	3.68
0.2000	5.74	2.0000	4.27	34.0000	3.67
0.2166	5.71	2.5000	4.13	36.0000	3.67
0.2333	5.67	3.0000	4.02	38.0000	3.68
0.2500	5.64	3.5000	3.96	40.0000	3.68
0.2666	5.61	4.0000	3.91	42.0000	3.68
0.2833	5.58	4.5000	3.87	44.0000	3.68
0.3000	5.56	5.0000	3.84	46.0000	3.68
0.3166	5.53	5.5000	3.81		

SLUG TEST DATA: MW 10 - I (slug inserted)

Step# 0 04/02 10:53

Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)
0.0000	8.79	2.0000	7.16	74.0000	7.25	170.000	7.35	266.000	7.47
0.0033	8.48	2.5000	7.17	76.0000	7.25	172.000	7.36	268.000	7.48
0.0083	8.41	3.0000	7.17	78.0000	7.26	174.000	7.36	270.000	7.48
0.0099	8.06	3.5000	7.16	80.0000	7.24	176.000	7.36	272.000	7.48
0.0133	8.92	4.0000	7.18	82.0000	7.23	178.000	7.36	274.000	7.48
0.0166	7.82	4.5000	7.18	84.0000	7.23	180.000	7.37	276.000	7.48
0.0200	8.24	5.0000	7.18	86.0000	7.24	182.000	7.37	278.000	7.49
0.0233	7.55	5.5000	7.18	88.0000	7.25	184.000	7.37	280.000	7.49
0.0266	7.45	6.0000	7.17	90.0000	7.26	186.000	7.38	282.000	7.49
0.0300	7.85	6.5000	7.17	92.0000	7.25	188.000	7.38	284.000	7.49
0.0333	7.36	7.0000	7.17	94.0000	7.25	190.000	7.38	286.000	7.49
0.0500	7.72	7.5000	7.16	96.0000	7.26	192.000	7.38	288.000	7.50
0.0666	7.13	8.0000	7.16	98.0000	7.26	194.000	7.38	290.000	7.50
0.0833	7.06	8.5000	7.18	100.000	7.27	196.000	7.39	292.000	7.50
0.1000	7.18	9.0000	7.16	102.000	7.27	198.000	7.39	294.000	7.51
0.1166	7.06	9.5000	7.18	104.000	7.27	200.000	7.39	296.000	7.51
0.1333	7.25	10.0000	7.18	106.000	7.27	202.000	7.40		
0.1500	7.16	12.0000	7.18	108.000	7.27	204.000	7.40		
0.1666	7.21	14.0000	7.18	110.000	7.28	206.000	7.40		
0.1833	7.20	16.0000	7.18	112.000	7.28	208.000	7.41		
0.2000	7.15	18.0000	7.18	114.000	7.28	210.000	7.41		
0.2166	7.17	20.0000	7.19	116.000	7.29	212.000	7.41		
0.2333	7.20	22.0000	7.17	118.000	7.29	214.000	7.41		
0.2500	7.18	24.0000	7.19	120.000	7.29	216.000	7.41		
0.2666	7.16	26.0000	7.18	122.000	7.29	218.000	7.41		
0.2833	7.16	28.0000	7.19	124.000	7.30	220.000	7.42		
0.3000	7.17	30.0000	7.19	126.000	7.30	222.000	7.42		
0.3166	7.17	32.0000	7.20	128.000	7.30	224.000	7.42		
0.3333	7.16	34.0000	7.20	130.000	7.30	226.000	7.43		
0.4167	7.17	36.0000	7.20	132.000	7.31	228.000	7.44		
0.5000	7.17	38.0000	7.21	134.000	7.31	230.000	7.44		
0.5833	7.16	40.0000	7.21	136.000	7.32	232.000	7.44		
0.6667	7.16	42.0000	7.20	138.000	7.32	234.000	7.44		
0.7500	7.17	44.0000	7.21	140.000	7.32	236.000	7.44		
0.8333	7.17	46.0000	7.21	142.000	7.33	238.000	7.45		
0.9167	7.17	48.0000	7.22	144.000	7.33	240.000	7.44		
1.0000	7.17	50.0000	7.21	146.000	7.33	242.000	7.44		
1.0833	7.17	52.0000	7.22	148.000	7.33	244.000	7.45		
1.1667	7.17	54.0000	7.23	150.000	7.33	246.000	7.45		
1.2500	7.17	56.0000	7.23	152.000	7.33	248.000	7.45		
1.3333	7.17	58.0000	7.22	154.000	7.33	250.000	7.46		
1.4166	7.17	60.0000	7.23	156.000	7.34	252.000	7.46		
1.5000	7.17	62.0000	7.24	158.000	7.34	254.000	7.46		
1.5833	7.17	64.0000	7.24	160.000	7.34	256.000	7.46		
1.6667	7.16	66.0000	7.25	162.000	7.34	258.000	7.47		
1.7500	7.16	68.0000	7.24	164.000	7.34	260.000	7.47		
1.8333	7.16	70.0000	7.25	166.000	7.35	262.000	7.47		
1.9167	7.16	72.0000	7.25	168.000	7.35	264.000	7.47		

SLUG TEST DATA: MW 10 - D (slug inserted)

Step# 0 04/02 10:42

Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)
0.0000	11.75	1.5833	9.03	54.0000	9.31	140.000	9.64	226.000	9.93
0.0033	11.88	1.8667	9.03	56.0000	9.32	142.000	9.64	228.000	9.93
0.0066	11.70	1.7500	9.04	58.0000	9.34	144.000	9.65	230.000	9.94
0.0099	11.55	1.8333	9.04	60.0000	9.34	146.000	9.66	232.000	9.94
0.0133	11.47	1.9167	9.04	62.0000	9.35	148.000	9.67	234.000	9.95
0.0166	11.41	2.0000	9.04	64.0000	9.36	150.000	9.68	236.000	9.96
0.0200	11.36	2.5000	9.04	66.0000	9.37	152.000	9.68	238.000	9.96
0.0233	11.09	3.0000	9.05	68.0000	9.38	154.000	9.68	240.000	9.98
0.0266	11.08	3.5000	9.06	70.0000	9.39	156.000	9.69	242.000	9.98
0.0300	11.20	4.0000	9.06	72.0000	9.40	158.000	9.70	244.000	9.99
0.0333	11.25	4.5000	9.07	74.0000	9.40	160.000	9.71	246.000	9.99
0.0500	10.35	5.0000	9.07	76.0000	9.42	162.000	9.71	248.000	10.00
0.0666	10.39	5.5000	9.08	78.0000	9.41	164.000	9.72	250.000	10.00
0.0833	9.56	6.0000	9.08	80.0000	9.42	166.000	9.73	252.000	10.01
0.1000	8.78	6.5000	9.08	82.0000	9.43	168.000	9.73	254.000	10.01
0.1166	9.02	7.0000	9.09	84.0000	9.44	170.000	9.74	256.000	10.02
0.1333	9.22	7.5000	9.10	86.0000	9.45	172.000	9.74	258.000	10.02
0.1500	9.13	8.0000	9.10	88.0000	9.46	174.000	9.75	260.000	10.03
0.1666	9.04	8.5000	9.11	90.0000	9.46	176.000	9.76	262.000	10.04
0.1833	8.90	9.0000	9.11	92.0000	9.46	178.000	9.77	264.000	10.04
0.2000	9.14	9.5000	9.11	94.0000	9.46	180.000	9.77	266.000	10.05
0.2166	9.01	10.0000	9.11	96.0000	9.47	182.000	9.78	268.000	10.06
0.2333	9.02	12.0000	9.13	98.0000	9.46	184.000	9.79	270.000	10.06
0.2500	9.02	14.0000	9.14	100.000	9.49	186.000	9.79	272.000	10.07
0.2666	9.03	16.0000	9.15	102.000	9.50	188.000	9.80	274.000	10.07
0.2833	9.02	18.0000	9.16	104.000	9.50	190.000	9.80	276.000	10.08
0.3000	9.02	20.0000	9.18	106.000	9.52	192.000	9.81	278.000	10.08
0.3166	9.02	22.0000	9.18	108.000	9.52	194.000	9.82	280.000	10.09
0.3333	9.02	24.0000	9.19	110.000	9.53	196.000	9.83	282.000	10.09
0.4167	9.02	26.0000	9.21	112.000	9.54	198.000	9.84	284.000	10.10
0.5000	9.02	28.0000	9.21	114.000	9.55	200.000	9.84	286.000	10.10
0.5833	9.02	30.0000	9.22	116.000	9.56	202.000	9.85	288.000	10.11
0.6667	9.02	32.0000	9.22	118.000	9.56	204.000	9.85	290.000	10.12
0.7500	9.02	34.0000	9.24	120.000	9.56	206.000	9.86	292.000	10.12
0.8333	9.02	36.0000	9.24	122.000	9.57	208.000	9.87	294.000	10.13
0.9167	9.02	38.0000	9.26	124.000	9.58	210.000	9.87	296.000	10.13
1.0000	9.02	40.0000	9.26	126.000	9.58	212.000	9.88	298.000	10.14
1.0833	9.02	42.0000	9.27	128.000	9.59	214.000	9.88	300.000	10.15
1.1667	9.03	44.0000	9.28	130.000	9.60	216.000	9.89	302.000	10.15
1.2500	9.03	46.0000	9.29	132.000	9.61	218.000	9.90	304.000	10.16
1.3333	9.03	48.0000	9.30	134.000	9.62	220.000	9.91	306.000	10.16
1.4166	9.03	50.0000	9.31	136.000	9.63	222.000	9.91	308.000	10.17
1.5000	9.03	52.0000	9.31	138.000	9.63	224.000	9.92	310.000	10.17

SLUG TEST DATA: MW 11 - S (slug inserted)

Step 0 04/03 08:44

Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)
0.0000	5.24	1.2500	5.10	38.0000	6.66	116.000	8.05
0.0033	5.22	1.3333	5.11	40.0000	6.74	118.000	8.07
0.0066	5.18	1.4166	5.11	42.0000	6.82	120.000	8.08
0.0099	5.03	1.5000	5.12	44.0000	6.88	122.000	8.09
0.0133	5.02	1.5833	5.12	46.0000	6.95	124.000	8.10
0.0166	5.01	1.6667	5.13	48.0000	7.01	126.000	8.11
0.0200	5.03	1.7500	5.14	50.0000	7.07	128.000	8.11
0.0233	5.02	1.8333	5.14	52.0000	7.13	130.000	8.11
0.0266	5.02	1.9167	5.14	54.0000	7.19	132.000	8.13
0.0300	5.04	2.0000	5.15	56.0000	7.25	134.000	8.13
0.0333	5.02	2.5000	5.16	58.0000	7.29	136.000	8.14
0.0500	5.03	3.0000	5.20	60.0000	7.34	138.000	8.14
0.0666	5.04	3.5000	5.23	62.0000	7.39	140.000	8.14
0.0833	5.04	4.0000	5.26	64.0000	7.43	142.000	8.15
0.1000	5.04	4.5000	5.28	66.0000	7.48	144.000	8.15
0.1166	5.04	5.0000	5.31	68.0000	7.52	146.000	8.16
0.1333	5.05	5.5000	5.31	70.0000	7.56	148.000	8.15
0.1500	5.05	6.0000	5.33	72.0000	7.60	150.000	8.16
0.1666	5.05	6.5000	5.36	74.0000	7.62	152.000	8.17
0.1833	5.05	7.0000	5.39	76.0000	7.66	154.000	8.18
0.2000	5.05	7.5000	5.42	78.0000	7.69	156.000	8.18
0.2166	5.05	8.0000	5.45	80.0000	7.72	158.000	8.16
0.2333	5.05	8.5000	5.48	82.0000	7.75	160.000	8.18
0.2500	5.05	9.0000	5.51	84.0000	7.78	162.000	8.18
0.2666	5.06	9.5000	5.54	86.0000	7.81	164.000	8.19
0.2833	5.06	10.0000	5.57	88.0000	7.83	166.000	8.19
0.3000	5.06	12.0000	5.68	90.0000	7.85	168.000	8.19
0.3166	5.06	14.0000	5.73	92.0000	7.87	170.000	8.19
0.3333	5.06	16.0000	5.84	94.0000	7.89	172.000	8.19
0.4167	5.07	18.0000	5.92	96.0000	7.91	174.000	8.20
0.5000	5.07	20.0000	6.00	98.0000	7.93	176.000	8.20
0.5833	5.08	22.0000	6.02	100.000	7.95	178.000	8.20
0.6667	5.08	24.0000	6.13	102.000	7.96	180.000	8.22
0.7500	5.08	26.0000	6.21	104.000	7.98	182.000	8.20
0.8333	5.08	28.0000	6.30	106.000	8.00	184.000	8.21
0.9167	5.09	30.0000	6.38	108.000	8.01	186.000	8.21
1.0000	5.09	32.0000	6.46	110.000	8.02		
1.0833	5.10	34.0000	6.52	112.000	8.04		
1.1667	5.10	36.0000	6.58	114.000	8.05		

AR300872

SLUG TEST DATA: MW 12 - S (slug inserted)

Step# 0 04/01 09:21

Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)
0.0000	17.70	0.3333	15.74	6.0000	17.38
0.0033	17.66	0.4167	15.82	6.5000	17.42
0.0066	17.66	0.5000	15.90	7.0000	17.47
0.0099	17.66	0.5833	15.98	7.5000	17.50
0.0133	17.64	0.6667	16.05	8.0000	17.54
0.0166	17.67	0.7500	16.10	8.5000	17.57
0.0200	17.63	0.8333	16.16	9.0000	17.59
0.0233	17.57	0.9167	16.21	9.5000	17.63
0.0266	17.59	1.0000	16.25	10.0000	17.65
0.0300	17.57	1.0833	16.29	12.0000	17.74
0.0333	17.52	1.1667	16.33	14.0000	17.82
0.0500	17.26	1.2500	16.37	16.0000	17.88
0.0666	16.85	1.3333	16.41	18.0000	17.93
0.0833	16.53	1.4166	16.44	20.0000	18.00
0.1000	16.51	1.5000	16.48	22.0000	18.01
0.1166	16.25	1.5833	16.51	24.0000	18.03
0.1333	16.15	1.6667	16.54	26.0000	18.06
0.1500	16.13	1.7500	16.57	28.0000	18.07
0.1666	15.60	1.8333	16.60	30.0000	18.13
0.1833	15.43	1.9167	16.64	32.0000	18.12
0.2000	15.44	2.0000	16.66	34.0000	18.12
0.2166	15.78	2.5000	16.81	36.0000	18.14
0.2333	15.47	3.0000	16.93	38.0000	18.15
0.2500	15.73	3.5000	17.02	40.0000	18.16
0.2666	15.69	4.0000	17.11	42.0000	18.17
0.2833	15.65	4.5000	17.19		
0.3000	15.75	5.0000	17.27		
0.3166	15.73	5.5000	17.33		

SLUG TEST DATA: MW 12 - S (slug removed)

Step# 1 04/01 10:04

Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)
0.0000	24.48	0.4167	24.50	7.0000	19.00
0.0033	24.42	0.5000	24.50	7.5000	18.97
0.0066	24.41	0.5833	24.44	8.0000	18.92
0.0099	24.38	0.6667	24.48	8.5000	18.89
0.0133	24.39	0.7500	24.53	9.0000	18.86
0.0166	24.40	0.8333	24.52	9.5000	18.83
0.0200	24.38	0.9167	24.53	10.0000	18.81
0.0233	24.38	1.0000	22.96	12.0000	18.72
0.0266	24.41	1.0833	20.07	14.0000	18.64
0.0300	24.40	1.1667	19.99	16.0000	18.58
0.0333	24.40	1.2500	19.96	18.0000	18.56
0.0500	24.45	1.3333	19.93	20.0000	18.51
0.0666	24.48	1.4166	19.90	22.0000	18.48
0.0833	24.47	1.5000	19.88	24.0000	18.44
0.1000	24.46	1.5833	19.85	26.0000	18.42
0.1166	24.48	1.6667	19.82	28.0000	18.40
0.1333	24.45	1.7500	19.79	30.0000	18.39
0.1500	24.48	1.8333	19.77	32.0000	18.40
0.1666	24.48	1.9167	19.74	34.0000	18.37
0.1833	24.48	2.0000	19.72	36.0000	18.35
0.2000	24.45	2.5000	19.60	38.0000	18.35
0.2166	24.45	3.0000	19.49	40.0000	18.33
0.2333	24.45	3.5000	19.40		
0.2500	24.46	4.0000	19.32		
0.2666	24.46	4.5000	19.25		
0.2833	24.46	5.0000	19.20		
0.3000	24.46	5.5000	19.15		
0.3166	24.45	6.0000	19.09		
0.3333	24.48	6.5000	19.04		

SLUG TEST DATA: MW 12 - D (slug inserted)

Step# 0 04/01 09:44

Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)	Elapsed Time (minutes)	DTW (feet)
0.0000	18.19	6.5000	15.76	110.000	16.19	224.000	16.65	338.000	17.08
0.0033	18.14	7.0000	15.77	112.000	16.20	226.000	16.66	340.000	17.09
0.0066	18.04	7.5000	15.77	114.000	16.20	228.000	16.67	342.000	17.09
0.0099	18.12	8.0000	15.77	116.000	16.21	230.000	16.67	344.000	17.10
0.0133	18.06	8.5000	15.77	118.000	16.22	232.000	16.70	346.000	17.10
0.0166	17.99	9.0000	15.76	120.000	16.23	234.000	16.70	348.000	17.11
0.0200	18.07	9.5000	15.76	122.000	16.24	236.000	16.71	350.000	17.11
0.0233	18.11	10.0000	15.76	124.000	16.24	238.000	16.71	352.000	17.12
0.0266	17.91	12.0000	15.76	126.000	16.25	240.000	16.72	354.000	17.12
0.0300	17.85	14.0000	15.76	128.000	16.26	242.000	16.72	356.000	17.13
0.0333	17.89	16.0000	15.76	130.000	16.28	244.000	16.75	358.000	17.14
0.0500	17.75	18.0000	15.81	132.000	16.30	246.000	16.75	360.000	17.14
0.0666	17.41	20.0000	15.82	134.000	16.28	248.000	16.76	362.000	17.15
0.0833	16.62	22.0000	15.81	136.000	16.29	250.000	16.77	364.000	17.15
0.1000	16.26	24.0000	15.82	138.000	16.29	252.000	16.78	366.000	17.16
0.1166	16.03	26.0000	15.84	140.000	16.31	254.000	16.78	368.000	17.17
0.1333	15.76	28.0000	15.85	142.000	16.33	256.000	16.78	370.000	17.18
0.1500	15.77	30.0000	15.86	144.000	16.34	258.000	16.79	372.000	17.19
0.1666	15.77	32.0000	15.87	146.000	16.35	260.000	16.79	374.000	17.19
0.1833	15.73	34.0000	15.87	148.000	16.35	262.000	16.81	376.000	17.19
0.2000	15.71	36.0000	15.88	150.000	16.35	264.000	16.82	378.000	17.20
0.2166	15.76	38.0000	15.91	152.000	16.35	266.000	16.82	380.000	17.20
0.2333	15.71	40.0000	15.91	154.000	16.36	268.000	16.83	382.000	17.22
0.2500	15.72	42.0000	15.92	156.000	16.36	270.000	16.84	384.000	17.21
0.2666	15.71	44.0000	15.92	158.000	16.38	272.000	16.85	386.000	17.21
0.2833	15.71	46.0000	15.92	160.000	16.38	274.000	16.86	388.000	17.22
0.3000	15.73	48.0000	15.93	162.000	16.39	276.000	16.86	390.000	17.23
0.3166	15.71	50.0000	15.95	164.000	16.41	278.000	16.87	392.000	17.24
0.3333	15.71	52.0000	15.97	166.000	16.40	280.000	16.88	394.000	17.24
0.4167	15.71	54.0000	15.98	168.000	16.43	282.000	16.88	396.000	17.25
0.5000	15.71	56.0000	15.97	170.000	16.43	284.000	16.89	398.000	17.25
0.5833	15.71	58.0000	15.98	172.000	16.43	286.000	16.91	400.000	17.25
0.6667	15.71	60.0000	15.98	174.000	16.44	288.000	16.91	402.000	17.26
0.7500	15.71	62.0000	15.99	176.000	16.46	290.000	16.92	404.000	17.27
0.8333	15.71	64.0000	16.00	178.000	16.47	292.000	16.92	406.000	17.27
0.9167	15.71	66.0000	16.02	180.000	16.46	294.000	16.93	408.000	17.28
1.0000	15.71	68.0000	16.03	182.000	16.48	296.000	16.94	410.000	17.29
1.0833	15.71	70.0000	16.03	184.000	16.47	298.000	16.94	412.000	17.30
1.1667	15.71	72.0000	16.04	186.000	16.49	300.000	16.95	414.000	17.30
1.2500	15.71	74.0000	16.05	188.000	16.50	302.000	16.95	416.000	17.31
1.3333	15.71	76.0000	16.06	190.000	16.52	304.000	16.97	418.000	17.31
1.4166	15.71	78.0000	16.07	192.000	16.52	306.000	16.97	420.000	17.31
1.5000	15.71	80.0000	16.09	194.000	16.54	308.000	16.97	422.000	17.31
1.5833	15.71	82.0000	16.09	196.000	16.56	310.000	16.98	424.000	17.33
1.6667	15.71	84.0000	16.09	198.000	16.57	312.000	17.00	426.000	17.33
1.7500	15.71	86.0000	16.10	200.000	16.56	314.000	17.00	428.000	17.33
1.8333	15.71	88.0000	16.11	202.000	16.56	316.000	17.01	430.000	17.34
1.9167	15.71	90.0000	16.11	204.000	16.58	318.000	17.01	432.000	17.35
2.0000	15.71	92.0000	16.11	206.000	16.60	320.000	17.02		
2.5000	15.72	94.0000	16.15	208.000	16.61	322.000	17.03		
3.0000	15.73	96.0000	16.15	210.000	16.61	324.000	17.03		
3.5000	15.73	98.0000	16.16	212.000	16.61	326.000	17.03		
4.0000	15.73	100.000	16.17	214.000	16.63	328.000	17.04		
4.5000	15.74	102.000	16.16	216.000	16.63	330.000	17.05		
5.0000	15.74	104.000	16.16	218.000	16.64	332.000	17.06		
5.5000	15.74	106.000	16.17	220.000	16.64	334.000	17.07		
6.0000	15.75	108.000	16.19	222.000	16.65	336.000	17.07		

TYSON'S SITE

FREE FLOWING WELL TEST
WELL 11-I AND D

April 1987

Well 11 - I

Static Water Level +8.94 feet

Time	Total Volume (ml)*
0	0
10 sec	43
20	53
30	65
40	74
50	83
60	94
90	114
120	142
180	196
4 min	251
5	303
7	409
9	511
15	806
20	1036
25	1271
30	1486
35	1706

Well 11 - D

Static Water Level +8.99 feet

Time	Total Volume (ml)*
0	0
10 sec	9
20	11
30	13
40	14
50	15
60	15 1/2
1.5 min	19
2.0	22
2.5	25
3	28
3.5	32
4	36
4.5	39
5	42
6	47
7	54
8	62
9	69

FREE FLOWING WELL TEST
WELL 11-I AND D
(continued)

Well 11 - I		Well 11 - D	
Time	Total Volume (ml)*	Time	Total Volume (ml)*
40	1921	10	77
		11	85
		12	94
		13	101
		14	109
		15	117
		16	126
		17	134
		18	142
		19	152
		20	159
		25	200
		30	244
		35	292
		40	338
		45	381
		50	432
		55	478
		60	520
		80	695

at 115 min, 100 ml/10 min 37 sec

* Discharge was measured with 1000 and 100 ml graduated cylinders and a stop watch.

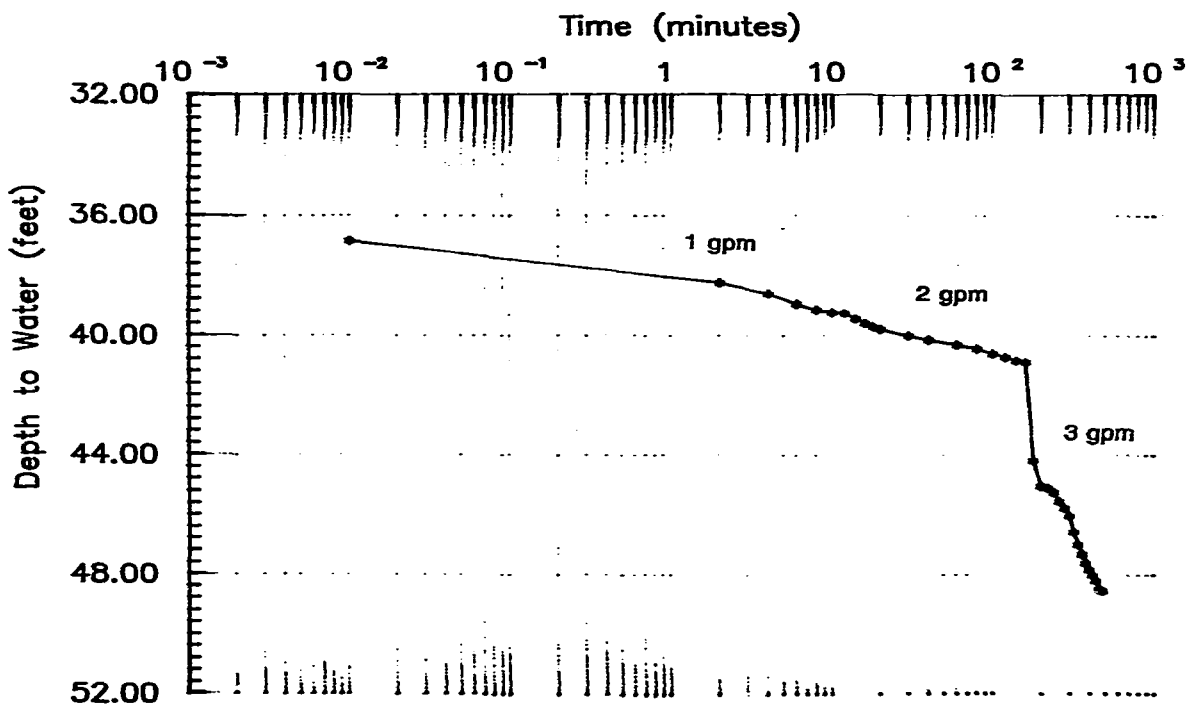
K

AR300878

APPENDIX K

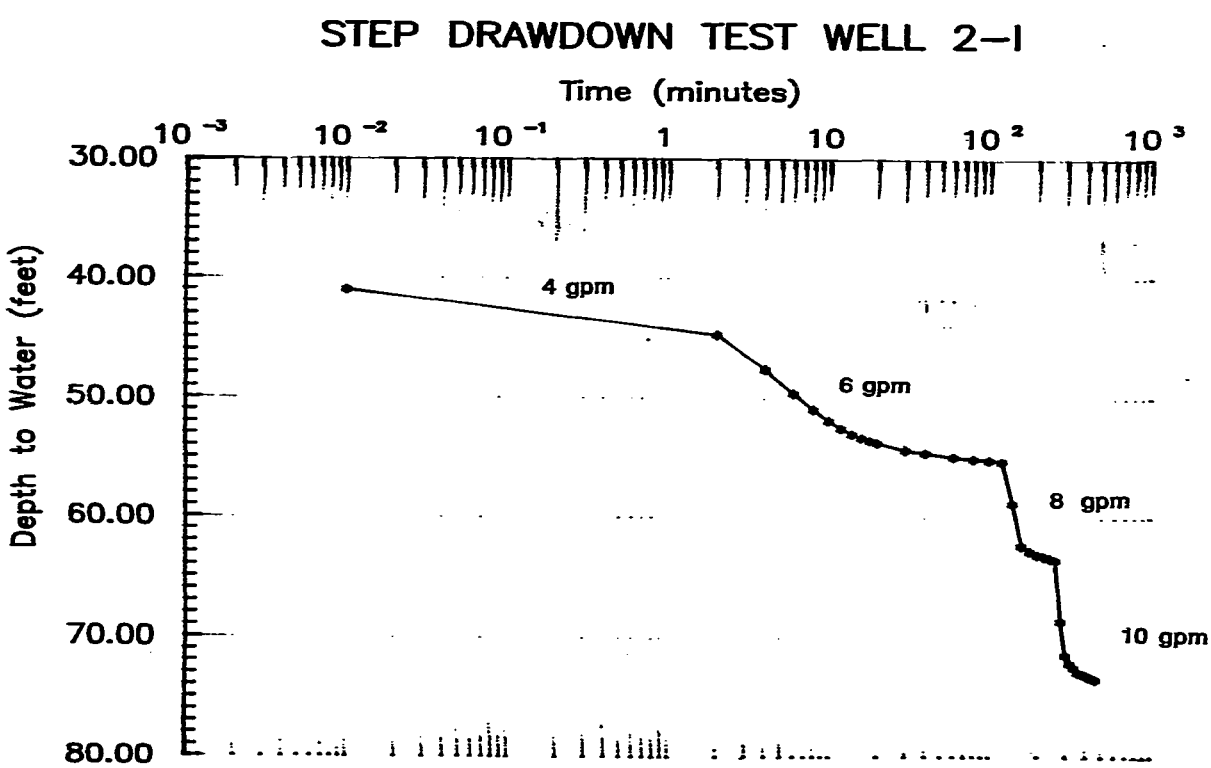
STEP TEST PLOTS

The ERM Group



AR300880

The ERM Group



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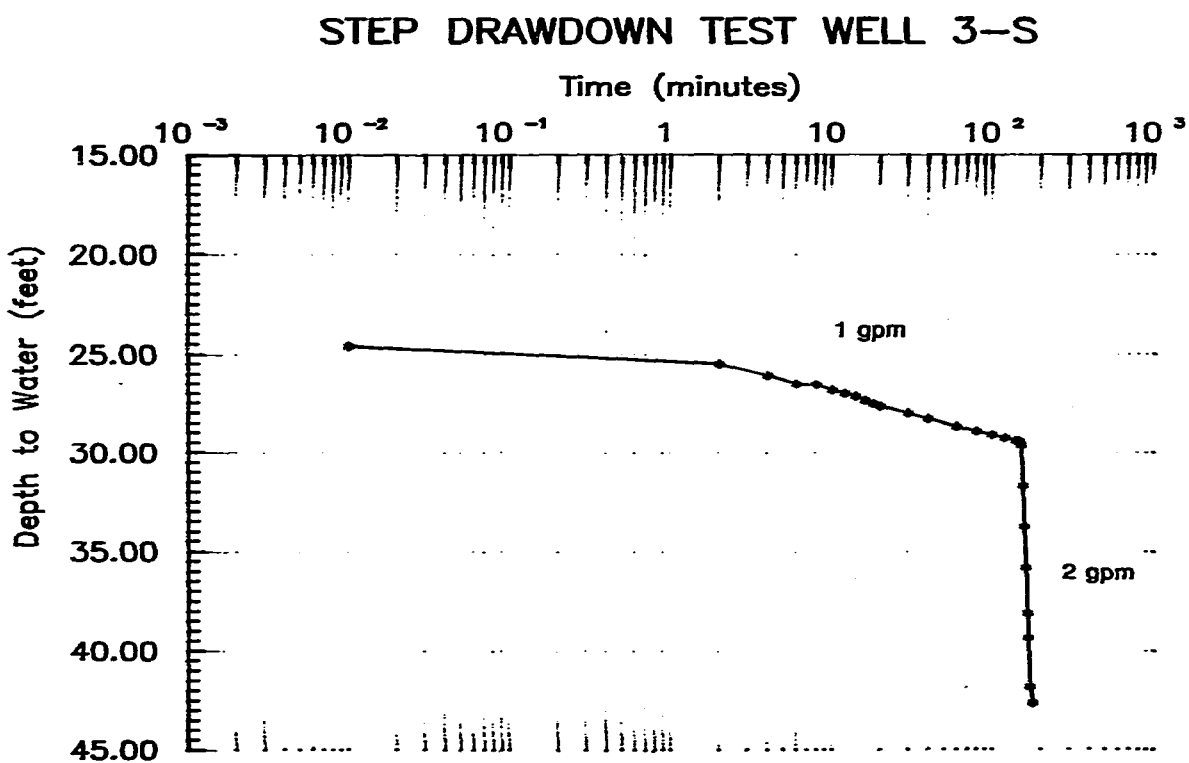
The ERM Group



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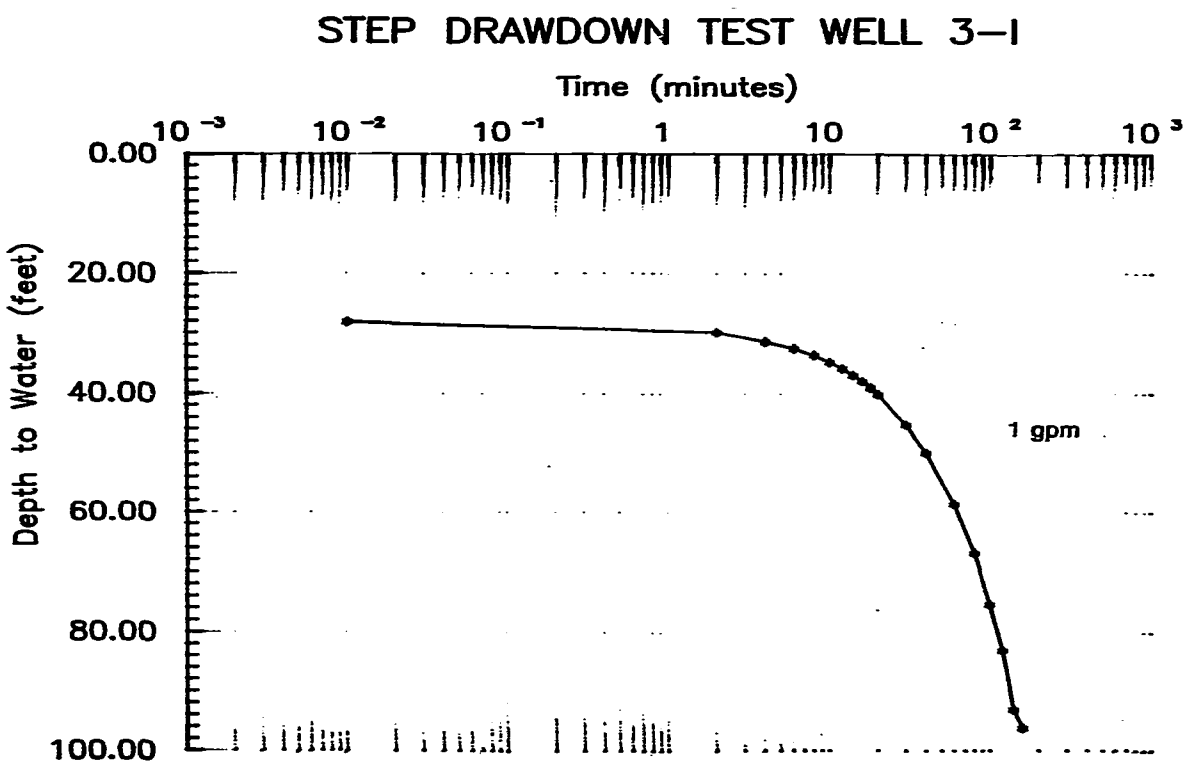
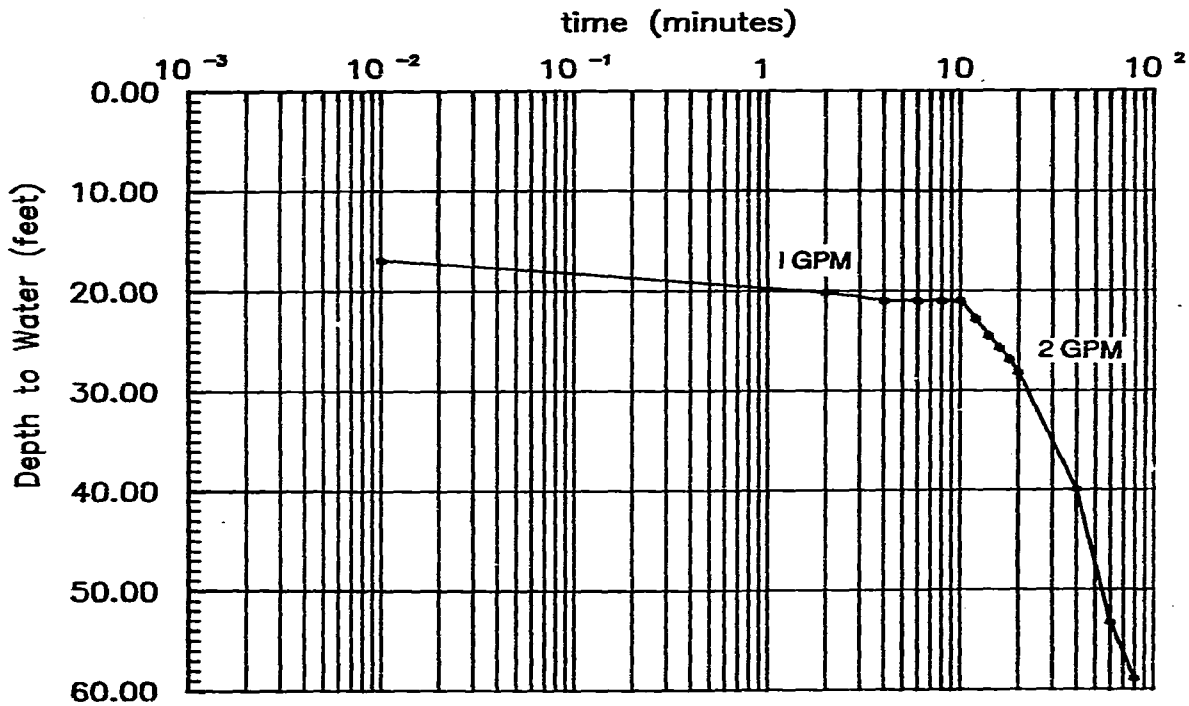


AR300883

The ERM Group

STEP DRAWDOWN TEST WELL 4–S



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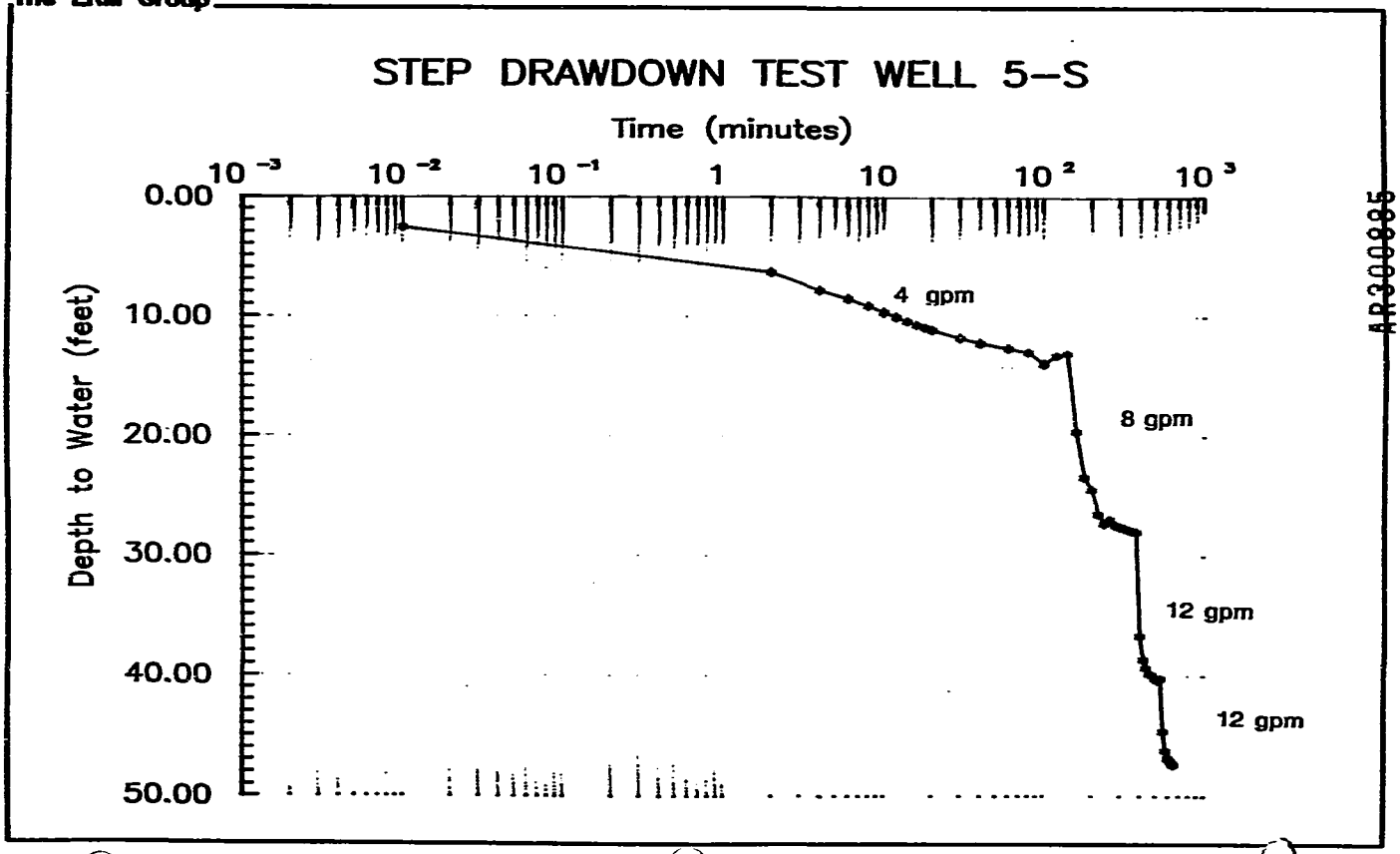
The ERM Group



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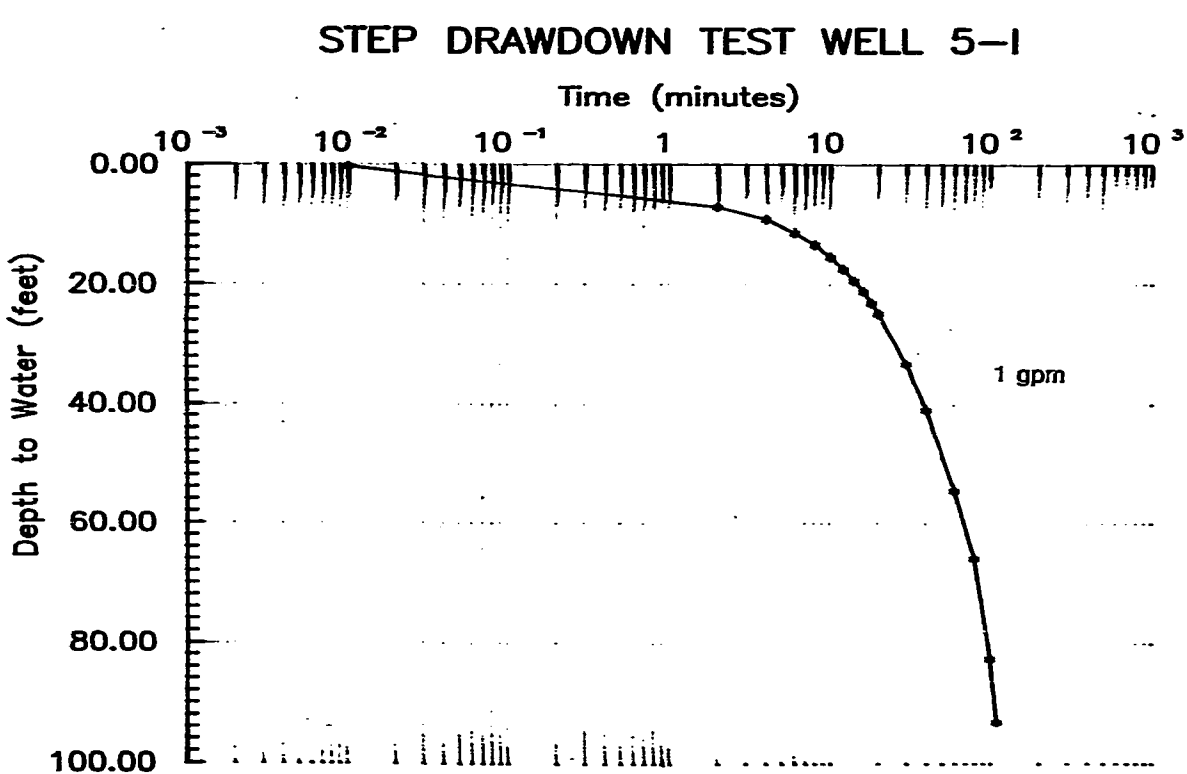
The ERM Group



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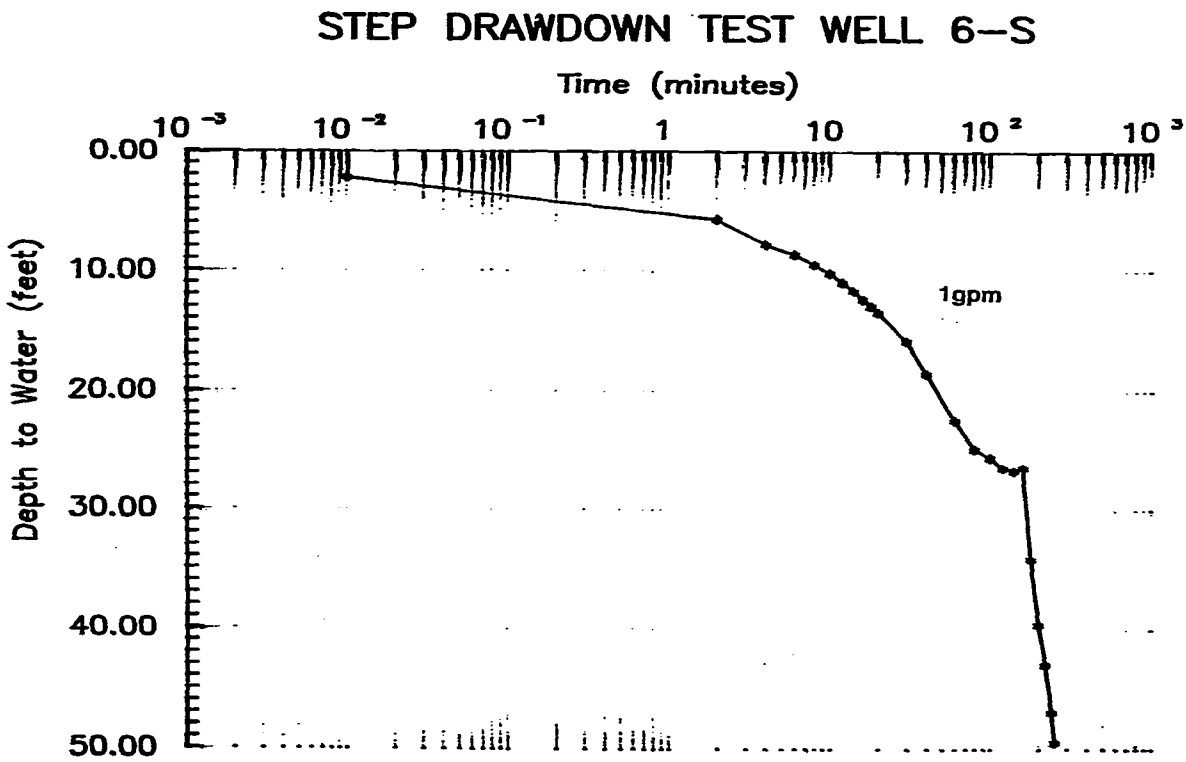
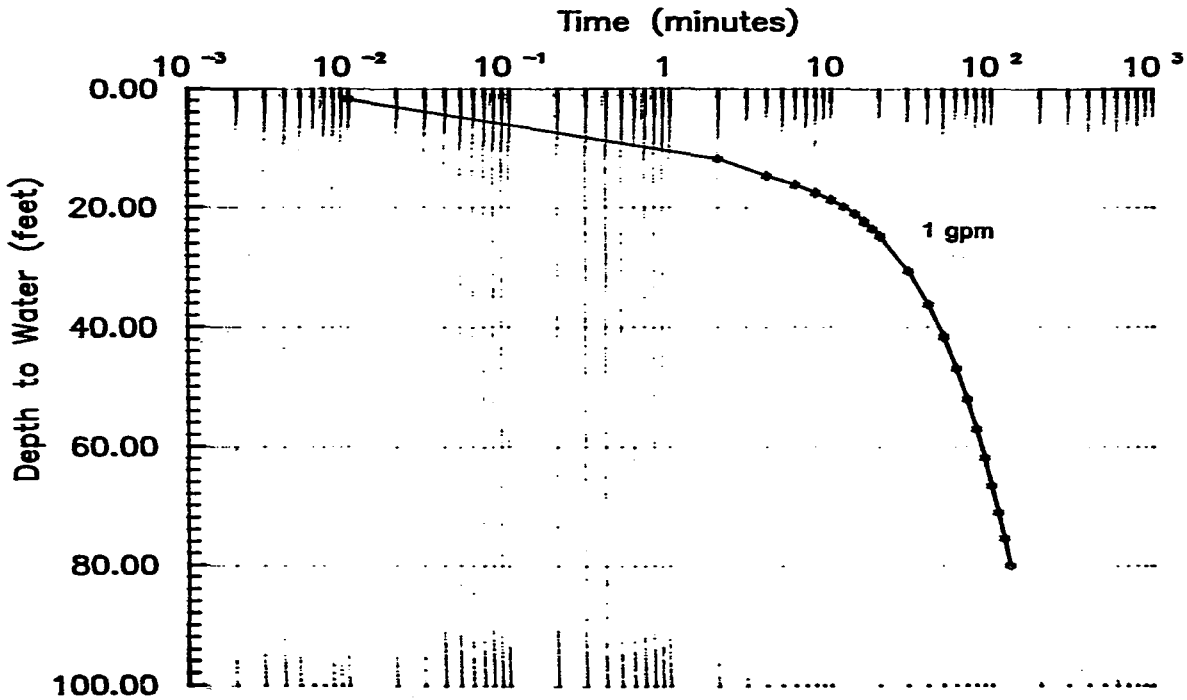
The ERM Group



AR300887

The ERM Group

STEP DRAWDOWN TEST WELL 6–I



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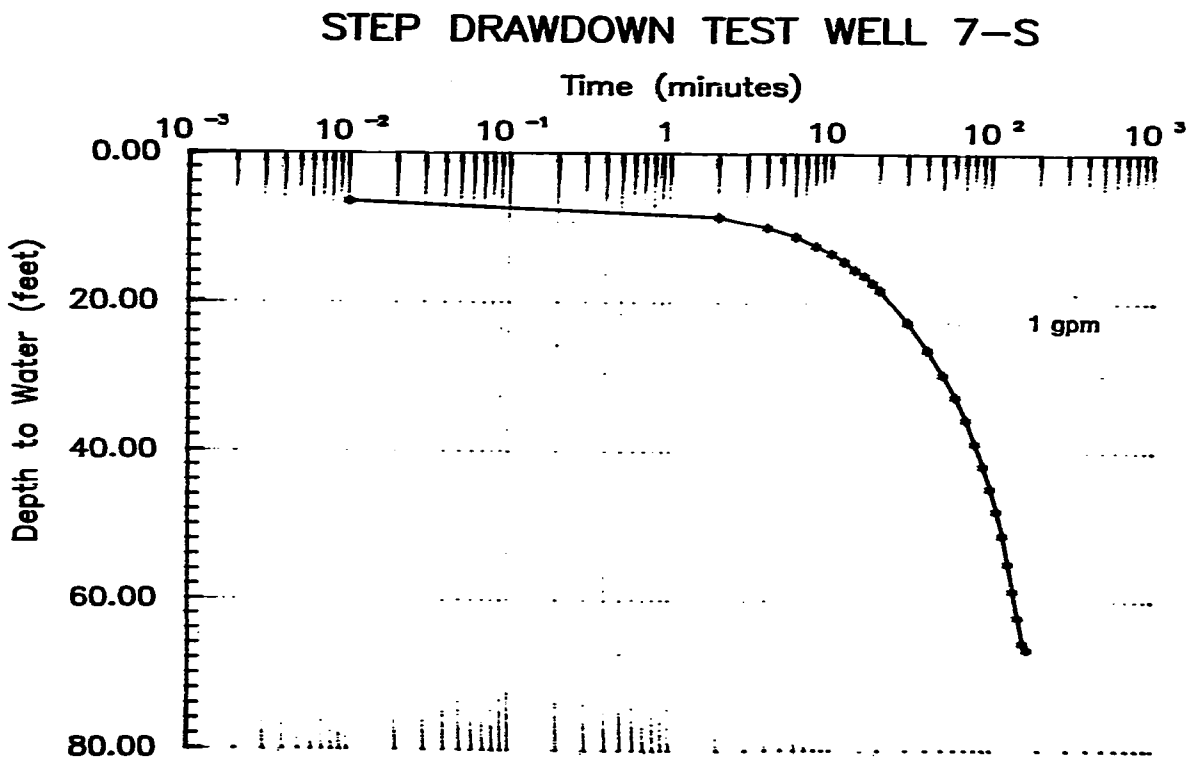
The ERM Group



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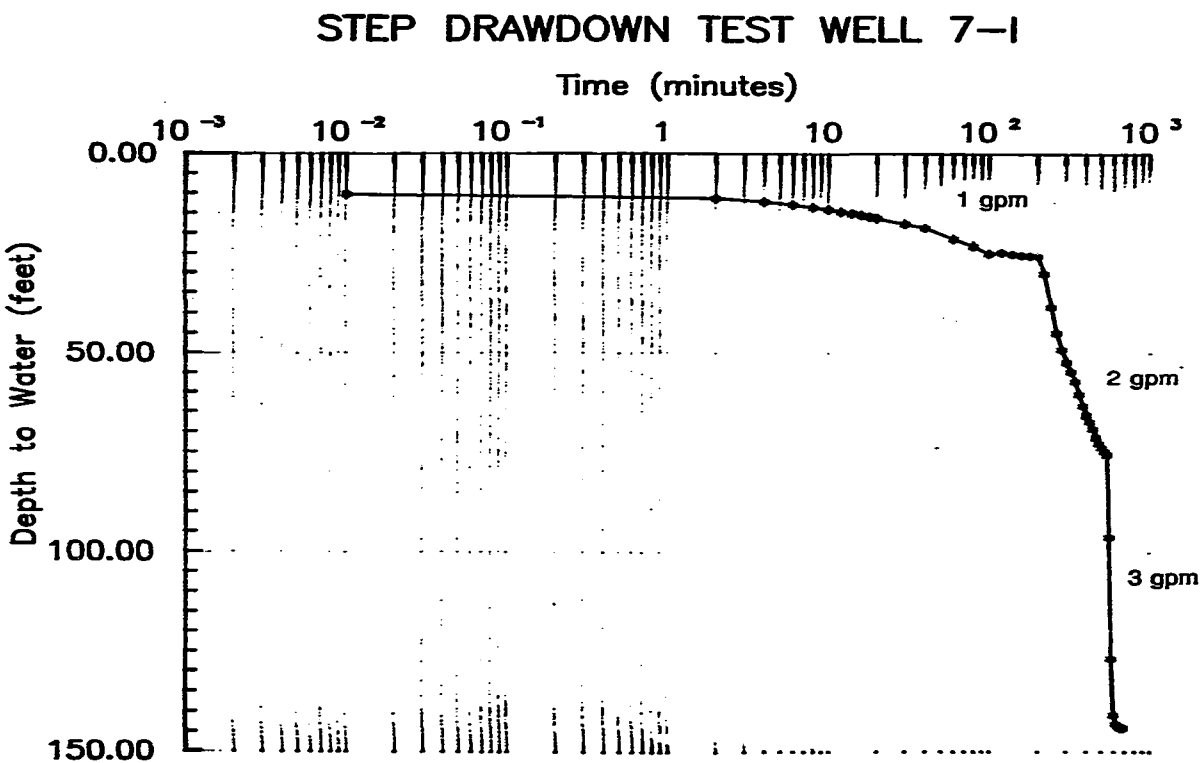
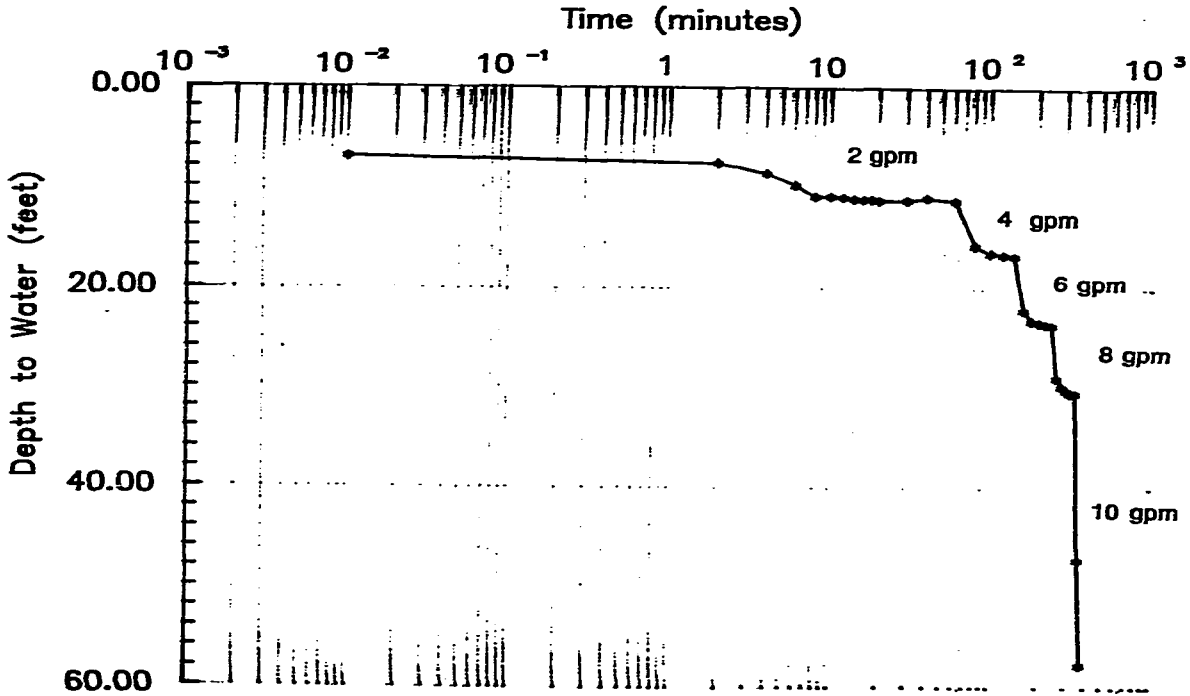
The ERM Group



AR300890

The ERM Group

STEP DRAWDOWN TEST WELL 8-S



AR300891

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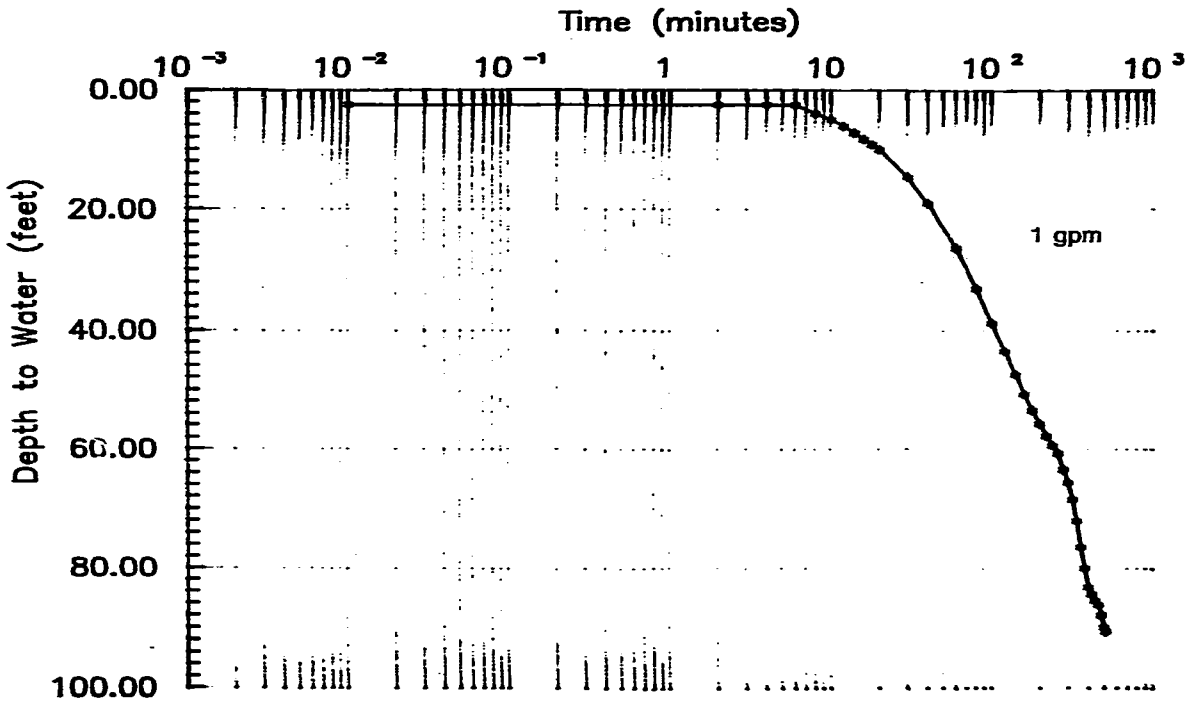
STEP DRAWDOWN TEST WELL 8-I



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APPENDIX L

PUMP TEST DATA

The ERM Group

LONG TERM PUMP TEST--DRAWDOWN DATA (WELL 5-S PUMPING WELL)

Elapsed time (minutes)	WELL NUMBER 4-S	4-I	4-D	5-S	5-I	5-D	6-S	6-I	8-S	8-I	NUS-7
0.00	16.67	23.30	6.26	2.20	2.61	17.00	3.22	4.33	7.81	3.21	12.08
0.26	16.71	23.32	6.32	3.69	2.61	16.99	3.19	4.32	7.81	3.22	12.09
0.34	16.71	23.32	6.32	4.27	2.61	16.99	3.19	4.32	7.81	3.22	12.08
0.42	16.71	23.32	6.32	4.88	2.61	16.99	3.19	4.32	7.81	3.22	12.08
0.51	16.71	23.32	6.32	5.49	2.61	16.99	3.19	4.32	7.82	3.22	12.09
0.59	16.71	23.32	6.32	5.98	2.61	16.99	3.19	4.32	7.81	3.22	12.08
0.67	16.71	23.32	6.32	6.47	2.61	16.99	3.19	4.32	7.82	3.22	12.09
0.76	16.71	23.32	6.32	6.98	2.61	16.99	3.19	4.32	7.81	3.22	12.08
0.84	16.71	23.32	6.32	7.37	2.61	16.99	3.19	4.32	7.81	3.22	12.09
0.92	16.71	23.32	6.32	7.41	2.61	16.99	3.19	4.32	7.82	3.22	12.09
1.01	16.71	23.32	6.32	7.60	2.61	16.99	3.19	4.32	7.81	3.22	12.10
1.42	16.70	23.32	6.32	8.25	2.61	16.99	3.19	4.32	7.81	3.22	12.09
1.75	16.71	23.32	6.32	8.73	2.61	16.99	3.19	4.32	7.81	3.22	12.09
2.08	16.71	23.32	6.33	9.15	2.61	16.99	3.19	4.32	7.82	3.22	12.09
2.42	16.71	23.32	6.33	9.73	2.61	16.99	3.20	4.32	7.82	3.22	12.09
2.75	16.71	23.32	6.33	10.06	2.61	16.99	3.20	4.32	7.81	3.22	12.10
3.08	16.72	23.33	6.34	11.02	2.61	16.99	3.21	4.32	7.82	3.22	12.10
3.42	16.72	23.33	6.34	11.80	2.61	16.99	3.21	4.33	7.82	3.22	12.10
3.75	16.72	23.33	6.34	12.58	2.61	16.99	3.21	4.33	7.82	3.22	12.09
4.08	16.71	23.32	6.33	13.39	2.61	16.99	3.21	4.32	7.81	3.22	12.09
4.42	16.71	23.32	6.32	13.99	2.61	16.99	3.20	4.32	7.82	3.22	12.09
4.75	16.71	23.32	6.32	14.57	2.61	16.99	3.20	4.32	7.81	3.22	12.08
5.08	16.70	23.31	6.32	15.15	2.61	16.99	3.20	4.32	7.82	3.22	12.09
5.42	16.71	23.31	6.32	15.65	2.61	16.99	3.20	4.32	7.81	3.22	12.07
5.75	16.71	23.32	6.32	15.97	2.61	16.99	3.20	4.32	7.82	3.22	12.07
6.08	16.71	23.32	6.32	16.14	2.61	16.99	3.20	4.32	7.82	3.22	12.08
6.42	16.71	23.31	6.32	16.45	2.61	16.98	3.20	4.32	7.81	3.22	12.08
6.75	16.71	23.32	6.32	16.75	2.61	16.98	3.20	4.32	7.82	3.22	12.07
7.08	16.71	23.32	6.32	17.03	2.61	16.98	3.20	4.32	7.81	3.22	12.08
7.42	16.71	23.32	6.32	17.25	2.61	16.98	3.20	4.32	7.82	3.22	12.08
7.75	16.71	23.32	6.32	17.54	2.61	16.98	3.20	4.32	7.82	3.22	12.08
8.08	16.71	23.31	6.32	17.78	2.61	16.98	3.20	4.32	7.82	3.22	12.08
8.42	16.70	23.31	6.32	18.09	2.61	16.98	3.21	4.32	7.81	3.22	12.08
8.75	16.70	23.31	6.32	18.24	2.61	16.98	3.21	4.32	7.81	3.22	12.08
9.08	16.71	23.31	6.32	18.52	2.61	16.98	3.20	4.31	7.82	3.22	12.07
9.42	16.71	23.31	6.32	18.77	2.61	16.98	3.20	4.32	7.81	3.22	12.07
9.75	16.71	23.31	6.32	18.91	2.61	16.99	3.21	4.32	7.81	3.22	12.08
10.08	16.71	23.32	6.33	19.10	2.61	16.99	3.21	4.32	7.82	3.23	12.08
12.10	16.74	23.34	6.36	20.27	2.61	16.99	3.23	4.34	7.83	3.24	12.10
14.10	16.73	23.33	6.34	21.16	2.64	16.99	3.23	4.34	7.82	3.23	12.08
16.10	16.73	23.33	6.34	21.88	2.64	16.99	3.23	4.34	7.82	3.23	12.09
18.10	16.74	23.34	6.36	22.42	2.64	16.99	3.24	4.34	7.83	3.24	12.09
20.10	16.71	23.31	6.31	22.97	2.64	16.99	3.22	4.33	7.82	3.22	12.08
22.10	16.69	23.29	6.29	23.41	2.61	16.98	3.19	4.30	7.82	3.22	12.07
24.18	16.70	23.30	6.31	23.85	2.64	16.98	3.21	4.33	7.83	3.22	12.08
26.18	16.71	23.31	6.32	24.21	2.64	16.98	3.22	4.33	7.83	3.22	12.09
28.18	16.71	23.31	6.32	24.53	2.64	16.98	3.21	4.32	7.83	3.22	12.08
30.18	16.70	23.30	6.30	24.79	2.64	16.97	3.21	4.32	7.83	3.22	12.07
32.18	16.71	23.31	6.32	25.14	2.64	16.97	3.22	4.33	7.83	3.22	12.08
34.18	16.70	23.30	6.31	25.27	2.64	16.97	3.22	4.33	7.83	3.22	12.08
36.18	16.71	23.31	6.32	26.64	2.64	16.97	3.23	4.34	7.84	3.22	12.09
38.18	16.71	23.31	6.32	29.64	2.64	16.97	3.22	4.34	7.84	3.22	12.08
40.18	16.69	23.29	6.30	32.03	2.64	16.97	3.21	4.32	7.84	3.22	12.08
42.18	16.69	23.29	6.30	31.20	2.67	16.97	3.21	4.33	7.84	3.21	12.08
44.18	16.69	23.29	6.31	29.81	2.64	16.97	3.21	4.32	7.84	3.22	12.08
46.18	16.70	23.30	6.31	28.61	2.67	16.97	3.21	4.33	7.84	3.22	12.08
48.18	16.71	23.30	6.31	28.44	2.67	16.96	3.22	4.33	7.84	3.22	12.09
50.18	16.69	23.29	6.31	28.35	2.67	16.97	3.21	4.32	7.84	3.21	12.08
52.18	16.69	23.29	6.31	28.34	2.67	16.96	3.23	4.34	7.84	3.21	12.08
54.18	16.70	23.29	6.31	28.28	2.67	16.96	3.24	4.35	7.85	3.22	12.11
56.18	16.75	23.33	6.37	28.29	2.70	16.97	3.25	4.36	7.86	3.23	12.12
58.18	16.74	23.33	6.36	29.65	2.70	16.97	3.21	4.33	7.85	3.22	12.09
60.18	16.71	23.30	6.31	30.32	2.70	16.96	[illegible].22	4.33	7.85	3.21	12.09
62.18	16.69	23.29	6.30	29.87	2.70	16.96	3.22	4.34	7.85	3.21	12.07
64.18	16.70	23.29	6.30	29.81	2.70	16.96	3.21	4.33	7.86	3.22	12.10
66.18	16.70	23.29	6.30	30.28	2.70	16.96	3.21	4.33	7.86	3.22	12.09
68.18	16.72	23.31	6.33	30.58	2.73	16.96	3.23	4.34	7.87	3.22	12.10
70.18	16.70	23.29	6.30	30.90	2.73	16.96	3.22	4.34	7.86	3.22	12.08
72.18	16.73	23.31	6.34	31.05	2.73	16.96	3.23	4.35	7.87	3.22	12.11
74.18	16.71	23.29	6.32	31.13	2.73	16.96	3.22	4.34	7.87	3.22	12.10
76.45	16.71	23.29	6.31	31.36	2.73	16.95	3.22	4.34	7.87	3.22	12.09
78.23	16.71	23.29	6.32	31.44	2.73	16.95	3.22	4.34	7.88	3.22	12.09
80.10	16.71	23.29	6.32	31.54	2.76	16.95	3.23	4.34	7.88	3.22	12.09
82.24	16.71	23.29	6.32	31.64	2.76	16.95	3.22	[illegible]	7.88	3.22	12.08
84.24	16.73	23.31	6.34	31.74	2.76	16.95	[illegible]	[illegible]	7.88	3.22	12.11

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LONG TERM PUMP TEST--DRAWDOWN DATA (CONTINUED)

Elapsed time (minutes)	WELL NUMBER 4-S	4-I	4-D	5-S	5-I	5-D	6-S	6-I	8-S	8-I	MUS-7
86.10	16.71	23.29	6.32	31.84	2.76	16.95	3.23	4.35	7.88	3.22	12.09
88.12	16.72	23.30	6.33	31.93	2.78	16.95	3.23	4.35	7.89	3.22	12.10
90.12	16.70	23.29	6.31	31.93	2.78	16.95	3.22	4.34	7.88	3.22	12.09
92.12	16.73	23.31	6.34	32.03	2.78	16.95	3.23	4.35	7.89	3.23	12.10
94.12	16.72	23.30	6.33	32.04	2.78	16.95	3.19	4.32	7.88	3.22	12.10
96.12	16.72	23.30	6.32	32.13	2.81	16.95	3.22	4.34	7.89	3.22	12.09
98.12	16.71	23.29	6.31	32.22	2.81	16.95	3.22	4.34	7.89	3.23	12.10
100.12	16.71	23.29	6.32	32.26	2.81	16.95	3.22	4.35	7.90	3.23	12.10
120.21	16.71	23.28	6.32	32.62	2.87	16.94	3.23	4.35	7.91	3.23	12.11
140.27	16.72	23.28	6.33	32.93	2.93	16.93	3.19	4.34	7.93	3.23	12.10
160.23	16.71	23.27	6.31	33.28	2.99	16.93	3.21	4.33	7.93	3.24	12.10
180.23	16.71	23.27	6.31	33.41	3.05	16.91	3.22	4.34	7.95	3.25	12.11
200.18	16.71	23.26	6.31	33.46	3.08	16.90	3.22	4.34	7.96	3.26	12.10
220.18	16.72	23.26	6.32	33.51	3.13	16.90	3.22	4.34	7.97	3.27	12.11
240.30	16.72	23.25	6.32	33.56	3.16	16.89	3.23	4.37	8.02	3.29	11.95
260.30	16.72	23.25	6.32	33.78	3.22	16.88	3.23	4.37	8.02	3.31	12.03
280.30	16.73	23.25	6.32	33.94	3.25	16.87	3.23	4.37	8.03	3.31	12.07
300.25	16.72	23.23	6.30	33.94	3.28	16.87	3.22	4.37	8.04	3.33	12.10
320.25	16.73	23.23	6.32	33.98	3.31	16.86	3.24	4.38	8.05	3.33	12.12
340.22	16.73	23.23	6.33	34.01	3.34	16.85	3.23	4.38	8.05	3.35	12.15
360.18	16.74	23.23	6.32	34.06	3.37	16.84	3.24	4.39	8.06	3.35	12.18
380.18	16.74	23.22	6.32	34.17	3.37	16.84	3.21	4.38	8.05	3.36	12.19
400.25	16.73	23.21	6.31	34.01	3.37	16.83	3.10	4.35	8.05	3.37	12.20
420.23	16.75	23.21	6.32	34.20	3.40	16.82	3.15	4.34	8.06	3.38	12.21
440.33	16.74	23.20	6.31	34.30	3.43	16.81	3.26	4.38	8.07	3.39	12.22
460.33	16.73	23.19	6.30	34.32	3.45	16.81	3.23	4.39	8.08	3.40	12.23
480.33	16.74	23.19	6.29	34.49	3.48	16.80	3.27	4.41	8.08	3.41	12.23
500.30	16.74	23.18	6.29	34.49	3.54	16.79	3.29	4.44	8.08	3.42	12.23
520.60	16.74	23.18	6.29	33.78	3.54	16.79	3.26	4.43	8.09	3.43	12.23
540.28	16.75	23.18	6.29	34.43	3.57	16.78	3.29	4.46	8.10	3.44	12.23
560.28	16.74	23.16	6.28	34.52	3.60	16.77	3.30	4.47	8.10	3.44	12.23
580.22	16.74	23.16	6.28	34.64	3.60	16.77	3.30	4.48	8.10	3.45	12.23
600.22	16.74	23.16	6.28	34.59	3.63	16.76	3.27	4.49	8.10	3.46	12.23
620.18	16.74	23.15	6.27	34.72	3.63	16.75	3.29	4.49	8.10	3.47	12.23
640.18	16.75	23.14	6.27	34.71	3.66	16.74	3.31	4.51	8.10	3.48	12.24
660.20	16.75	23.14	6.27	34.64	3.66	16.73	3.29	4.51	8.11	3.48	12.23
680.23	16.75	23.13	6.26	34.75	3.66	16.73	3.31	4.54	8.11	3.49	12.23
700.23	16.75	23.12	6.26	34.94	3.66	16.72	3.26	4.52	8.11	3.50	12.24
720.30	16.75	23.12	6.25	34.90	3.72	16.71	3.30	4.53	8.11	3.50	12.24
740.20	16.75	23.12	6.26	35.24	3.72	16.70	3.31	4.54	8.12	3.51	12.24
760.28	16.76	23.11	6.26	34.71	3.75	16.70	3.30	4.55	8.13	3.52	12.22
780.28	16.75	23.10	6.25	35.00	3.78	16.69	3.31	4.56	8.14	3.53	12.22
800.18	16.76	23.10	6.24	34.93	3.78	16.68	3.30	4.55	8.13	3.52	12.08
820.18	16.76	23.09	6.24	35.14	3.80	16.68	3.32	4.56	8.14	3.53	12.08
840.25	16.77	23.09	6.25	35.11	3.80	16.67	3.33	4.57	8.15	3.54	12.09
860.25	16.78	23.09	6.26	35.17	3.80	16.66	3.27	4.58	8.16	3.56	12.10
880.25	16.78	23.09	6.25	35.24	3.83	16.66	3.33	4.59	8.16	3.56	12.07
900.22	16.77	23.07	6.25	35.26	3.86	16.65	3.34	4.60	8.16	3.56	12.05
920.22	16.78	23.07	6.25	35.27	3.83	16.65	3.28	4.59	8.16	3.56	12.07
940.22	16.78	23.06	6.25	35.33	3.86	16.64	3.34	4.60	8.17	3.57	12.08
960.22	16.77	23.06	6.24	35.14	3.89	16.64	3.35	4.61	8.17	3.57	12.06
980.22	16.78	23.06	6.25	35.10	3.89	16.63	3.36	4.62	8.17	3.58	12.07
1060.10	16.81	23.05	6.27	29.64	3.95	16.62	3.38	4.66	8.19	3.61	12.06
1120.10	16.76	22.99	6.21	29.51	3.98	16.59	3.37	4.68	8.18	3.62	12.06
1180.10	16.79	23.00	6.25	34.25	3.98	16.58	3.39	4.72	8.18	3.63	12.06
1240.20	16.77	22.97	6.23	34.36	4.01	16.55	3.35	4.72	8.18	3.63	12.08
1300.10	16.79	22.97	6.25	34.52	4.07	16.53	3.42	4.76	8.18	3.65	12.07
1360.10	16.79	22.95	6.25	34.58	4.10	16.51	3.42	4.78	8.19	3.66	12.07
1420.20	16.80	22.94	6.26	34.61	4.10	16.49	3.42	4.80	8.19	3.68	12.05
1480.20	16.80	22.92	6.27	34.56	4.15	16.47	3.44	4.81	8.21	3.68	12.07
1540.20	16.80	22.91	6.27	34.61	4.15	16.44	3.45	4.83	8.20	3.69	12.07
1600.40	16.80	22.89	6.27	34.71	4.18	16.42	3.45	4.84	8.19	3.69	12.10
1660.20	16.80	22.87	6.27	34.39	4.18	16.40	3.46	4.83	8.20	3.69	12.08
1720.10	16.81	22.86	6.29	35.23	4.21	16.38	3.44	4.84	8.21	3.69	12.22
1780.20	16.82	22.85	6.29	35.30	4.24	16.35	3.47	4.85	8.20	3.69	12.23
1840.20	16.81	22.83	6.27	35.27	4.24	16.33	3.44	4.84	8.21	3.70	12.23
1900.10	16.82	22.82	6.26	35.26	4.27	16.31	3.49	4.85	8.22	3.70	12.23
1960.10	16.82	22.80	6.25	35.88	4.27	16.28	3.41	4.84	8.21	3.70	12.23
2020.20	16.82	22.79	6.24	36.13	4.33	16.26	3.51	4.87	8.23	3.71	12.22
2080.20	16.82	22.77	6.24	36.07	4.36	16.24	3.51	4.90	8.22	3.71	12.23
2140.10	16.82	22.76	6.23	36.14	4.39	16.22	3.52	4.91	8.22	3.71	12.23
2200.10	16.83	22.75	6.23	36.50	4.42	16.20	3.54	4.92	8.23	3.72	12.21
2260.20	16.83	22.73	6.22	36.43	4.45	16.18	3.53	4.92	8.22	3.71	12.06
2320.20	16.84	22.72	6.22	36.48	4.47	16.15	3.55	4.94	8.23	3.72	12.07
2380.10	16.84	22.70	6.22	36.49	4.50	16.13	3.56	4.93	8.22	3.73	12.07

AR300896

The ERM Group

LONG TERM PUMP TEST--DRAWDOWN DATA (CONTINUED)

Elapsed time (minutes)	WELL NUMBER 4-S	4-I	4-D	5-S	5-I	5-D	6-S	6-I	8-S	8-I	MUS-7
2440.10	16.84	22.69	6.23	36.50	4.53	16.11	3.60	4.96	8.23	3.74	12.08
2500.10	16.85	22.68	6.23	36.56	4.50	16.09	3.57	4.97	8.24	3.75	12.19
2560.30	16.85	22.66	6.23	36.82	4.56	16.08	3.61	4.99	8.25	3.76	12.19
2620.20	16.85	22.66	6.24	36.87	4.59	16.05	3.62	5.03	8.26	3.77	12.18
2680.20	16.85	22.64	6.24	36.97	4.62	16.04	3.62	5.05	8.25	3.77	12.18
2740.20	16.84	22.62	6.23	36.95	4.65	16.01	3.63	5.07	8.24	3.77	12.19
2800.20	16.87	22.62	6.25	36.91	4.68	16.00	3.66	5.10	8.26	3.79	12.21
2860.20	16.86	22.60	6.24	36.65	4.65	15.97	3.63	5.08	8.24	3.78	12.19
2920.10	16.86	22.59	6.25	36.59	4.71	15.96	3.66	5.10	8.25	3.79	12.20
2980.30	16.85	22.57	6.24	36.60	4.74	15.93	3.66	5.11	8.25	3.79	12.19
3040.20	16.86	22.55	6.23	36.68	4.74	15.91	3.68	5.12	8.25	3.79	12.20
3100.10	16.86	22.54	6.23	36.40	4.77	15.89	3.68	5.13	8.25	3.79	12.19
3160.10	16.86	22.53	6.24	36.59	4.77	15.86	3.70	5.14	8.26	3.79	12.23
3220.10	16.86	22.52	6.24	36.55	4.77	15.84	3.69	5.13	8.25	3.79	12.22
3280.20	16.87	22.50	6.24	36.60	4.79	15.82	3.71	5.13	8.26	3.79	12.22
3340.10	16.87	22.49	6.23	37.11	4.79	15.80	3.72	5.14	8.26	3.79	12.23
3400.20	16.87	22.48	6.23	37.59	4.82	15.78	3.69	5.14	8.26	3.78	12.22
3460.20	16.87	22.46	6.23	37.47	4.85	15.76	3.74	5.15	8.25	3.78	12.23
3520.20	16.87	22.45	6.22	37.32	4.85	15.74	3.74	5.15	8.25	3.78	12.23
3580.10	16.87	22.44	6.22	37.81	4.88	15.72	3.75	5.16	8.25	3.79	12.22
3640.10	16.87	22.42	6.23	37.63	4.91	15.70	3.77	5.18	8.25	3.79	12.21
3700.10	16.88	22.41	6.22	37.63	4.94	15.68	3.78	5.18	8.25	3.79	12.12
3760.20	16.88	22.40	6.22	37.89	4.97	15.66	3.83	5.20	8.25	3.79	12.09
3820.20	16.89	22.39	6.23	37.97	5.00	15.65	3.83	5.22	8.25	3.80	12.08
3880.20	16.89	22.38	6.24	37.85	5.00	15.63	3.82	5.22	8.25	3.80	12.09
3940.20	16.89	22.36	6.24	37.92	5.03	15.61	3.83	5.24	8.25	3.81	12.09
4000.20	16.92	22.38	6.29	38.17	5.06	15.61	3.85	5.29	8.27	3.83	12.18
4060.10	16.91	22.36	6.27	38.65	5.06	15.58	3.85	5.29	8.25	3.81	12.16
4120.20	16.90	22.33	6.27	38.40	5.09	15.57	3.86	5.30	8.25	3.81	12.18
4180.20	16.89	22.32	6.26	38.56	5.12	15.54	3.87	5.31	8.24	3.81	12.19
4240.20	16.87	22.28	6.24	38.55	5.12	15.52	3.86	5.31	8.22	3.79	12.18
4300.20	16.88	22.28	6.25	38.55	5.12	15.50	3.83	5.31	8.23	3.80	12.20
4360.10	16.88	22.26	6.25	38.92	5.12	15.48	3.86	5.31	8.23	3.80	12.20
4420.10	16.88	22.25	6.25	38.66	5.17	15.46	3.91	5.34	8.22	3.81	12.21
4480.10	16.88	22.24	6.26	37.24	5.17	15.43	3.91	5.35	8.24	3.81	12.22
4540.20	16.89	22.23	6.26	37.39	5.20	15.41	3.92	5.36	8.22	3.80	12.23
4600.20	16.89	22.21	6.28	37.02	5.17	15.38	3.88	5.33	8.23	3.81	12.26
4660.20	16.90	22.21	6.29	38.08	5.23	15.36	3.95	5.36	8.25	3.82	12.27
4720.20	16.90	22.20	6.30	37.60	5.23	15.34	3.96	5.36	8.25	3.82	12.22
4780.10	16.89	22.18	6.26	38.36	5.23	15.32	3.94	5.37	8.25	3.81	12.03
4840.10	16.86	22.17	6.26	38.21	5.26	15.30	3.96	5.38	8.25	3.81	12.01
4900.20	16.84	22.16	6.25	38.17	5.26	15.28	3.96	5.37	8.25	3.80	12.06
4960.10	16.80	22.18	6.26	37.74	5.26	15.26	3.96	5.38	8.25	3.79	12.07
5020.10	16.80	22.13	6.25	38.11	5.29	15.24	3.97	5.38	8.25	3.79	12.07
5080.30	16.76	22.12	6.24	37.82	5.32	15.23	3.99	5.40	8.25	3.80	12.05
5140.10	16.84	22.11	6.25	38.23	5.35	15.21	4.01	5.41	8.26	3.80	12.05
5200.10	17.03	22.10	6.25	38.52	5.38	15.19	4.02	5.43	8.26	3.81	12.05
5260.20	17.00	22.09	6.26	38.42	5.41	15.18	4.03	5.44	8.27	3.82	12.04
5320.10	16.93	22.09	6.27	37.11	5.41	15.18	4.03	5.45	8.27	3.84	12.06
5380.10	16.94	22.09	6.28	37.42	5.44	15.17	4.04	5.48	8.28	3.84	12.08
5440.20	16.87	22.02	6.20	37.84	5.44	15.15	4.07	5.47	8.26	3.81	12.05
5500.10	16.97	22.09	6.33	38.19	5.46	15.15	4.13	5.54	8.28	3.84	12.08
5560.10	16.96	22.06	6.32	37.91	5.49	15.14	4.14	5.56	8.29	3.84	12.11
5620.10	16.84	21.95	6.17	38.26	5.46	15.09	4.02	5.45	8.24	3.79	12.05
5680.10	16.95	22.02	6.31	38.43	5.52	15.09	4.14	5.55	8.27	3.83	12.13
5740.10	16.84	21.93	6.19	38.42	5.49	15.04	4.06	5.48	8.23	3.79	12.07
5800.10	16.93	21.99	6.30	38.45	5.55	15.05	4.13	5.54	8.26	3.82	12.16
5860.10	16.91	21.95	6.28	38.29	5.55	15.02	4.13	5.54	8.26	3.82	12.12
5920.20	16.90	21.93	6.27	39.71	5.55	15.00	4.14	5.55	8.26	3.81	12.14
5980.10	16.91	21.93	6.29	39.55	5.58	14.97	4.15	5.55	8.26	3.81	12.17
6040.20	16.93	21.93	6.32	40.46	5.61	14.95	4.16	5.57	8.29	3.82	12.25
6100.20	16.93	21.92	6.33	40.44	5.61	14.93	4.16	5.57	8.29	3.82	12.26
6160.20	16.93	21.91	6.33	40.62	5.64	14.91	4.16	5.58	8.29	3.82	12.26
6220.20	16.93	21.89	6.33	36.60	5.67	14.89	4.18	5.58	8.29	3.81	12.25
6280.10	16.93	21.88	6.34	36.24	5.67	14.87	4.18	5.58	8.29	3.80	12.25
6340.20	16.93	21.87	6.34	36.16	5.64	14.85	4.19	5.59	8.29	3.79	12.25
6400.20	16.93	21.86	6.34	36.03	5.67	14.83	4.20	5.59	8.29	3.79	12.23
6460.20	16.94	21.85	6.34	36.13	5.67	14.81	4.20	5.60	8.28	3.78	12.24
6520.20	16.94	21.84	6.34	36.23	5.67	14.80	4.21	5.60	8.28	3.77	12.24
6580.10	16.94	21.83	6.34	36.32	5.70	14.78	4.21	5.61	8.30	3.77	12.24
6640.10	16.95	21.82	6.36	37.01	5.73	14.76	4.23	5.62	8.31	3.77	12.21
6700.20	16.96	21.82	6.37	40.02	5.73	14.74	4.23	5.64	8.32	3.78	12.20
6760.20	16.97	21.82	6.38	40.04	5.76	14.75	4.24	5.67	8.33	3.79	12.16
6820.20	16.98	21.81	6.40	40.07	5.79	14.73	4.25	5.68	8.34	3.79	12.17
6880.40	16.95	21.77	6.36	40.36	5.79	14.72	4.25	5.68	8.34	3.80	12.16
6940.10	16.98	21.79	6.41	40.21	5.76	14.71	4.22	5.62	8.33	3.79	12.17
7000.20	17.01	21.80	6.46	40.30	5.87	14.70	4.28	5.67	8.35	3.78	12.20

The ERM Group

LONG TERM PUMP TEST--DRAWDOWN DATA (CONTINUED)

Elapsed time (minutes)	WELL NUMBER 4-S	4-I	4-D	5-S	5-I	5-D	6-S	6-I	8-S	8-I	MUS-7
7060.20	16.87	21.68	6.31	40.36	5.84	14.65	4.26	5.60	8.33	3.74	12.17
7120.10	16.87	21.66	6.30	39.72	5.81	14.62	4.06	5.57	8.32	3.73	12.16
7180.10	16.86	21.64	6.29	39.83	5.87	14.61	4.26	5.65	8.31	3.74	12.21
7240.10	16.96	21.70	6.45	40.39	5.90	14.61	4.32	5.73	8.32	3.77	12.28
7300.20	16.96	21.69	6.46	40.53	5.90	14.59	4.29	5.72	8.33	3.77	12.29
7360.10	16.95	21.67	6.47	40.51	5.93	14.57	4.32	5.74	8.34	3.78	12.25
7420.10	16.96	21.67	6.48	40.70	5.93	14.54	4.32	5.75	8.34	3.78	12.28
7480.10	16.96	21.66	6.51	40.50	5.96	14.52	4.33	5.77	8.37	3.80	12.35
7540.10	16.99	21.66	6.55	40.50	5.99	14.50	4.35	5.78	8.38	3.81	12.35
7600.10	16.97	21.64	6.54	40.62	5.99	14.48	4.33	5.77	8.39	3.81	12.36
7660.20	16.97	21.63	6.54	40.79	6.02	14.46	4.35	5.78	8.39	3.81	12.37
7720.20	16.98	21.61	6.55	40.81	6.02	14.44	4.36	5.78	8.39	3.80	12.36
7780.20	16.98	21.61	6.56	40.65	6.02	14.42	4.37	5.78	8.39	3.80	12.36
7840.10	16.98	21.59	6.57	40.11	6.05	14.40	4.36	5.79	8.39	3.79	12.35
7900.10	16.99	21.59	6.57	40.14	6.05	14.39	4.37	5.79	8.40	3.79	12.35
7960.10	16.98	21.57	6.57	40.17	6.05	14.37	4.37	5.79	8.40	3.79	12.35
8020.10	17.00	21.57	6.59	40.01	6.08	14.35	4.37	5.79	8.40	3.79	12.28
8080.70	17.00	21.56	6.59	40.12	6.11	14.33	4.39	5.80	8.41	3.80	12.29
8140.20	17.01	21.55	6.60	40.24	6.13	14.32	4.39	5.81	8.42	3.81	12.28
8200.20	17.02	21.55	6.62	40.15	6.11	14.33	4.30	5.77	8.41	3.83	12.28
8260.20	17.04	21.55	6.66	40.27	6.19	14.32	4.45	5.85	8.41	3.83	12.30
8320.20	16.99	21.50	6.61	40.50	6.19	14.30	4.45	5.88	8.40	3.81	12.30
8380.20	17.05	21.53	6.70	40.14	6.22	14.29	4.55	5.95	8.40	3.84	12.33
8440.20	17.02	21.50	6.68	41.34	6.22	14.28	4.47	5.87	8.41	3.82	12.38
8500.20	17.02	21.49	6.70	41.49	6.22	14.26	4.45	5.86	8.39	3.80	12.37
8560.20	17.07	21.52	6.75	41.51	6.22	14.24	4.48	5.87	8.39	3.81	12.38
8620.20	17.05	21.49	6.73	40.66	6.22	14.22	4.46	5.87	8.38	3.80	12.37
8680.10	17.01	21.45	6.67	40.40	6.19	14.20	4.47	5.88	8.39	3.79	12.37
8740.10	17.00	21.43	6.66	40.40	6.22	14.17	4.47	5.90	8.41	3.79	12.37
8800.20	17.00	21.42	6.66	40.36	6.22	14.15	4.51	5.91	8.42	3.79	12.39
8860.10	17.02	21.41	6.68	39.76	6.25	14.13	4.45	5.89	8.43	3.80	12.34
8920.10	17.02	21.40	6.69	40.07	6.28	14.11	4.51	5.92	8.44	3.82	12.44
8980.10	17.02	21.39	6.69	40.50	6.31	14.09	4.53	5.94	8.45	3.83	12.45
9040.10	17.03	21.39	6.70	40.51	6.31	14.08	4.53	5.95	8.45	3.83	12.46
9100.10	17.03	21.38	6.71	40.63	6.34	14.05	4.50	5.95	8.46	3.83	12.45
9160.20	17.03	21.36	6.69	40.63	6.31	14.04	4.52	5.96	8.46	3.84	12.45
9220.20	17.03	21.36	6.70	40.83	6.34	14.02	4.54	5.97	8.46	3.84	12.47
9280.20	17.03	21.35	6.69	40.98	6.34	14.02	4.49	5.97	8.46	3.84	12.46
9340.10	17.03	21.34	6.68	41.23	6.34	13.98	4.54	5.96	8.47	3.83	12.47
9400.10	17.03	21.32	6.67	40.79	6.37	13.97	4.54	5.96	8.47	3.83	12.46
9460.10	17.04	21.31	6.66	41.30	6.37	13.95	4.57	5.96	8.47	3.83	12.32
9520.10	17.04	21.30	6.64	41.11	6.40	13.93	4.50	6.00	8.49	3.85	12.15
9580.20	17.07	21.29	6.65	40.81	6.43	13.91	4.58	6.00	8.50	3.86	12.10
9640.10	17.12	21.28	6.66	40.98	6.46	13.89	4.60	6.02	8.49	3.87	12.13
9700.10	17.13	21.27	6.67	41.08	6.46	13.88	4.60	6.03	8.50	3.90	12.10
9760.10	17.09	21.25	6.66	40.95	6.48	13.86	4.59	6.04	8.50	3.85	12.10
9820.10	17.07	21.25	6.67	40.81	6.48	13.84	4.59	6.04	8.49	3.87	12.09
9880.20	17.05	21.24	6.67	40.40	6.48	13.83	4.58	6.04	8.48	3.85	12.09
9940.20	17.16	21.23	6.68	40.36	6.48	13.82	4.58	6.05	8.50	3.83	12.09
10000.00	17.06	21.23	6.68	40.18	6.46	13.80	4.58	6.05	8.48	3.85	12.11
10201.00	17.02	21.18	6.65	40.50	6.48	13.74	4.58	6.03	8.49	3.82	12.07
10401.00	16.97	21.15	6.64	40.56	6.54	13.68	4.58	6.06	8.53	3.89	12.15
10601.00	17.00	21.12	6.63	40.08	6.54	13.63	4.60	6.08	8.52	3.89	12.13
10801.00	17.10	21.08	6.61	40.62	6.51	13.57	4.51	6.01	8.51	3.87	12.13
11001.00	17.13	21.05	6.62	40.82	6.60	13.53	4.63	6.09	8.52	3.87	12.08
11189.00	17.07	21.02	6.63	41.23	6.66	13.50	4.65	6.14	8.51	3.87	12.19

The ERM Group

LONG TERM PUMP TEST --RECOVERY DATA (WELL 5-S PUMPING WELL)

Elapsed time (minutes)	WELL NUMBER 4-S	4-I	4-D	5-S	5-I	5-D	6-S	6-I	8-S	8-I	MUS-7
11169.00	17.07	21.02	6.63	41.23	6.66	13.50	4.65	6.14	0.51	3.87	12.19
PUMP OFF											
0.26	17.07	21.02	6.63	39.02	6.66	13.50	4.65	6.14	0.51	3.88	12.18
0.34	17.07	21.02	6.63	38.52	6.66	13.50	4.65	6.14	0.51	3.88	12.16
0.42	17.07	21.02	6.63	38.10	6.66	13.50	4.65	6.14	0.51	3.87	12.17
0.51	17.07	21.02	6.63	37.74	6.66	13.50	4.65	6.14	0.51	3.87	12.17
0.59	17.07	21.02	6.63	37.34	6.66	13.50	4.65	6.14	0.51	3.88	12.19
0.67	17.07	21.02	6.63	36.91	6.66	13.50	4.65	6.14	0.51	3.87	12.15
0.76	17.07	21.02	6.63	36.48	6.66	13.50	4.65	6.14	0.51	3.88	12.17
0.84	17.07	21.02	6.63	36.06	6.66	13.50	4.65	6.14	0.51	3.88	12.17
0.92	17.07	21.02	6.63	35.65	6.66	13.50	4.65	6.14	0.51	3.88	12.18
1.01	17.07	21.02	6.63	35.24	6.66	13.50	4.65	6.14	0.51	3.88	12.18
1.42	17.07	21.02	6.62	33.41	6.66	13.50	4.65	6.14	0.51	3.88	12.19
1.75	17.08	21.02	6.63	32.03	6.66	13.50	4.65	6.14	0.51	3.88	12.18
2.08	17.08	21.03	6.63	30.76	6.66	13.50	4.65	6.14	0.51	3.88	12.19
2.42	17.08	21.02	6.64	29.58	6.66	13.50	4.65	6.14	0.51	3.88	12.18
2.75	17.08	21.03	6.64	28.50	6.66	13.50	4.65	6.15	0.51	3.88	12.16
3.08	17.08	21.03	6.63	27.48	6.66	13.50	4.65	6.15	0.51	3.88	12.17
3.42	17.08	21.03	6.64	26.56	6.66	13.50	4.66	6.15	0.51	3.88	12.18
3.75	17.08	21.03	6.64	25.69	6.66	13.50	4.66	6.15	0.51	3.88	12.19
4.08	17.08	21.03	6.65	24.88	6.66	13.50	4.66	6.15	0.51	3.88	12.18
4.42	17.08	21.03	6.64	24.12	6.66	13.50	4.66	6.15	0.52	3.88	12.20
4.75	17.09	21.03	6.65	23.41	6.66	13.50	4.66	6.15	0.51	3.88	12.18
5.08	17.09	21.04	6.65	22.75	6.66	13.50	4.66	6.15	0.52	3.88	12.16
5.42	17.09	21.04	6.65	22.13	6.66	13.50	4.66	6.15	0.52	3.88	12.18
5.75	17.09	21.04	6.66	21.53	6.66	13.50	4.67	6.16	0.52	3.88	12.20
6.08	17.09	21.04	6.66	20.98	6.66	13.50	4.67	6.16	0.52	3.89	12.16
6.42	17.09	21.04	6.66	20.46	6.66	13.50	4.67	6.17	0.52	3.89	12.21
6.75	17.09	21.04	6.66	19.98	6.66	13.50	4.67	6.16	0.52	3.89	12.20
7.08	17.09	21.04	6.66	19.50	6.66	13.50	4.67	6.16	0.52	3.89	12.20
7.42	17.09	21.04	6.66	19.06	6.66	13.50	4.67	6.16	0.52	3.89	12.17
7.75	17.09	21.04	6.66	18.64	6.66	13.50	4.67	6.16	0.52	3.89	12.19
8.08	17.10	21.05	6.66	18.24	6.66	13.50	4.67	6.16	0.52	3.89	12.18
8.42	17.10	21.05	6.66	17.87	6.66	13.50	4.67	6.16	0.52	3.89	12.19
8.75	17.10	21.05	6.67	17.51	6.66	13.50	4.67	6.16	0.52	3.89	12.19
9.08	17.10	21.05	6.67	17.17	6.66	13.50	4.67	6.16	0.52	3.89	12.20
9.42	17.11	21.05	6.67	16.84	6.66	13.50	4.67	6.16	0.52	3.89	12.20
9.75	17.11	21.05	6.67	16.54	6.66	13.50	4.67	6.17	0.52	3.89	12.20
10.08	17.11	21.05	6.68	16.23	6.66	13.50	4.68	6.17	0.52	3.90	12.20
12.09	17.10	21.05	6.67	14.70	6.66	13.50	4.67	6.17	0.52	3.90	12.20
14.42	17.10	21.05	6.66	13.31	6.66	13.50	4.68	6.17	0.53	3.90	12.20
16.32	17.09	21.03	6.64	12.39	6.66	13.50	4.65	6.15	0.52	3.89	12.19
18.26	17.09	21.04	6.64	11.63	6.66	13.50	4.66	6.16	0.51	3.89	12.17
20.25	17.09	21.03	6.64	10.98	6.66	13.50	4.66	6.16	0.51	3.88	12.18
22.25	17.10	21.04	6.65	10.41	6.66	13.50	4.66	6.16	0.51	3.89	12.19
24.25	17.11	21.05	6.67	9.93	6.66	13.50	4.67	6.17	0.51	3.89	12.20
26.25	17.11	21.05	6.66	9.51	6.66	13.50	4.66	6.17	0.51	3.89	12.20
28.25	17.09	21.04	6.66	9.17	6.66	13.50	4.67	6.17	0.51	3.89	12.21
30.25	17.08	21.02	6.63	8.85	6.66	13.50	4.65	6.15	0.51	3.89	12.20
32.25	17.08	21.02	6.63	8.56	6.66	13.49	4.65	6.16	0.50	3.88	12.18
34.25	17.09	21.03	6.63	8.31	6.66	13.50	4.64	6.15	0.50	3.88	12.19
36.25	17.08	21.02	6.63	8.09	6.66	13.49	4.65	6.16	0.50	3.88	12.20
38.25	17.09	21.03	6.64	7.89	6.63	13.49	4.66	6.16	0.49	3.88	12.19
40.15	17.08	21.02	6.63	7.73	6.63	13.49	4.66	6.17	0.49	3.88	12.18
42.33	17.08	21.02	6.63	7.56	6.63	13.49	4.65	6.16	0.49	3.87	12.17
44.14	17.08	21.02	6.62	7.41	6.63	13.49	4.66	6.16	0.49	3.87	12.19
46.24	17.08	21.02	6.64	7.28	6.63	13.49	4.65	6.16	0.49	3.87	12.19
48.24	17.08	21.02	6.63	7.17	6.63	13.49	4.66	6.17	0.49	3.88	12.19
50.24	17.08	21.02	6.64	7.05	6.63	13.49	4.66	6.17	0.49	3.87	12.21
52.24	17.10	21.04	6.66	6.95	6.60	13.49	4.65	6.17	0.48	3.87	12.20
54.36	17.09	21.02	6.65	6.85	6.60	13.49	4.65	6.17	0.48	3.86	12.21
56.24	17.07	21.01	6.62	6.76	6.60	13.49	4.65	6.16	0.48	3.86	12.18
58.20	17.08	21.02	6.65	6.67	6.60	13.48	4.66	6.17	0.48	3.86	12.18
60.20	17.09	21.03	6.66	6.60	6.60	13.49	4.67	6.18	0.47	3.87	12.22
62.22	17.11	21.04	6.67	6.53	6.57	13.49	4.67	6.18	0.48	3.87	12.21
64.19	17.09	21.03	6.66	6.47	6.60	13.49	4.66	6.17	0.47	3.87	12.21
66.19	17.09	21.02	6.65	6.41	6.57	13.49	4.67	6.18	0.47	3.86	12.17
68.19	17.09	21.02	6.65	6.36	6.57	13.49	4.66	6.17	0.47	3.86	12.21
70.19	17.09	21.02	6.65	6.30	6.57	13.49	4.67	6.18	0.46	3.86	12.21
72.19	17.09	21.02	6.64	6.25	6.57	13.49	4.66	6.17	0.47	3.86	12.20
74.19	17.08	21.02	6.64	6.21	6.57	13.49	4.67	6.18	0.47	3.87	12.21
76.39	17.09	21.03	6.66	6.15	6.54	13.49	4.67	6.19	0.47	3.87	12.22
78.19	17.07	21.01	6.62	6.11	6.54	13.48	4.64	6.16	0.45	3.85	12.20
80.11	17.08	21.01	6.63	6.07	6.54	13.48	4.65	6.17	0.45	3.86	12.20

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LONG TERM PUMP TEST--RECOVERY DATA (CONTINUED)

Elapsed time (minutes)	WELL NUMBER 4-S	4-I	4-D	5-S	5-I	5-D	6-S	6-I	8-S	8-I	MUS-7
82.11	17.07	21.01	6.63	6.02	6.51	13.48	4.65	6.17	0.45	3.86	12.19
84.11	17.09	21.02	6.65	5.99	6.51	13.48	4.66	6.17	0.45	3.85	12.21
86.11	17.10	21.03	6.67	5.95	6.51	13.48	4.66	6.17	0.45	3.86	12.21
88.11	17.08	21.02	6.65	5.92	6.51	13.48	4.66	6.18	0.45	3.86	12.20
90.11	17.09	21.03	6.66	5.89	6.51	13.48	4.66	6.18	0.45	3.86	12.22
92.11	17.10	21.03	6.67	5.86	6.51	13.48	4.67	6.18	0.45	3.86	12.21
94.11	17.12	21.04	6.68	5.83	6.51	13.49	4.69	6.21	0.46	3.87	12.24
96.11	17.13	21.06	6.70	5.82	6.48	13.49	4.69	6.21	0.46	3.87	12.23
98.11	17.12	21.04	6.68	5.79	6.48	13.49	4.69	6.21	0.45	3.87	12.23
100.11	17.10	21.03	6.66	5.76	6.48	13.49	4.67	6.19	0.44	3.85	12.21
120.27	17.08	21.00	6.63	5.53	6.43	13.48	4.68	6.18	0.43	3.83	12.22
140.25	17.09	21.01	6.65	5.39	6.34	13.47	4.68	6.18	0.40	3.82	12.21
160.25	17.11	21.02	6.68	5.27	6.31	13.47	4.68	6.18	0.40	3.83	12.23
180.25	17.06	20.98	6.62	5.17	6.22	13.46	4.65	6.16	0.37	3.80	12.21
200.25	17.06	20.98	6.62	5.10	6.16	13.45	4.65	6.14	0.35	3.77	12.20
220.25	17.12	21.02	6.70	5.04	6.13	13.46	4.66	6.15	0.35	3.76	12.22
240.25	17.13	21.02	6.68	4.98	6.11	13.45	4.64	6.15	0.35	3.72	12.22
260.25	17.06	20.96	6.61	4.91	6.05	13.43	4.61	6.12	0.31	3.71	12.20
280.25	17.06	20.96	6.62	4.86	6.02	13.42	4.60	6.10	0.29	3.72	12.19
300.30	17.07	20.97	6.64	4.82	5.99	13.42	4.61	6.09	0.27	3.73	12.16
320.55	17.10	20.98	6.68	4.79	5.96	13.42	4.62	6.09	0.27	3.72	12.07
340.15	17.06	20.95	6.62	4.76	5.93	13.41	4.58	6.06	0.26	3.68	12.06
360.28	17.12	21.00	6.70	4.72	5.90	13.41	4.62	6.09	0.25	3.70	12.13
380.28	17.07	20.96	6.63	4.72	5.84	13.40	4.54	6.03	0.23	3.67	12.12
400.28	17.07	20.95	6.63	4.68	5.81	13.39	4.56	6.02	0.22	3.64	12.15
420.28	17.07	20.95	6.63	4.63	5.81	13.39	4.56	6.01	0.22	3.63	12.14
440.28	17.08	20.95	6.63	4.60	5.79	13.38	4.56	6.00	0.22	3.61	12.13
460.28	17.08	20.94	6.63	4.57	5.79	13.37	4.54	5.99	0.20	3.59	12.16
480.27	17.08	20.94	6.63	4.56	5.76	13.36	4.54	5.98	0.20	3.58	12.15
500.27	17.08	20.93	6.64	4.44	5.76	13.36	4.50	5.98	0.19	3.57	12.16
520.27	17.08	20.94	6.63	4.52	5.73	13.35	4.52	5.96	0.18	3.56	12.16
540.27	17.08	20.93	6.63	4.50	5.73	13.34	4.52	5.95	0.17	3.54	12.15
560.27	17.08	20.93	6.63	4.47	5.70	13.34	4.51	5.95	0.17	3.53	12.20
580.27	17.09	20.93	6.64	4.44	5.67	13.33	4.49	5.94	0.16	3.52	12.19
600.27	17.08	20.92	6.63	4.44	5.67	13.32	4.49	5.93	0.16	3.50	12.21
620.27	17.08	20.92	6.63	4.43	5.67	13.32	4.49	5.92	0.15	3.49	12.19
640.27	17.08	20.91	6.63	4.42	5.64	13.31	4.49	5.92	0.14	3.47	12.19
660.27	17.09	20.92	6.64	4.39	5.64	13.31	4.49	5.92	0.13	3.47	12.18
680.27	17.09	20.92	6.65	4.37	5.64	13.30	4.48	5.92	0.13	3.46	12.18
700.27	17.09	20.91	6.65	4.36	5.61	13.30	4.47	5.91	0.12	3.44	12.16
720.27	17.09	20.91	6.64	4.36	5.61	13.29	4.44	5.90	0.11	3.43	12.18
740.27	17.09	20.90	6.64	4.34	5.58	13.28	4.45	5.90	0.11	3.42	12.19
760.27	17.09	20.90	6.65	4.31	5.58	13.28	4.45	5.89	0.10	3.41	12.19
780.27	17.09	20.90	6.65	4.30	5.55	13.27	4.43	5.88	0.09	3.40	12.17
800.27	17.09	20.89	6.65	4.29	5.55	13.27	4.43	5.88	0.09	3.39	12.18
820.27	17.09	20.89	6.65	4.27	5.55	13.26	4.42	5.87	0.08	3.38	12.18
840.27	17.08	20.88	6.64	4.27	5.52	13.26	4.40	5.85	0.07	3.37	12.15
860.27	17.09	20.89	6.65	4.24	5.49	13.25	4.40	5.85	0.07	3.36	12.16
880.27	17.09	20.88	6.64	4.24	5.49	13.24	4.37	5.83	0.06	3.34	12.15
900.27	17.09	20.88	6.64	4.24	5.46	13.24	4.39	5.83	0.05	3.33	12.15
920.27	17.09	20.87	6.64	4.21	5.46	13.23	4.38	5.82	0.05	3.32	12.16
940.18	17.09	20.87	6.66	4.21	5.44	13.23	4.38	5.81	0.05	3.31	12.05
960.18	17.09	20.87	6.66	4.21	5.44	13.22	4.35	5.79	0.04	3.30	12.03
980.18	17.09	20.86	6.66	4.17	5.41	13.22	4.35	5.78	0.04	3.29	12.04
1000.20	17.08	20.86	6.66	4.15	5.38	13.21	4.34	5.77	0.02	3.27	12.00
1060.40	16.94	20.85	6.66	4.11	5.35	13.19	4.31	5.73	0.01	3.24	11.97
1120.40	16.90	20.84	6.64	4.07	5.29	13.17	4.26	5.71	7.99	3.20	11.97
1180.40	16.96	20.84	6.64	4.02	5.29	13.16	4.20	5.68	7.95	3.17	11.93
1240.40	17.12	20.82	6.63	3.89	5.26	13.14	4.15	5.67	7.93	3.14	11.96
1300.20	17.10	20.82	6.65	3.89	5.26	13.13	4.11	5.66	7.90	3.11	11.97
1360.20	17.12	20.82	6.68	3.69	5.23	13.12	4.04	5.65	7.87	3.09	12.00
1420.20	17.10	20.80	6.64	3.79	5.20	13.11	4.06	5.63	7.83	3.04	11.96
1480.20	17.15	20.83	6.70	3.75	5.20	13.12	4.04	5.65	7.81	3.02	11.99
1540.20	17.10	20.79	6.67	3.76	5.14	13.11	4.02	5.65	7.78	2.99	12.01
1600.20	17.06	20.74	6.61	3.63	5.09	13.07	3.97	5.59	7.71	2.92	11.94
1660.20	17.17	20.83	6.77	3.62	5.06	13.08	4.03	5.63	7.70	2.88	12.00
1720.30	17.13	20.79	6.71	3.58	5.00	13.06	3.97	5.56	7.65	2.82	11.98
1780.30	17.11	20.76	6.68	3.53	4.94	13.04	3.95	5.52	7.63	2.79	11.97
1840.40	17.08	20.73	6.64	3.49	4.88	13.01	3.89	5.46	7.60	2.73	11.94
1900.40	17.09	20.72	6.64	3.46	4.85	12.99	3.88	5.42	7.59	2.70	11.92
1960.40	17.08	20.70	6.64	3.43	4.82	12.97	3.87	5.39	7.58	2.67	11.94
2020.40	17.08	20.69	6.64	3.21	4.77	12.95	3.80	5.35	7.60	2.65	11.93
2080.40	17.08	20.69	6.64	3.40	4.77	12.92	3.82	5.33	7.62	2.65	11.94
2140.40	17.09	20.68	6.66	3.39	4.77	12.90	3.85	5.33	7.63	2.65	11.93
2200.40	17.08	20.67	6.65	3.39	4.74	12.89	3.83	5.31	7.64	2.65	11.91
2260.40	17.09	20.67	6.66	3.36	4.74	12.87	3.81	5.31	7.66	2.65	11.89
2320.40	17.09	20.66	6.66	3.39	4.71	12.85	3.79	5.27	7.66	2.65	11.91
2380.40	17.08	20.64	6.67	3.33	4.71	12.83	3.82	5.28	7.68	2.65	11.88
2440.40	17.08	20.64	6.68	3.32	4.68	12.82	3.81	5.27	7.69	2.65	11.85
2500.40	17.08	20.63	6.68	3.30	4.65	12.80	3.79	5.27	7.70	2.65	11.86
2560.40	17.08	20.62	6.67	3.29	4.62	12.79	3.79	5.26	7.72	2.65	11.84
2620.40	17.08	20.61	6.67	3.27	4.59	12.77	3.79	5.25	7.73	2.66	11.83
2680.40	17.09	20.61	6.67	3.26	4.59	12.76	3.76	5.24	7.75	2.67	11.82
2686.40	17.09	20.61	6.67	3.26	4.59	12.75	3.77	5.24	7.75	2.67	11.83

AR300900

M

APPENDIX M

FORMULATION OF THE HYDRAULIC GRADIENT REQUIRED TO INDUCE UPWARD MOVEMENT OF DNAPL

Appendix K. Formulation of the Hydraulic Gradient Required to Induce Upward Movement of DNAPL.

Consider a column of DNAPL of length L which exists below the water table in an area of upward hydraulic gradients. The fluid pressures in the water adjacent to the DNAPL column at points A and B are defined by:

$$P_A = \rho_w g (L + h_B + \Delta h)$$

$$P_B = \rho_w g (h_B)$$

$$\Delta P_w = P_A - P_B = \rho_w g (L + h_B + \Delta h - h_B)$$

$$= \rho_w g (L + \Delta h)$$

The fluid pressure in the DNAPL as a result of the presence of the DNAPL is defined by:

$$P_{A'} = \rho_{DNAPL}\, g\, L$$

$$P_{B'} = 0$$

$$\Delta P_{DNAPL} = \rho_{DNAPL}\, g\, L$$

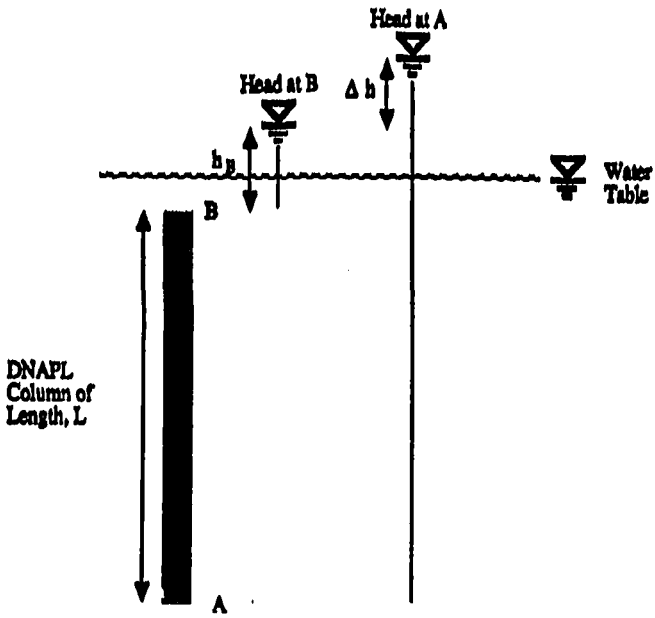
For the upward movement of DNAPL to occur: $\Delta P_w > \Delta P_{DNAPL}$

For: $\Delta P_w = \Delta P_{DNAPL}$

$$\rho_w g (L + \Delta h) = \rho_{DNAPL}\, g\, L$$

$$\rho_w \Delta h = L(\rho_{DNAPL} - \rho_w)$$

$$\frac{\Delta h}{L} = \frac{(\rho_{DNAPL} - \rho_w)}{\rho_w}$$


Head at A
Head at B
Δ h
h_B
Water Table
B
DNAPL Column of Length, L
A

N

AR300905

APPENDIX N

WELL INVENTORY DATA SUMMARY

The ERM Group

WELL INVENTORY
DATA SUMMARY

Well No.	Total Well Depth (feet)	Open Interval (feet)	Well in Use	Well Yield (gpm)	Formation	Date Completed
1	—	—	-	—	Ledger	—
2	400	—	Y	120	—	1946
3	200	—	-	—	Ledger	1979
4	525	—	N	—	—	1930
5	820	—	N	—	—	1930
6	815	—	Y	—	—	—
7	73	—	N	—	Stockton	—
8	571	—	Y	—	Stockton	1946
9	240	—	Y	—	Stockton	—
10	90	—	N	—	Stockton	1939
11	—	—	N	—	Stockton	1940
12	325	—	Y	—	Stockton	1920
13	600	—	Y	40	Stockton	1930
14	140	—	N	—	Conestoga	—
15	165	—	Y	100	Conestoga	1965
16	183	—	N	—	Conestoga	—
17	183	—	-	—	Ledger	1958
18	247	—	Y	—	Conestoga	1960
19	245	—	N	—	Conestoga	—
20	380	—	-	—	Conestoga	—
21	500	—	N	—	Elbrook	—
22	186	—	Y	5	—	—
23	505	—	Y	—	Elbrook	1965
24	400	—	Y	—	Elbrook	—
25	262	—	N	15	Conestoga	1977
26	—	—	-	—	Ledger	—
27	73	—	N	—	Stockton	1926
28	100	—	Y	20	Stockton	1951

The ERM Group

WELL INVENTORY (continued)

Well No.	Total Well Depth (feet)	Open Interval (feet)	Well in Use	Well Yield (gpm)	Formation	Date Completed
29	200	—	Y	—	Ledger	—
30	234	—	N	—	Conestoga	1980
31	—	—	-	—	—	—
32	325	—	N	—	Conestoga	—
33	260	—	N	—	Wissahickon	—
34	120	—	N	—	—	—
35	225	—	-	—	—	—
36	172	—	N	—	Stockton	—
37	151	—	N	—	Stockton	1937
38	250	—	Y	—	Stockton	—
39	205	—	Y	120	Stockton	1931
40	70	—	Y	35	Stockton	1925
41	255	—	Y	—	Stockton	1936
42	100	—	N	40	Stockton	1927
43	125	—	Y	10	—	1956
44	80	—	Y	20	Stockton	1939
45	130	—	N	—	Stockton	1940
46	55	—	N	—	Stockton	1910
47	210	—	Y	—	Stockton	—
48	210	—	-	50	Stockton	—
49	225	—	-	390	Stockton	1936
50	300	—	Y	—	Stockton	1949
51	351	—	Y	—	Stockton	1949
52	300	—	N	—	Stockton	1950
53	382	—	Y	—	Stockton	—
54	372	—	N	120	Stockton	—
55	474	—	Y	120	Stockton	—
56	410	—	N	100	Stockton	—

The ERM Group

WELL INVENTORY (continued)

Well No.	Total Well Depth (feet)	Open Interval (feet)	Well in Use	Well Yield (gpm)	Formation	Date Completed
57	484	—	Y	136	Stockton	—
58	486	—	N	170	Stockton	—
59	401	—	-	170	Stockton	—
60	277	—	-	110	Stockton	—
61	434	—	Y	100	Stockton	—
62	321	—	N	192	Stockton	—
63	605	521	Y	60	—	1974
64	262	54	-	15	—	—
65	117	87	Y	—	—	1972
66	96	59	Y	—	—	1973
67	115	70	Y	20	—	—
68	300	217	Y	5	—	—
69	113	78	Y	60	—	—
70	97	63	Y	10	—	1973
71	485	443	Y	6	—	1972
72	118	78	Y	40	—	1972
73	135	75	Y	15	—	—
74	223	182	Y	30	—	—
75	155	75	Y	20	—	—
76	600	560	Y	150	—	1960
77	595	487	Y	1400	—	1967
78	—	—	Y	—	—	—
79	—	—	Y	—	—	—
80	—	—	Y	—	—	—
81	—	—	Y	—	—	—
82	—	—	Y	—	—	—

The ERM Group

WELL INVENTORY (continued)

Well No.	Total Well Depth (feet)	Open Interval (feet)	Well in Use	Well Yield (gpm)	Formation	Date Completed
83	73	—	Y	7	—	3/75
84	216	—	Y	6	—	9/78
85	317	254	Y	60	—	1/77
86	185	71	Y	3-4	—	7/79
87	140	68	Y	300	—	2/77
88	67	19	Y	300	—	3/73
89	86	24	Y	12	—	7/73
90	103	40	Y	12	—	6/72
91	156	74	Y	15	—	8/72
92	120	32	Y	35	—	3/77
94	140	80	Y	7	—	5/79
95	125	81	Y	3	—	7/71
96	175	63	Y	5	—	8/76
97	223	172	Y	20	—	9/85
98	160	118	Y	20	—	8/85
99	223	183	Y	20	Stockton	3/84
100	88	48	Y	30	—	11/77
101	120	80	Y	25	—	11/77
102	115	74	Y	20	—	11/78
103	92	64	Y	12	—	6/71
104	608	507	Y	2	—	11/75
105	125	87	Y	30	—	8/77
106	225	183	Y	15	—	5/78
107	95	65	Y	6	—	12/75
108	399	367	Y	6	—	1/77
109	116	76	Y	15	—	11/78
110	175	145	Y	18	—	7/75
111	572	545	Dry	0	—	12/77

The ERM Group

WELL INVENTORY (continued)

Well No.	Total Well Depth (feet)	Open Interval (feet)	Well in Use	Well Yield (gpm)	Formation	Date Completed
112	178	99	Y	8	—	9/72
113	140	98	Y	30	—	10/83
114	241	199	Y	15	—	10/83
115	182	142	Y	42	—	8/84
116	139	87	Y	30	—	10/77
117	175	123	Y	20	—	7/83
118	448	408	Y	5.5	—	10/84
119	150	110	Y	60	—	2/74
120	113	91	Y	50	—	3/77
121	198	131	Y	20	—	8/83
122	224	58	Y	100-150	—	1/67
123	601	541	Y	1	—	7/84
124	120	73	Y	40	—	11/83
125	229	84	Y	100	—	5/84
126	162	122	Y	15	—	7/84
127	116	30	Y	30	—	2/80
128	218	88	Y	15	—	2/80
129	135	75	Y	48	—	6/77
130	203	88	Y	20	—	? (77)
131	350	310	Y	3	—	7/81
132	407	350	Y	153	—	6/81
133	200	—	Y	15	—	7/78
134	198	170	Y	15	—	—
135	200	185	Y	1	—	10/79
136	135	95	Y	25	—	—/81
137	180	140	Y	20	—	—/80
138	365	342	Y	9	—	1980
139	320	—	Y	35	—	9/80

The ERM Group

WELL INVENTORY (continued)

Well No.	Total Well Depth (feet)	Open Interval (feet)	Well in Use	Well Yield (gpm)	Formation	Date Completed
140	120-320	—	Y	9	—	—
141	150	90	Y	20	—	8/80
142	343	282	Y	3	—	1/80
143	200	—	Y	22	—	8/81
144	320	260	Y	15	—	10/80
145	260	184	Y	25	—	10/80
146	298	—	Y	18	—	1979
147	150	110	Y	15	—	3/80
148	239	161	Y	15	—	3/82
149	135	88	Y	35	—	3/81
150	216	153	Y	20	—	10/81
151	150	—	Y	20	—	—
152	219	119	Y	90	—	9/81
153	218	153	Y	30	—	2/81
154	157	97	Y	50	—	2/81

AR300913

APPENDIX O

ANALYTICAL RESULTS FOR SAMPLES TAKEN AT THE SCHUYLKILL RIVER INTAKES

keystone water company
AN AMERICAN WATER WORKS SYSTEM COMPANY
NORRISTOWN DISTRICT

NOV 5 1986

November 4, 1986

File 540-383

Mr. George Potera
E.R.M.
999 West Chester Pike
West Chester, PA 19382

Dear Sir:

Enclosed please find organic analysis, south channel, Schuylkill River that you requested on October 31, 1986.

Very truly yours,

KEYSTONE WATER COMPANY
NORRISTOWN DISTRICT.

George C. Christensen

George C. Christensen
Production Supt.

GCC:jlw

Enclosure

AR300915

166 WEST JOHNSON HIGHWAY, NORRISTOWN, PENNSYLVANIA 19404 215-279-8616

CHEMICAL ANALYSIS REPORT

PRIORITY POLLUTANTS
PESTICIDES/ACID EXTRACTABLES
METHOD EPA 625

ANY: KEYSTONE WATER CO.
NORRISTOWN DISTRICT
196 W. JOHNSON HWY.
NORRISTOWN , PA 19401

LAB CERTIFICATION NO. 68-269

cc: G. CHRISTENSEN
cc: R. CROKER
cc:

LE INFORMATION

MPLE ID	TYPE	SAMPLE LOCATION	DATE	TIME	SAMPLER
64377	RAW	INTAKE	08-11-86	10:30AM	L.HOWELL

ICIDES	RESULT (mg/L)	ACID/EXTRACTABLES	RESULT (mg/L)
a BHC	<0.0001	2-CHLOROPHENOL	< 0.010
a BHC (LINDANE)	<0.0001	2-NITROPHENOL	< 0.010
BHC	<0.0001	PHENOL	< 0.010
ACHLOR	<0.0001	2,4-DIMETHYLPHENOL	< 0.010
a BHC	<0.0001	2,4-DICHLOROPHENOL	< 0.010
IN	<0.0001	2,4,6-TRICHLOROPHENOL	< 0.010
ACHLOR EPOXIDE	<0.0001	4-CHLORO-3-METHYLPHENOL	< 0.010
S AN I	<0.0001	PENTACHLOROPHENOL	< 0.010
D	<0.0001	2-METHYL-4,6-DINITROPHENOL	< 0.025
DDE	<0.0001	4-NITROPHENOL	< 0.025
IN	<0.0001	2,4-DINITROPHENOL	< 0.025
IN ALDEHYDE	<0.0001	PCB 1016	< 0.001
SULFAN II	<0.0001	PCB 1221	< 0.001
DDD	<0.0001	PCB 1232	< 0.001
DDT	<0.0001	PCB 1242	< 0.001
SULFAN SULFATE	<0.0001	PCB 1248	< 0.001
RDANE	< 0.001	PCB 1254	< 0.001
PHENE	< 0.001	PCB 1260	< 0.001

MPLE REC'D: 08-12-86 ANALYST: MK MK MK DATE OF ANALYSIS: 10-29-86

DAVID W. COLLINS
DIRECTOR

10-29-86
DATE

ILLE LABORATORY
AM WATER WORKS SERVICE COMPANY, INC.
OUTH ILLINOIS STREET
ILLE, ILLINOIS 62220•(618)235-3600

AR300916

CHEMICAL ANALYSIS REPORT

PRIORITY POLLUTANTS
PURGEABLES
METHOD EPA 624

KEYSTONE WATER CO.
NORRISTOWN DISTRICT
196 W. JOHNSON HWY.
NORRISTOWN , PA 19401

LAB CERTIFICATION NO. 68-269

G. CHRISTENSEN
R. CROKER

FORMATION ID	TYPE	SAMPLE LOCATION	DATE	TIME	SAMPLER
7	RAW	INTAKE	08-11-86	10:30AM	L.HOWELL

	RESULT (mg/L)	COMPOUND	RESULT (mg/L)
HLORIDE	< 0.001	trans-1,3-DICHLOROPROPENE	< 0.001
ROMIDE	< 0.001	TRICHLOROETHYLENE	< 0.001
LORIDE	< 0.001	DIBROMOCHLORMETHANE	< 0.001
NE	< 0.001	cis-1,3-DICHLOROPROPENE	< 0.001
E CHLORIDE	< 0.001	1,1,2-TRICHLOROETHANE	< 0.001
OFLUOROMETHANE	< 0.001	BENZENE	< 0.001
LOROETHYLENE	< 0.001	2-CHLOROETHYLVINYLETHER	< 0.001
L ETHANE	< 0.001	BROMOFORM	< 0.001
RM	< 0.001	TETRACHLOROETHYLENE	< 0.001
2-DICHLOROETHYLENE	< 0.001	1,1,2,2-TETRACHLOROETHANE	< 0.001
LOROETHANE	< 0.001	TOLUENE	< 0.001
ICHLOROETHANE	< 0.001	CHLOROBENZENE	< 0.001
ETRACHLORIDE	< 0.001	ETHYLBENZENE	< 0.001
HLOROMETHANE	< 0.001	ACROLEIN	< 0.001
LOROPROPANE	< 0.001	ACRYLONITRILE	< 0.001
		DICHLORODIFLUOROMETHANE	<0.001

C'D: 08-12-86 ANALYST: NK NK NK DATE OF ANALYSIS: 9-29-86

DAVID W. COLLINS
DIRECTOR

10-29-86
DATE

ORATORY
WORKS SERVICE COMPANY, INC.
INOIS STREET
LINOIS 62220•(618)235-3600

AR300917

CHEMICAL ANALYSIS REPORT

VOLATILE ORGANICS

METHOD EPA 502.1,503.1

COMPANY: KEYSTONE WATER CO.
NORRISTOWN DISTRICT
196 W. JOHNSON HWY.
NORRISTOWN , PA 19401

LAB CERTIFICATION NO. 68-269

cc: G. CHRISTENSEN
cc: R. CROKER
cc:

SAMPLE INFORMATION

	SAMPLE ID	TYPE	SAMPLE LOCATION	DATE	TIME	SAMPLER
1	861441	RAW	RAW WATER	03-20-86		
2	861442	RAW	RAW WATER	03-21-86		
3	861443	RAW	RAW WATER	03-22-86		
4	861444	RAW	RAW WATER	03-23-86		
5	861445	RAW	RAW WATER	03-24-86		
6	861446	RAW	RAW WATER	03-25-86		

RESULTS (mg/L)	MCL	1	2	3	4	5	6
METHYLENE CHLORIDE		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-DICHLOROETHYLENE		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
trans-1,2-DICHLOROETHYLENE		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
cis-1,2-DICHLOROETHYLENE		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
[illegible]-DICHLOROETHANE		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
[illegible],1-TRICHLOROETHANE		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CARBON TETRACHLORIDE		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
TRICHLOROETHYLENE		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
TETRACHLOROETHYLENE		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
BENZENE		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CHLOROBENZENE		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-DICHLOROETHANE		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CHLOROFORM		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
BROMODICHLOROMETHANE		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CHLORODIBROMOMETHANE		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
BROMOFORM		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

DATE SAMPLE REC'D: 03-27-86 ANALYST: JMB DATE OF ANALYSIS: 04-02-86

DAVID W. COLLINS
DIRECTOR

4-4-86
DATE

BELLEVILLE LABORATORY
AMERICAN WATER WORKS SERVICE COMPANY, INC.
1115 SOUTH ILLINOIS STREET
BELLEVILLE, ILLINOIS 62220*(618)235-3600

CHEMICAL ANALYSIS REPORT

PRIORITY POLLUTANTS
PURGEABLES
METHOD EPA 624

PANY: KEYSTONE WATER CO.
NORRISTOWN DISTRICT
196 W. JOHNSON HWY.
NORRISTOWN , PA 19401

LAB CERTIFICATION NO. 68-269

cc: G. CHRISTENSEN
cc: R. CROKER
cc:

PLE INFORMATION

SAMPLE ID	TYPE	SAMPLE LOCATION	DATE	TIME	SAMPLER
660051	RAW	RIVER WATER	1/6/86	12:10PM	L. HOWELL

POUND	RESULT (mg/L)	COMPOUND	RESULT (mg/L)
THYL CHLORIDE	< 0.001	trans-1,3-DICHLOROPROPENE	< 0.001
THYL BROMIDE	< 0.001	TRICHLOROETHYLENE	< 0.001
NYL CHLORIDE	< 0.001	DIBROMOCHLORMETHANE	< 0.001
LORETHANE	< 0.001	cis-1,3-DICHLOROPROPENE	< 0.001
THYLENE CHLORIDE	< 0.001	1,1,2-TRICHLOROETHANE	< 0.001
ICHLOROFLUOROMETHANE	< 0.001	BENZENE	< 0.001
1-DICHLOROETHYLENE	< 0.001	2-CHLOROETHYLVINYLETHER	< 0.001
1-DICHLOROETHANE	< 0.001	BROMOFORM	< 0.001
LOROFORM	< 0.001	TETRACHLOROETHYLENE	< 0.001
ans-1,2-DICHLOROETHYLENE	< 0.001	1,1,2,2-TETRACHLOROETHANE	< 0.001
2-DICHLOROETHANE	< 0.001	TOLUENE	< 0.001
1,1-TRICHLOROETHANE	< 0.001	CHLOROBENZENE	< 0.001
RBON TETRACHLORIDE	< 0.001	ETHYLBENZENE	< 0.001
OMODICHLOROMETHANE	< 0.001	ACROLEIN	< 0.001
2-DICHLOROPROPANE	< 0.001	ACRYLONITRILE	< 0.001
		DICHLORODIFLUOROMETHANE	<0.001

SAMPLE REC'D: 01-08-86 ANALYST: NK NK NK DATE OF ANALYSIS: 2-28-86

DAVID W. COLLINS
DIRECTOR

2-28-86
DATE

EVILLE LABORATORY
ICAN WATER WORKS SERVICE COMPANY, INC.
SOUTH ILLINOIS STREET
EVILLE, ILLINOIS 62220•(618)235-3600

AR300919

RECEIVED MAR - 4 1986

CHEMICAL ANALYSIS REPORT

PRIORITY POLLUTANTS
PESTICIDES/ACID EXTRACTABLES
METHOD EPA 625

COMPANY: KEYSTONE WATER CO.
NORRISTOWN DISTRICT
196 W. JOHNSON HWY.
NORRISTOWN , PA 19401

LAB CERTIFICATION NO. 68-269

cc: G. CHRISTENSEN
cc: R. CROKER
cc:

SAMPLE INFORMATION

SAMPLE ID	TYPE	SAMPLE LOCATION	DATE	TIME	SAMPLER
860051	RAW	RIVER WATER	1/6/86	12:10PM	L. HOWELL

PESTICIDES	RESULT (mg/L)	ACID/EXTRACTABLES	RESULT (mg/L)
alpha BHC	<0.0001	2-CHLOROPHENOL	< 0.010
gamma BHC (LINDANE)	<0.0001	2-NITROPHENOL	< 0.010
beta BHC	<0.0001	PHENOL	< 0.010
HEPTACHLOR	<0.0001	2,4-DIMETHYLPHENOL	< 0.010
delta BHC	<0.0001	2,4-DICHLOROPHENOL	< 0.010
ALDRIN	<0.0001	2,4,6-TRICHLOROPHENOL	< 0.010
HEPTACHLOR EPOXIDE	<0.0001	4-CHLORO-3-METHYLPHENOL	< 0.010
ENDOSULFAN I	<0.0001	PENTACHLOROPHENOL	< 0.010
DIELDRIN	<0.0001	2-METHYL-4,6-DINITROPHENOL	< 0.025
4.4' DDE	<0.0001	4-NITROPHENOL	< 0.025
ENDRIN	<0.0001	2,4-DINITROPHENOL	< 0.025
ENDRIN ALDEHYDE	<0.0001	PCB 1016	< 0.001
ENDOSULFAN II	<0.0001	PCB 1221	< 0.001
4,4' DDD	<0.0001	PCB 1232	< 0.001
4,4' DDT	<0.0001	PCB 1242	< 0.001
ENDOSULFAN SULFATE	<0.0001	PCB 1248	< 0.001
CHLORDANE	< 0.001	PCB 1254	< 0.001
TOXAPHENE	< 0.001	PCB 1260	< 0.001

DATE SAMPLE REC'D: 01-08-86 ANALYST: NK NK NK DATE OF ANALYSIS: 2-4-86

DAVID W. COLLINS
DIRECTOR

2-28-86
DATE

BELLEVILLE LABORATORY
AMERICAN WATER WORKS SERVICE COMPANY, INC.
1115 SOUTH ILLINOIS STREET
BELLEVILLE, ILLINOIS 62220•(618)235-3600

CHEMICAL ANALYSIS REPORT

PRIORITY POLLUTANTS
BASE/NEUTRAL EXTRACTABLES
METHOD EPA 625

COMPANY: KEYSTONE WATER CO.
NORRISTOWN DISTRICT
196 W. JOHNSON HWY.
NORRISTOWN , PA 19401

LAB CERTIFICATION NO. 68-269

cc: G. CHRISTENSEN
cc: R. CROKER
cc:

SAMPLE INFORMATION

SAMPLE ID	TYPE	SAMPLE LOCATION	DATE	TIME	SAMPLER
860051	RAW	RIVER WATER	1/6/86	12:10PM	L. HOWELL

COMPOUND	RESULT (mg/L)	COMPOUND	RESULT (mg/L)
1,3-DICHLOROBENZENE	< 0.010	N-NITROSODIPHENYLAMINE	< 0.010
1,4-DICHLOROBENZENE	< 0.010	HEXACHLOROBENZENE	< 0.010
HEXACHLOROETHANE	< 0.010	4-BROMOPHENYL PHENYL ETHER	< 0.010
bis(2-CHLOROETHYL)ETHER	< 0.010	PHENANTHRENE	< 0.010
1,2-DICHLOROBENZENE	< 0.010	ANTHRACENE	< 0.010
bis(2-CHLORDISOPROPYL)ETHER	< 0.010	Di-n-BUTYL PHTHALATE	< 0.010
N-NITROSO-di-n-PROPYLAMINE	< 0.010	FLUORANTHENE	< 0.010
NITROBENZENE	< 0.010	PYRENE	< 0.010
HEXACHLOROBUTADIENE	< 0.010	BENZIDINE	< 0.010
1,2,4-TRICHLOROBENZENE	< 0.010	BUTYLBENZYL PHTHALATE	< 0.010
ISOPHORONE	< 0.010	bis(2-ETHYHEXYL)PHTHALATE	< 0.010
NAPHTHALENE	< 0.010	CHRYSENE	< 0.010
bis(2-CHLOROETHOXY)METHANE	< 0.010	BENZO(a)ANTHRACENE	< 0.010
HEXACHLORCYCLOPENTADIENE	< 0.010	3,3'-DICHLOROBENZIDINE	< 0.010
2-CHLORONAPHTHALANE	< 0.010	Di-n-OCTYL PHTHALATE	< 0.010
ACENAPHTHYLENE	< 0.010	BENZO(b)FLUORANTHENE	< 0.010
ACENAPHTHENE	< 0.010	BENZO(k)FLUORANTHENE	< 0.010
DIMETHYLPHTHALATE	< 0.010	BENZO(a)PYRENE	< 0.010
2,6-DINITROTOLUENE	< 0.010	INDENDL(1,2,3-c,d)PYRENE	< 0.010
FLUORENE	< 0.010	DIBENZO(a,h)ANTHRACENE	< 0.010
4-CHLOROPHENYL PHENYL ETHER	< 0.010	BENZO(g,h,i)PERYLENE	< 0.010
2,4-DINITROTOLUENE	< 0.010	N-NITROSODIMETHYLAMINE	< 0.010
1,2-DIPHENYLHYDRAZINE	< 0.010	bis(CHLOROMETHYL)ETHER	< 0.010
DIETHYL PHTHALATE	< 0.010	DIOXIN	< 0.010

DATE SAMPLE REC'D: 01-08-86 ANALYST: NK NK NK DATE OF ANALYSIS: 2-12-86

DAVID W. COLLINS
DIRECTOR

2-28-86
DATE

B. [illegible]LE LABORATORY
AMERICAN WATER WORKS SERVICE COMPANY, INC.
1115 SOUTH ILLINOIS STREET
BELLEVILLE, ILLINOIS 62220*(618)235-3600

AR300921

CHEMICAL ANALYSIS REPORT

PRIORITY POLLUTANTS
PESTICIDES/ACID EXTRACTABLES
METHOD EPA 625

KEYSTONE WATER CO.
NORRISTOWN DISTRICT
196 W. JOHNSON HWY.
NORRISTOWN , PA 19401

LAB CERTIFICATION NO. 68-269

G. CHRISTENSEN
R. CROKER

FORMATION

ID	TYPE	SAMPLE LOCATION	DATE	TIME	SAMPLER
3	RAW	RAW WATER	8/14/85		L. HOWELL

ES	RESULT (mg/L)	ACID/EXTRACTABLES	RESULT (mg/L)
3	<0.0001	2-CHLOROPHENOL	< 0.010
3 (LINDANE)	<0.0001	2-NITROPHENOL	< 0.010
	<0.0001	PHENOL	< 0.010
OR	<0.0001	2,4-DIMETHYLPHENOL	< 0.010
3	<0.0001	2,4-DICHLOROPHENOL	< 0.010
	<0.0001	2,4,6-TRICHLOROPHENOL	< 0.010
OR, OXIDE	<0.0001	4-CHLORO-3-METHYLPHENOL	< 0.010
AN	<0.0001	PENTACHLOROPHENOL	< 0.010
	<0.0001	2-METHYL-4,6-DINITROPHENOL	< 0.025
	<0.0001	4-NITROPHENOL	< 0.025
	<0.0001	2,4-DINITROPHENOL	< 0.025
LDEHYDE	<0.0001	PCB 1016	< 0.001
AN II	<0.0001	PCB 1221	< 0.001
	<0.0001	PCB 1232	< 0.001
	<0.0001	PCB 1242	< 0.001
AN SULFATE	<0.0001	PCB 1248	< 0.001
E	< 0.001	PCB 1254	< 0.001
E	< 0.001	PCB 1260	< 0.001

D: 8/15/85 ANALYST: JHB NK MK DATE OF ANALYSIS: 10/23/85

DAVID W. COLLINS
DIRECTOR

DATE

RATORY
WORKS SERVICE COMPANY, INC.
INOIS STREET
LINOIS 62220•(618)235-3600

AR300922

CHEMICAL ANALYSIS REPORT

PRIORITY POLLUTANTS
BASE/NEUTRAL EXTRACTABLES
METHOD EPA 625

COMPANY: KEYSTONE WATER CO.
NORRISTOWN DISTRICT
196 W. JOHNSON HWY.
NORRISTOWN , PA 19401

LAB CERTIFICATION NO. 68-269

cc: G. CHRISTENSEN
cc: R. CROKER
cc:

SAMPLE INFORMATION

SAMPLE ID	TYPE	SAMPLE LOCATION	DATE	TIME	SAMPLER
853783	RAW	RAW WATER	8/14/85		L. HOWELL

COMPOUND	RESULT (mg/L)	COMPOUND	RESULT (mg/L)
1,3-DICHLOROBENZENE	< 0.010	N-NITROSODIPHENYLAMINE	< 0.010
1,4-DICHLOROBENZENE	< 0.010	HEXACHLORBENZENE	< 0.010
HEXACHLOROETHANE	< 0.010	4-BROMOPHENYL PHENYL ETHER	< 0.010
bis(2-CHLOROETHYL)ETHER	< 0.010	PHENANTHRENE	< 0.010
1,2-DICHLOROBENZENE	< 0.010	ANTHRACENE	< 0.010
bis(2-CHLOROISOPROPYL)ETHER	< 0.010	Di-n-BUTYL PHTHALATE	< 0.010
N-NITROSO-di-n-PROPYLAMINE	< 0.010	FLUORANTHENE	< 0.010
NITROBENZENE	< 0.010	PYRENE	< 0.010
HEXACHLOROBUTADIENE	< 0.010	BENZIDINE	< 0.010
1,2,4-TRICHLORBENZENE	< 0.010	BUTYLBENZYL PHTHALATE	< 0.010
ISOPHORONE	< 0.010	bis(2-ETHYHEXYL)PHTHALATE	< 0.010
NAPHTHALENE	< 0.010	CHRYSENE	< 0.010
bis(2-CHLOROETHOXY)METHANE	< 0.010	BENZO(a)ANTHRACENE	< 0.010
HEXACHLORCYCLOPENTADIENE	< 0.010	3,3'-DICHLOROBENZIDINE	< 0.010
2-CHLORONAPHTHALANE	< 0.010	Di-n-OCTYL PHTHALATE	< 0.010
ACENAPHTHYLENE	< 0.010	BENZO(b)FLUORANTHENE	< 0.010
ACENAPHTHENE	< 0.010	BENZO(k)FLUORANTHENE	< 0.010
DIMETHYLPHTHALATE	< 0.010	BENZO(a)PYRENE	< 0.010
2,6-DINITROTOLUENE	< 0.010	INDENOL(1,2,3-c,d)PYRENE	< 0.010
FLUORENE	< 0.010	DIBENZO(a,h)ANTHRACENE	< 0.010
4-CHLOROPHENYL PHENYL ETHER	< 0.010	BENZO(g,h,i)PERYLENE	< 0.010
2,4-DINITROTOLUENE	< 0.010	N-NITROSODIMETHYLAMINE	< 0.010
1,2-DIPHENYLHYDRAZINE	< 0.010	bis(CHLOROMETHYL)ETHER	< 0.010
DIETHYL PHTHALATE	< 0.010	DIOXIN	< 0.010

DATE SAMPLE REC'D: 8/15/85 ANALYST: JHB NK MK DATE OF ANALYSIS: 10/10/85

DAVID W. COLLINS
DIRECTOR

DATE

BELLEVILLE LABORATORY
AMERICAN WATER WORKS SERVICE COMPANY, INC.
1115 SOUTH ILLINOIS STREET
BELLEVILLE, ILLINOIS 62220•(618)235-3600

CHEMICAL ANALYSIS REPORT
PESTICIDES II

PANY: KEYSTONE WATER CO.
NORRISTOWN DISTRICT
P.O. BOX 871
NORRISTOWN PA 19401

LAB CERTIFICATION NO. 10-269

cc: G. CHRISTENSEN
cc: R. CROKER

PLE INFORMATION

SAMPLE ID	TYPE	SAMPLE LOCATION	DATE	TIME	SAMPLER
851656	RAW	SCHUYLKILL RIVER	4/25/85	9:00AM	J. DETWILER

POUND	RESULT (mg/L)	COMPOUND	RESULT (mg/L)
EFIN	<0.001	CYANAZINE	<0.010
PACHLOR	<0.010	METHOXYCHLOR	<0.0001
RATE	<0.010	NITRALIN	<0.010
PAZINE	<0.100	HEXACHLOROETHANE	<0.0001
ZINON	<0.010	4-BROMOCHLOROBENZENE	<0.0001
AZINE	<0.100	1,2,4-TRICHLOROBENZENE	<0.0001
IA	<0.100	HEXACHLOROBUTADIENE	<0.0001
ULFUTON	<0.010	HEXACHLOROBENZENE	<0.0001
PANIL	<0.010	PCNB	<0.0001
CHLOR	<0.010		
HYLPARATHION	<0.010		
ATHION	<0.010		
ATHION	<0.010		
RIN	<0.0001		
ACHLOR	<0.010		

SAMPLE REC'D: 4/26/85 ANALYST: ROSE MARIE CAREY DATE OF ANALYSIS: 5/26/85

DAVID W. COLLINS
DIRECTOR

MAY 29 1985
DATE

EVILLE LABORATORY
ICAN WATER WORKS SERVICE COMPANY, INC.
SOUTH ILLINOIS STREET
EVI LLINOIS 62221 (618) 235-3600

AR300924

CHEMICAL ANALYSIS REPORT

PRIORITY POLLUTANTS
PURGEABLES
METHOD EPA 624

COMPANY: KEYSTONE WATER CO.
NORRISTOWN DISTRICT
P.O. BOX 871
NORRISTOWN PA 19401

LAB CERTIFICATION NO. 10-269

cc: E. CHRISTENSEN
cc: R. CROKER

SAMPLE INFORMATION

SAMPLE ID	TYPE	SAMPLE LOCATION	DATE	TIME	SAMPLER
851654	RAW	SCHUYLKILL RIVER	4/25/85	9:00AM	J. DETWILER

COMPOUND	RESULT (mg/L)	COMPOUND	RESULT (mg/L)
METHYL CHLORIDE	<0.001	trans-1,3-DICHLOROPROPANE	<0.001
METHYL BROMIDE	<0.001	TRICHLOROETHYLENE	<0.001
VINYL CHLORIDE	<0.001	DIBROMOCHLOROMETHANE	<0.001
CHLOROETHANE	<0.001	cis-1,3-DICHLOROPROPANE	<0.001
METHYLENE CHLORIDE	<0.001	1,1,2-TRICHLOROETHANE	<0.001
TRICHLOROFLUOROMETHANE	<0.001	BENZENE	<0.001
1,1-DICHLOROETHYLENE	<0.001	2-CHLOROETHYLVINYLETHER	<0.001
1,1-DICHLOROETHANE	<0.001	BROMOFORM	<0.001
CHLOROFORM	<0.001	TETRACHLOROETHYLENE	<0.001
trans-1,2-DICHLOROETHYLENE	<0.001	1,1,2,2-TETRACHLOROETHANE	<0.001
1,2-DICHLOROETHANE	<0.001	TOLUENE	<0.001
1,1,1-TRICHLOROETHANE	<0.001	CHLOROBENZENE	<0.001
CARBON TETRACHLORIDE	<0.001	ETHYLBENZENE	<0.001
BROMODICHLOROMETHANE	<0.001	ACROLEIN	<0.001
1,2-DICHLOROPROPANE	<0.001	ACRYLONITRILE	<0.001
		DICHLORODIFLUOROMETHANE	<0.001

DATE SAMPLE REC'D: 4/26/85 ANALYST: DAVID COLLINS DATE OF ANALYSIS: 5/29/85

David W. Collins/mls JUN 3 - 1985

DAVID W. COLLINS DATE
DIRECTOR

BELLEVILLE LABORATORY
AMERICAN WATER WORKS SERVICE COMPANY, INC.
115 SOUTH ILLINOIS STREET
BELLEVILLE, ILLINOIS 62221•(618)235-3600

CHEMICAL ANALYSIS REPORT

PRIORITY POLLUTANTS
PESTICIDES/ACID EXTRACTABLES
METHOD EPA 625

COMPANY: KEYSTONE WATER CO.
COMPANY: NORRISTOWN DISTRICT
P.O. BOX 871
NORRISTOWN PA 19401

cc: G. CHRISTENSEN
cc: R. CROKER

Lab Certification No. 10-269

SAMPLE INFORMATION

SAMPLE ID	TYPE	SAMPLE LOCATION	DATE	TIME	SAMPLER
851654	RAW	SCHUYLKILL RIVER	4/25/85	9:00AM	J. DETWILER

PESTICIDES	RESULT (mg/L)	ACID/EXTRACTABLES	RESULT (mg/L)
alpha BHC	<0.0001	2-CHLOROPHENOL	<0.010
gamma BHC (LINDANE)	<0.0001	2-NITROPHENOL	<0.010
beta BHC	<0.0001	PHENOL	<0.010
HEPTACHLOR	<0.0001	2,4-DIMETHYLPHENOL	<0.010
delta BHC	<0.0001	2,4-DICHLOROPHENOL	<0.010
ALDRIN	<0.0001	2,4,6-TRICHLOROPHENOL	<0.010
HEPTACHLOR EPOXIDE	<0.0001	4-CHLORO-3-METHYLPHENOL	<0.010
ENDOSULFAN I	<0.0001	PENTACHLOROPHENOL	<0.010
DIELDRIN	<0.0001	2-METHYL-4,6-DINITROPHENOL	<0.025
4,4' DDE	<0.0001	4-NITROPHENOL	<0.025
ENDRIN	<0.0001	2,4-DINITROPHENOL	<0.025
ENDRIN ALDEHYDE	<0.0001	PCB 1016	<0.001
ENDOSULFAN II	<0.0001	PCB 1221	<0.001
4,4' DDD	<0.0001	PCB 1232	<0.001
4,4' DDT	<0.0001	PCB 1242	<0.001
ENDOSULFAN SULFATE	<0.0001	PCB 1248	<0.001
CHLORDANE	<0.001	PCB 1254	<0.001
TOXAPHENE	<0.001	PCB 1260	<0.001

DATE SAMPLE REC'D: 4/26/85 ANALYST: KUMAR/CAREY DATE OF ANALYSIS: 5/31/85

David W. Collins JUN 3 - 1985

DAVID W. COLLINS
DIRECTOR

DATE

BELLEVILLE LABORATORY
AMERICAN WATER WORKS SERVICE COMPANY, INC.
115 SOUTH ILLINOIS STREET
BELLEVILLE, ILLINOIS 62221•(618)235-3600

CHEMICAL ANALYSIS REPORT

PRIORITY POLLUTANTS
BASE/NEUTRAL EXTRACTABLES
METHOD EPA 625

COMPANY: KEYSTONE WATER CO.
NORRISTOWN DISTRICT
P.O. BOX 871
NORRISTOWN PA 19401

LAB CERTIFICATION NO. 10-269

cc: G. CHRISTENSEN
cc: R. CROKER

SAMPLE INFORMATION

SAMPLE ID	TYPE	SAMPLE LOCATION	DATE	TIME	SAMPLER
851654	RAW	SCHUYLKILL RIVER	4/25/85	9:00AM	J. DETWILER

COMPOUND	RESULT (mg/L)	COMPOUND	RESULT (mg/L)
1,3-DICHLOROBENZENE	<0.010	N-NITROSODIPHENYLAMINE	<0.010
1,4-DICHLOROBENZENE	<0.010	HEXACHLOROBENZENE	<0.010
HEXACHLOROETHANE	<0.010	4-BROMOPHENYL PHENYL ETHER	<0.010
bis(2-CHLOROETHYL)ETHER	<0.010	PHENANTHRENE	<0.010
1,2-DICHLOROBENZENE	<0.010	ANTHRACENE	<0.010
bis(2-CHLORDISOPROPYL)ETHER	<0.010	Di-n-BUTYL PHTHALATE	<0.010
N-NITROSO-di-n-PROPYLAMINE	<0.010	FLUORANTHENE	<0.010
NITROBENZENE	<0.010	PYRENE	<0.010
HEXACHLOROBUTADIENE	<0.010	BENZIDINE	<0.010
1,2,4-TRICHLOROBENZENE	<0.010	BUTYLBENZYL PHTHALATE	<0.010
ISOPHORONE	<0.010	bis(2-ETHYLHEXYL)PHTHALATE	<0.010
NAPHTHALENE	<0.010	CHRYSENE	<0.010
bis(2-CHLOROETHOXY)METHANE	<0.010	BENZO(a)ANTHRACENE	<0.010
HEXACHLOROCYCLOPENTADIENE	<0.010	3,3'-DICHLOROBENZIDINE	<0.010
2-CHLORONAPHTHALENE	<0.010	Di-n-OCTYL PHTHALATE	<0.010
ACENAPHTHYLENE	<0.010	BENZO(b)FLUORANTHENE	<0.010
ACENAPHTHENE	<0.010	BENZO(k)FLUORANTHENE	<0.010
DIMETHYLPHTHALATE	<0.010	BENZO(a)PYRENE	<0.010
2,6-DINITROTOLUENE	<0.010	INDENOL(1,2,3-c,d)PYRENE	<0.010
FLUORENE	<0.010	DIBENZO(a,h)ANTHRACENE	<0.010
4-CHLOROPHENYL PHENYL ETHER	<0.010	BENZO(g,h,i)PERYLENE	<0.010
2,4-DINITROTOLUENE	<0.010	N-NITROSODIMETHYLAMINE	<0.010
1,2-DIPHENYLHYDRAZINE	<0.010	bis(CHLOROMETHYL)ETHER	<0.010
DIETHYL PHTHALATE	<0.010	DIOXIN	<0.010

DATE SAMPLE REC'D: 4/26/85 ANALYST: NARAYAN KUMAR DATE OF ANALYSIS: 5/18/85

MAY 22 1985

DAVID W. COLLINS
DIRECTOR

DATE

BELLEVILLE LABORATORY
AMERICAN WATER WORKS SERVICE COMPANY, INC.
1115 SOUTH ILLINOIS STREET
BELLEVILLE, ILLINOIS 62221•(618)233-3600

AR300927

RECEIVED JUN - 6 1985

CHEMICAL ANALYSIS REPORT

PRIORITY POLLUTANTS
BASE/NEUTRAL EXTRACTABLES
METHOD EPA 625

OMPANY: KEYSTONE WATER CO.
NORRISTOWN DISTRICT
196 W. JOHNSON HWY.
NORRISTOWN , PA 19401

LAB CERTIFICATION NO. 68-269

cc: G. CHRISTENSEN
cc: R. CROKER
cc:

MPLE INFORMATION

SAMPLE ID	TYPE	SAMPLE LOCATION	DATE	TIME	SAMPLER
864377	RAW	INTAKE	08-11-86	10:30AM	L.HOWELL

OMPOUND	RESULT (mg/L)	COMPOUND	RESULT (mg/L)
,3-DICHLOROBENZENE	< 0.010	N-NITROSODIPHENYLAMINE	< 0.010
,4-DICHLOROBENZENE	< 0.010	HEXACHLORBENZENE	< 0.010
EXACHLOROETHANE	< 0.010	4-BROMOPHENYL PHENYL ETHER	< 0.010
s(2-CHLOROETHYL)ETHER	< 0.010	PHENANTHRENE	< 0.010
,2-DICHLOROBENZENE	< 0.010	ANTHRACENE	< 0.010
s(2-CHLOROISOPROPYL)ETHER	< 0.010	Di-n-BUTYL PHTHALATE	< 0.010
-NITROSO-di-n-PROPYLAMINE	< 0.010	FLUORANTHENE	< 0.010
BENZENE	< 0.010	PYRENE	< 0.010
EXACHLOROBUTADIENE	< 0.010	BENZIDINE	< 0.010
2,4-TRICHLOROBENZENE	< 0.010	BUTYLBENZYL PHTHALATE	< 0.010
SOPHORONE	< 0.010	bis(2-ETHYHEXYL)PHTHALATE	0.062
APHTHALENE	< 0.010	CHRYSENE	< 0.010
s(2-CHLOROETHOXY)METHANE	< 0.010	BENZO(a)ANTHRACENE	< 0.010
EXACHLORCYCLOPENTADIENE	< 0.010	3,3'-DICHLOROBENZIDINE	< 0.010
-CHLORONAPHTHALANE	< 0.010	Di-n-OCTYL PHTHALATE	< 0.010
ENAPHTHYLENE	< 0.010	BENZO(b)FLUORANTHENE	< 0.010
ENAPHTHENE	< 0.010	BENZO(k)FLUORANTHENE	< 0.010
METHYLPHTHALATE	< 0.010	BENZO(a)PYRENE	< 0.010
6-DINITROTOLUENE	< 0.010	INDENDL(1,2,3-c,d)PYRENE	< 0.010
LUORENE	< 0.010	DIBENZO(a,h)ANTHRACENE	< 0.010
-CHLOROPHENYL PHENYL ETHER	< 0.010	BENZO(g,h,i)PERYLENE	< 0.010
4-DINITROTOLUENE	< 0.010	N-NITROSODIMETHYLAMINE	< 0.010
2-DIPHENYLHYDRAZINE	< 0.010	bis(CHLOROMETHYL)ETHER	< 0.010
ETHYL PHTHALATE	< 0.010	DIDXIN	< 0.010

E SAMPLE REC'D: 08-12-86 ANALYST: NK NK NK DATE OF ANALYSIS: 10-28-86

DAVID W. COLLINS
DIRECTOR

10-29-86
DATE

LI LABORATORY
RICAN WATER WORKS SERVICE COMPANY, INC.
5 SOUTH ILLINOIS STREET
LEVILLE, ILLINOIS 62220•(618)235-3600

AR300928

RECEIVED NOV - 3 1986

CHEMICAL ANALYSIS REPORT

PRIORITY POLLUTANTS
PESTICIDES/ACID EXTRACTABLES
METHOD EPA 625

COMPANY: KEYSTONE WATER CO.
NORRISTOWN DISTRICT
196 W. JOHNSON HWY.
NORRISTOWN , PA 19401

LAB CERTIFICATION NO. 68-269

cc: G. CHRISTENSEN
cc: R. CROKER
cc:

SAMPLE INFORMATION

SAMPLE ID	TYPE	SAMPLE LOCATION	DATE	TIME	SAMPLER
860051	RAW	RIVER WATER	1/6/86	12:10PM	L. HOWELL

PESTICIDES	RESULT (mg/L)	ACID/EXTRACTABLES	RESULT (mg/L)
alpha BHC	<0.0001	2-CHLOROPHENOL	< 0.010
gamma BHC (LINDANE)	<0.0001	2-NITROPHENOL	< 0.010
beta BHC	<0.0001	PHENOL	< 0.010
HEPTACHLOR	<0.0001	2,4-DIMETHYLPHENOL	< 0.010
delta BHC	<0.0001	2,4-DICHLOROPHENOL	< 0.010
ALDRIN	<0.0001	2,4,6-TRICHLOROPHENOL	< 0.010
HEPTACHLOR EPOXIDE	<0.0001	4-CHLORO-3-METHYLPHENOL	< 0.010
ENDOSULFAN I	<0.0001	PENTACHLOROPHENOL	< 0.010
DIELDRIN	<0.0001	2-METHYL-4,6-DINITROPHENOL	< 0.025
4,4' DDE	<0.0001	4-NITROPHENOL	< 0.025
ENDRIN	<0.0001	2,4-DINITROPHENOL	< 0.025
ENDRIN ALDEHYDE	<0.0001	PCB 1016	< 0.001
ENDOSULFAN II	<0.0001	PCB 1221	< 0.001
4,4' DDD	<0.0001	PCB 1232	< 0.001
4,4' DDT	<0.0001	PCB 1242	< 0.001
ENDOSULFAN SULFATE	<0.0001	PCB 1248	< 0.001
CHLORDANE	< 0.001	PCB 1254	< 0.001
TOXAPHENE	< 0.001	PCB 1260	< 0.001

DATE SAMPLE REC'D: 01-08-86 ANALYST: NK NK NK DATE OF ANALYSIS: 2-4-86

DAVID W. COLLINS
DIRECTOR

2-28-86
DATE

BELLEVILLE LABORATORY
AMERICAN WATER WORKS SERVICE COMPANY, INC.
1115 SOUTH ILLINOIS STREET
BELLEVILLE, ILLINOIS 62220•(618)235-3600

CHEMICAL ANALYSIS REPORT

PRIORITY POLLUTANTS
BASE/NEUTRAL EXTRACTABLES
METHOD EPA 625

COMPANY: KEYSTONE WATER CO.
NORRISTOWN DISTRICT
196 W. JOHNSON HWY.
NORRISTOWN , PA 19401

LAB CERTIFICATION NO. 68-269

cc: G. CHRISTENSEN
cc: R. CROKER
cc:

SAMPLE INFORMATION

SAMPLE ID	TYPE	SAMPLE LOCATION	DATE	TIME	SAMPLER
860051	RAW	RIVER WATER	1/6/86	12:10PM	L. HOWELL

COMPOUND	RESULT (mg/L)	COMPOUND	RESULT (mg/L)
1,3-DICHLOROBENZENE	< 0.010	N-NITROSODIPHENYLAMINE	< 0.010
1,4-DICHLOROBENZENE	< 0.010	HEXACHLORBENZENE	< 0.010
HEXACHLOROETHANE	< 0.010	4-BROMOPHENYL PHENYL ETHER	< 0.010
bis(2-CHLOROETHYL)ETHER	< 0.010	PHENANTHRENE	< 0.010
1,2-DICHLOROBENZENE	< 0.010	ANTHRACENE	< 0.010
bis(2-CHLOROISOPROPYL)ETHER	< 0.010	Di-n-BUTYL PHTHALATE	< 0.010
NITROSO-di-n-PROPYLAMINE	< 0.010	FLUORANTHENE	< 0.010
TROBENZENE	< 0.010	PYRENE	< 0.010
HEXACHLOROBUTADIENE	< 0.010	BENZIDINE	< 0.010
1,2,4-TRICHLORBENZENE	< 0.010	BUTYLBENZYL PHTHALATE	< 0.010
ISOPHORONE	< 0.010	bis(2-ETHYHEXYL)PHTHALATE	< 0.010
NAPHTHALENE	< 0.010	CHRYSENE	< 0.010
bis(2-CHLOROETHOXY)METHANE	< 0.010	BENZO(a)ANTHRACENE	< 0.010
HEXACHLORCYCLOPENTADIENE	< 0.010	3,3'-DICHLOROBENZIDINE	< 0.010
2-CHLORONAPHTHALANE	< 0.010	Di-n-OCTYL PHTHALATE	< 0.010
ACENAPHTHYLENE	< 0.010	BENZO(b)FLUORANTHENE	< 0.010
ACENAPHTHENE	< 0.010	BENZO(k)FLUORANTHENE	< 0.010
DIMETHYLPHTHALATE	< 0.010	BENZO(a)PYRENE	< 0.010
2,6-DINITROTOLUENE	< 0.010	INDENDL(1,2,3-c,d)PYRENE	< 0.010
FLUORENE	< 0.010	DIBENZO(a,h)ANTHRACENE	< 0.010
4-CHLOROPHENYL PHENYL ETHER	< 0.010	BENZO(g,h,i)PERYLENE	< 0.010
2,4-DINITROTOLUENE	< 0.010	N-NITROSODIMETHYLAMINE	< 0.010
1,2-DIPHENYLHYDRAZINE	< 0.010	bis(CHLOROMETHYL)ETHER	< 0.010
DIETHYL PHTHALATE	< 0.010	DIOXIN	< 0.010

DATE SAMPLE REC'D: 01-08-86 ANALYST: MK MK MK DATE OF ANALYSIS: 2-12-86

DAVID W. COLLINS
DIRECTOR

2-28-86
DATE

BELLEVILLE LABORATORY
AMERICAN WATER WORKS SERVICE COMPANY, INC.
1115 SOUTH ILLINOIS STREET
BELLEVILLE, ILLINOIS 62220•(618)235-3600

CHEMICAL ANALYSIS REPORT

PRIORITY POLLUTANTS
PURGEABLES
METHOD EPA 624

COMPANY: KEYSTONE WATER CO.
NORRISTOWN DISTRICT
196 W. JOHNSON HWY.
NORRISTOWN , PA 19401

LAB CERTIFICATION NO. 68-269

cc: G. CHRISTENSEN
cc: R. CROKER
cc:

SAMPLE INFORMATION

SAMPLE ID	TYPE	SAMPLE LOCATION	DATE	TIME	SAMPLER
860051	RAW	RIVER WATER	1/6/86	12:10PM	L. HOWELL

COMPOUND	RESULT (mg/L)	COMPOUND	RESULT (mg/L)
METHYL CHLORIDE	< 0.001	trans-1,3-DICHLOROPROPENE	< 0.001
METHYL BROMIDE	< 0.001	TRICHLOROETHYLENE	< 0.001
VINYL CHLORIDE	< 0.001	DIBROMOCHLORMETHANE	< 0.001
CHLORETHANE	< 0.001	cis-1,3-DICHLOROPROPENE	< 0.001
METHYLENE CHLORIDE	< 0.001	1,1,2-TRICHLOROETHANE	< 0.001
TRICHLOROFLUOROMETHANE	< 0.001	BENZENE	< 0.001
1-DICHLOROETHYLENE	< 0.001	2-CHLOROETHYLVINYLETHER	< 0.001
,1-DICHLOROETHANE	< 0.001	BROMOFORM	< 0.001
CHLOROFORM	< 0.001	TETRACHLOROETHYLENE	< 0.001
trans-1,2-DICHLOROETHYLENE	< 0.001	1,1,2,2-TETRACHLOROETHANE	< 0.001
1,2-DICHLOROETHANE	< 0.001	TOLUENE	< 0.001
1,1,1-TRICHLOROETHANE	< 0.001	CHLOROBENZENE	< 0.001
CARBON TETRACHLORIDE	< 0.001	ETHYLBENZENE	< 0.001
BROMODICHLOROMETHANE	< 0.001	ACROLEIN	< 0.001
1,2-DICHLOROPROPANE	< 0.001	ACRYLONITRILE	< 0.001
		DICHLORODIFLUOROMETHANE	<0.001

DATE SAMPLE REC'D: 01-08-86 ANALYST: MK MK MK DATE OF ANALYSIS: 2-28-86

DAVID W. COLLINS
DIRECTOR

2-28-86
DATE

BELLEVILLE LABORATORY
AMERICAN WATER WORKS SERVICE COMPANY, INC.
1115 SOUTH ILLINOIS STREET
BELLEVILLE, ILLINOIS 62220•(618)233-3600

AR300931

MAR 1 1986

CHEMICAL ANALYSIS REPORT

PRIORITY POLLUTANTS
BASE/NEUTRAL EXTRACTABLES
METHOD EPA 625

COMPANY: KEYSTONE WATER CO.
NORRISTOWN DISTRICT
196 W. JOHNSON HWY.
NORRISTOWN , PA 19401

LAB CERTIFICATION NO. 68-269

cc: G. CHRISTENSEN
cc: R. CROKER
cc:

SAMPLE INFORMATION

SAMPLE ID	TYPE	SAMPLE LOCATION	DATE	TIME	SAMPLER
864377	RAW	INTAKE	08-11-86	10:30AM	L.HOWELL

COMPOUND	RESULT (mg/L)	COMPOUND	RESULT (mg/L)
1,3-DICHLOROBENZENE	< 0.010	N-NITROSODIPHENYLAMINE	< 0.010
1,4-DICHLOROBENZENE	< 0.010	HEXACHLORBENZENE	< 0.010
HEXACHLOROETHANE	< 0.010	4-BROMOPHENYL PHENYL ETHER	< 0.010
bis(2-CHLOROETHYL)ETHER	< 0.010	PHENANTHRENE	< 0.010
1,2-DICHLOROBENZENE	< 0.010	ANTHRACENE	< 0.010
bis(2-CHLOROISOPROPYL)ETHER	< 0.010	Di-n-BUTYL PHTHALATE	< 0.010
N-NITROSO-di-n-PROPYLAMINE	< 0.010	FLUORANTHENE	< 0.010
NITROBENZENE	< 0.010	PYRENE	< 0.010
HEXACHLOROBUTADIENE	< 0.010	BENZIDINE	< 0.010
1,2,4-TRICHLORBENZENE	< 0.010	BUTYLBENZYL PHTHALATE	< 0.010
ISOPHORONE	< 0.010	bis(2-ETHYHEXYL)PHTHALATE	0.062
NAPHTHALENE	< 0.010	CHRYSENE	< 0.010
bis(2-CHLOROETHOXY)METHANE	< 0.010	BENZO(a)ANTHRACENE	< 0.010
HEXACHLORCYCLOPENTADIENE	< 0.010	3,3'-DICHLOROBENZIDINE	< 0.010
2-CHLORONAPHTHALANE	< 0.010	Di-n-OCTYL PHTHALATE	< 0.010
ACENAPHTHYLENE	< 0.010	BENZO(b)FLUORANTHENE	< 0.010
ACENAPHTHENE	< 0.010	BENZO(k)FLUORANTHENE	< 0.010
DIMETHYLPHTHALATE	< 0.010	BENZO(a)PYRENE	< 0.010
2,6-DINITROTOLUENE	< 0.010	INDENOL(1,2,3-c,d)PYRENE	< 0.010
FLUORENE	< 0.010	DIBENZO(a,h)ANTHRACENE	< 0.010
4-CHLOROPHENYL PHENYL ETHER	< 0.010	BENZO(g,h,i)PERYLENE	< 0.010
2,4-DINITROTOLUENE	< 0.010	N-NITROSODIMETHYLAMINE	< 0.010
1,2-DIPHENYLHYDRAZINE	< 0.010	bis(CHLOROMETHYL)ETHER	< 0.010
DIETHYL PHTHALATE	< 0.010	DIOXIN	< 0.010

DATE SAMPLE REC'D: 08-12-86 ANALYST: NK NK NK DATE OF ANALYSIS: 10-28-86

DAVID W. COLLINS
DIRECTOR

10-29-86
DATE

BELLEVILLE LABORATORY
AMERICAN WATER WORKS SERVICE COMPANY, INC.
1115 SOUTH ILLINOIS STREET
BELLEVILLE, ILLINOIS 62220•(618)235-3600

AR300932

RECEIVED NOV - 3 1986

CHEMICAL ANALYSIS REPORT

PRIORITY POLLUTANTS
PESTICIDES/ACID EXTRACTABLES
METHOD EPA 625

COMPANY: KEYSTONE WATER CO.
NORRISTOWN DISTRICT
196 W. JOHNSON HWY.
NORRISTOWN , PA 19401

LAB CERTIFICATION NO. 68-269

cc: G. CHRISTENSEN
cc: R. CROKER
cc:

SAMPLE INFORMATION

SAMPLE ID	TYPE	SAMPLE LOCATION	DATE	TIME	SAMPLER
864377	RAW	INTAKE	08-11-86	10:30AM	L.HOWELL

PESTICIDES	RESULT (mg/L)	ACID/EXTRACTABLES	RESULT (mg/L)
alpha BHC	<0.0001	2-CHLOROPHENOL	< 0.010
gamma BHC (LINDANE)	<0.0001	2-NITROPHENOL	< 0.010
beta BHC	<0.0001	PHENOL	< 0.010
HEPTACHLOR	<0.0001	2,4-DIMETHYLPHENOL	< 0.010
delta BHC	<0.0001	2,4-DICHLOROPHENOL	< 0.010
ALDRIN	<0.0001	2,4,6-TRICHLOROPHENOL	< 0.010
HEPTACHLOR EPOXIDE	<0.0001	4-CHLORO-3-METHYLPHENOL	< 0.010
ENDOSULFAN I	<0.0001	PENTACHLOROPHENOL	< 0.010
DIELDRIN	<0.0001	2-METHYL-4,6-DINITROPHENOL	< 0.025
4,4' DDE	<0.0001	4-NITROPHENOL	< 0.025
ENDRIN	<0.0001	2,4-DINITROPHENOL	< 0.025
ENDRIN ALDEHYDE	<0.0001	PCB 1016	< 0.001
ENDOSULFAN II	<0.0001	PCB 1221	< 0.001
4,4' DDD	<0.0001	PCB 1232	< 0.001
4,4' DDT	<0.0001	PCB 1242	< 0.001
ENDOSULFAN SULFATE	<0.0001	PCB 1248	< 0.001
CHLORDANE	< 0.001	PCB 1254	< 0.001
TOXAPHENE	< 0.001	PCB 1260	< 0.001

DATE SAMPLE REC'D: 08-12-86 ANALYST: MK MK MK DATE OF ANALYSIS: 10-29-86

DAVID W. COLLINS
DIRECTOR

10-29-86
DATE

BELLEVILLE LABORATORY
AMERICAN WATER WORKS SERVICE COMPANY, INC.
1115 SOUTH ILLINOIS STREET
BELLEVILLE, ILLINOIS 62220•(618)233-3600

CHEMICAL ANALYSIS REPORT

PRIORITY POLLUTANTS
PURGEABLES
METHOD EPA 624

COMPANY: KEYSTONE WATER CO.
NORRISTOWN DISTRICT
196 W. JOHNSON HWY.
NORRISTOWN , PA 19401

LAB CERTIFICATION NO. 68-269

cc: G. CHRISTENSEN
cc: R. CROKER
cc:

SAMPLE INFORMATION

SAMPLE ID	TYPE	SAMPLE LOCATION	DATE	TIME	SAMPLER
864377	RAW	INTAKE	08-11-86	10:30AM	L.HOWELL

COMPOUND	RESULT (mg/L)	COMPOUND	RESULT (mg/L)
METHYL CHLORIDE	< 0.001	trans-1,3-DICHLOROPROPENE	< 0.001
METHYL BROMIDE	< 0.001	TRICHLOROETHYLENE	< 0.001
VINYL CHLORIDE	< 0.001	DIBROMOCHLORMETHANE	< 0.001
CHLORETHANE	< 0.001	cis-1,3-DICHLOROPROPENE	< 0.001
METHYLENE CHLORIDE	< 0.001	1,1,2-TRICHLOROETHANE	< 0.001
TRICHLOROFLUOROMETHANE	< 0.001	BENZENE	< 0.001
,1-DICHLOROETHYLENE	< 0.001	2-CHLOROETHYLVINYLETHER	< 0.001
,1-DICHLOROETHANE	< 0.001	BROMOFORM	< 0.001
CHLOROFORM	< 0.001	TETRACHLOROETHYLENE	< 0.001
trans-1,2-DICHLOROETHYLENE	< 0.001	1,1,2,2-TETRACHLOROETHANE	< 0.001
1,2-DICHLOROETHANE	< 0.001	TOLUENE	< 0.001
1,1,1-TRICHLOROETHANE	< 0.001	CHLOROBENZENE	< 0.001
CARBON TETRACHLORIDE	< 0.001	ETHYLBENZENE	< 0.001
BROMODICHLOROMETHANE	< 0.001	ACROLEIN	< 0.001
1,2-DICHLOROPROPANE	< 0.001	ACRYLONITRILE	< 0.001
		DICHLORODIFLUOROMETHANE	<0.001

DATE SAMPLE REC'D: 08-12-86 ANALYST: MK MK MK DATE OF ANALYSIS: 9-29-86

DAVID W. COLLINS
DIRECTOR

10-29-86
DATE

BELLEVILLE LABORATORY
AMERICAN WATER WORKS SERVICE COMPANY, INC.
1115 SOUTH ILLINOIS STREET
BELLEVILLE, ILLINOIS 62220•(618)233-3600

CHEMICAL ANALYSIS REPORT

PRIORITY POLLUTANTS
BASE/NEUTRAL EXTRACTABLES
METHOD EPA 625

COMPANY: PENNSYLVANIA-AMERICAN WATER CO LAB CERTIFICATION NO. 68-269
NORRISTOWN DISTRICT
196 W. JOHNSON HWY.
NORRISTOWN , PA 19401

cc: G. CHRISTENSEN
cc: R. CROKER
cc:

SAMPLE INFORMATION

SAMPLE ID	TYPE	SAMPLE LOCATION	DATE	TIME	SAMPLER
870164	RAW	RAW WATER	01-14-87	11:00AM	J.DETWILER

COMPOUND	RESULT (mg/L)	COMPOUND	RESULT (mg/L)
1,3-DICHLOROBENZENE	< 0.010	N-NITROSODIPHENYLAMINE	< 0.010
1,4-DICHLOROBENZENE	< 0.010	HEXACHLOROBENZENE	< 0.010
HEXACHLOROETHANE	< 0.010	4-BROMOPHENYL PHENYL ETHER	< 0.010
bis(2-CHLOROETHYL)ETHER	< 0.010	PHENANTHRENE	< 0.010
1,2-DICHLOROBENZENE	< 0.010	ANTHRACENE	< 0.010
bis(2-CHLOROISOPROPYL)ETHER	< 0.010	Di-n-BUTYL PHTHALATE	< 0.010
N-NITROSO-di-n-PROPYLAMINE	< 0.010	FLUORANTHENE	< 0.010
NITROBENZENE	< 0.010	PYRENE	< 0.010
HEXACHLOROBUTADIENE	< 0.010	BENZIDINE	< 0.010
1,2,4-TRICHLORBENZENE	< 0.010	BUTYLBENZYL PHTHALATE	< 0.010
ISOPHORONE	< 0.010	bis(2-ETHYHEXYL)PHTHALATE	< 0.010
NAPHTHALENE	< 0.010	CHRYSENE	< 0.010
bis(2-CHLOROETHOXY)METHANE	< 0.010	BENZO(a)ANTHRACENE	< 0.010
HEXACHLOROCYCLOPENTADIENE	< 0.010	3,3'-DICHLOROBENZIDINE	< 0.010
2-CHLORONAPHTHALANE	< 0.010	Di-n-OCTYL PHTHALATE	< 0.010
ACENAPHTHYLENE	< 0.010	BENZO(b)FLUORANTHENE	< 0.010
ACENAPHTHENE	< 0.010	BENZO(k)FLUORANTHENE	< 0.010
DIMETHYLPHTHALATE	< 0.010	BENZO(a)PYRENE	< 0.010
2,6-DINITROTOLUENE	< 0.010	INDENOL(1,2,3-c,d)PYRENE	< 0.010
FLUORENE	< 0.010	DIBENZO(a,h)ANTHRACENE	< 0.010
4-CHLOROPHENYL PHENYL ETHER	< 0.010	BENZO(g,h,i)PERYLENE	< 0.010
2,4-DINITROTOLUENE	< 0.010	N-NITROSODIMETHYLAMINE	< 0.010
1,2-DIPHENYLHYDRAZINE	< 0.010	bis(CHLOROMETHYL)ETHER	< 0.010
DIETHYL PHTHALATE	< 0.010	DIOXIN	< 0.010

DATE SAMPLE REC'D: 01-15-87 ANALYST: JMB NK NK DATE OF ANALYSIS: 1-22-87

[illegible]

David Collins /NK 1/28/87
DAVID W. COLLINS DATE
DIRECTOR

AR300935

BELLEVILLE LABORATORY
AMERICAN WATER WORKS SERVICE COMPANY, INC.
1115 SOUTH ILLINOIS STREET

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CHEMICAL ANALYSIS REPORT

PRIORITY POLLUTANTS
PESTICIDES/ACID EXTRACTABLES
METHOD EPA 625

COMPANY: PENNSYLVANIA-AMERICAN WATER CO LAB CERTIFICATION NO. 68-269
NORRISTOWN DISTRICT
196 W. JOHNSON HWY.
NORRISTOWN , PA 19401

cc: G. CHRISTENSEN
cc: R. CROKER
cc:

SAMPLE INFORMATION

SAMPLE ID	TYPE	SAMPLE LOCATION	DATE	TIME	SAMPLER
870164	RAW	RAW WATER	01-14-87	11:00AM	J.DETWILER

PESTICIDES	RESULT (mg/L)	ACID/EXTRACTABLES	RESULT (mg/L)
alpha BHC	<0.0001	2-CHLOROPHENOL	< 0.010
gamma BHC (LINDANE)	<0.0001	2-NITROPHENOL	< 0.010
beta BHC	<0.0001	PHENOL	< 0.010
HEPTACHLOR	<0.0001	2,4-DIMETHYLPHENOL	< 0.010
delta BHC	<0.0001	2,4-DICHLOROPHENOL	< 0.010
ALDRIN	<0.0001	2,4,6-TRICHLOROPHENOL	< 0.010
HEPTACHLOR EPOXIDE	<0.0001	4-CHLORO-3-METHYLPHENOL	< 0.010
ENDOSULFAN I	<0.0001	PENTACHLOROPHENOL	< 0.010
DIELDRIN	<0.0001	2-METHYL-4,6-DINITROPHENOL	< 0.025
4,4' DDE	<0.0001	4-NITROPHENOL	< 0.025
ENDRIN	<0.0001	2,4-DINITROPHENOL	< 0.025
ENDRIN ALDEHYDE	<0.0001	PCB 1016	< 0.001
ENDOSULFAN II	<0.0001	PCB 1221	< 0.001
4,4' DDD	<0.0001	PCB 1232	< 0.001
4,4' DDT	<0.0001	PCB 1242	< 0.001
ENDOSULFAN SULFATE	<0.0001	PCB 1248	< 0.001
CHLORDANE	< 0.001	PCB 1254	< 0.001
TOXAPHENE	< 0.001	PCB 1260	< 0.001

DATE SAMPLE REC'D: 01-15-87 ANALYST: JMB NK NK DATE OF ANALYSIS: 1-21-87

David Collins /NK 1/29/87
DAVID W. COLLINS DATE
DIRECTOR

BELLEVILLE LABORATORY
AMERICAN WATER WORKS SERVICE COMPANY, INC.
115 SOUTH ILLINOIS STREET
BELLEVILLE, ILLINOIS 62220•(618)235-3600

CHEMICAL ANALYSIS REPORT

PRIORITY POLLUTANTS
PURGEABLES
METHOD EPA 624

COMPANY: PENNSYLVANIA-AMERICAN WATER CO LAB CERTIFICATION NO. 68-269
NORRISTOWN DISTRICT
196 W. JOHNSON HWY.
NORRISTOWN , PA 19401

cc: G. CHRISTENSEN
cc: R. CROKER
cc:

SAMPLE INFORMATION

SAMPLE ID	TYPE	SAMPLE LOCATION	DATE	TIME	SAMPLER
870164	RAW	RAW WATER	01-14-87	11:00AM	J.DETWILER

COMPOUND	RESULT (mg/L)	COMPOUND	RESULT (mg/L)
METHYL CHLORIDE	< 0.001	trans-1,3-DICHLOROPROPENE	< 0.001
METHYL BROMIDE	< 0.001	TRICHLOROETHYLENE	< 0.001
VINYL CHLORIDE	< 0.001	DIBROMOCHLORMETHANE	< 0.001
CHLORETHANE	< 0.001	cis-1,3-DICHLOROPROPENE	< 0.001
METHYLENE CHLORIDE	< 0.001	1,1,2-TRICHLOROETHANE	< 0.001
TRICHLOROFLUOROMETHANE	< 0.001	BENZENE	< 0.001
1,1-DICHLOROETHYLENE	< 0.001	2-CHLOROETHYLVINYLETHER	< 0.001
1,1-DICHLOROETHANE	< 0.001	BROMOFORM	< 0.001
CHLOROFORM	0.001	TETRACHLOROETHYLENE	< 0.001
trans-1,2-DICHLOROETHYLENE	< 0.001	1,1,2,2-TETRACHLOROETHANE	< 0.001
1,2-DICHLOROETHANE	< 0.001	TOLUENE	< 0.001
1,1,1-TRICHLOROETHANE	< 0.001	CHLOROBENZENE	< 0.001
CARBON TETRACHLORIDE	< 0.001	ETHYLBENZENE	< 0.001
BROMODICHLOROMETHANE	< 0.001	ACROLEIN	< 0.001
1,2-DICHLOROPROPANE	< 0.001	ACRYLONITRILE	< 0.001
		DICHLORODIFLUOROMETHANE	<0.001

DATE SAMPLE REC'D: 01-15-87 ANALYST: JMB NK NK DATE OF ANALYSIS: 1-20-87

David Collins /NK 1/28/87
DAVID W. COLLINS DATE
DIRECTOR

BELLEVILLE LABORATORY
AMERICAN WATER WORKS SERVICE COMPANY, INC.
215 SOUTH ILLINOIS STREET
BELLEVILLE, ILLINOIS 62220•(618)235-3600

AR300937

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401

301-224-2740
FTS-922-3752

DATE : April 14, 1986

SUBJECT: GC/MS Analysis of MER Project Samples 860327-01,-02,-06,-07,-11,-12,-15, -16,-17,-21,-22

FROM : John Austin JA
Chemist

Joseph L. Slayton JS
Chemist

TO : Daniel K. Donnelly
Chief, Annapolis Lab

The samples were examined for the presence of organic compounds listed as extractable Priority Pollutants and Hazardous Substance List Compounds, using fused silica capillary column/gas chromatography/mass spectrometry. Concentrations of these compounds were determined using the relative response of authentic standards to the closest internal standard. These values have been reported in the Extractable Organics Analysis Target Compound Data Sheet. Only those for which results are reported were detected. Sample target compound values less than the quantitation limit were labeled with a J. This indicates that the mass spectra obtained for the sample met the identification criteria, yet the quantity present was below the level for which the instrument accurately quantitates. These results (J) should be considered estimated quantities. The NQL (nominal quantitation limit) listed in the Target Compound Data Sheet is the quantitation limit that has been determined for this method. The actual quantitation limit for a sample reflects the NQL as well as any dilution/concentration factor specific for each sample.

The samples were also examined for the presence of compounds in addition to those on the Target Compound list. Authentic standards were not available to verify these results. Tentative identification of these compounds was made on the comparison of sample spectra to the EPA/NIH Mass Spectral Library. Concentrations for these compounds were estimated based on the response of the closest internal standard and the assumption that the instrument response for a given tentative compound was the same as the instrument response for the internal standards. These identifications have been reported as tentative identifications with the associated quantitation values reported as estimated concentrations.

Samples 860327-02,-07,-17, and -22, were concentrated to 100 ul by nitrogen blow down. Sample 860327-12 was lost due to a laboratory accident.

All sample extracts were corrected for any blank contamination.

Sample Description:

Lab No.	Description
860327-01	Danville, finished, comp.
-02	Danville, finished dup., comp.
-06	Philadelphia, finished, comp.
-07	Philadelphia, finished dup., comp.
-11	Pottstown, finished, comp.
-12	Pottstown, finished dup., comp.
-15	Pottstown, blank, grab
-16	Norristown, finished, comp.
-17	Norristown, finished dup., comp.
-21	Control, Susquehanna River
-22	Control, Susquehanna River, dup.

JA/JS:er

cc: B. R. Fletcher
OCO

AR300939

SAMPLE ID. 86032707 Philadelphia

WATER: COMBINED ACID & BASE NEUTRAL EXTRACT

ORGINAL SAMPLE VOLUME (ML) 10000.0
FINAL EXT., VOLUME (ML) 1.0
EXT. DILUTION FACTOR 1.000
DETECTION LIMIT 0.100 PPB, ASSUMING 1NG/UL D.L. IN EXTRACT
CONC. OF INT. STDS. (NG/UL) 40.

OTHER COMPOUNDS

SCAN NO.	TENTATIVE IDENTIFICATION	STD.	AREA	EST. CONC. PPB
	PROPANE, 1,2,3-TRICHLORO-			
672	96-18-4	1	4896. TRACE	0.06
	BENZALDEHYDE			
735	100-52-7 no match	1	6137. TRACE	0.07
	D4-1,4-DICHLOROBENZENE*INTERNAL STD. #1			
809	- -	1	340460.	40.
	3-PENTANOL, 2-METHYL-			
821	565-67-3 no match	1	3252. TRACE	0.04
	PHOSPHORIC ACID, DIETHYL ESTER			
947	598-02-7 no match	2	5334. TRACE	0.06
	*** D8-NAPHTHALENE*** INTERNAL STD. #2			
1044	- -	2	356201.	40.
	D10-ACENAPHTHENE INTERNAL STD. #3			
1391	- -	3	278963.	40.
	1H-INDOLE, 2,3-DIHYDRO-4-METHYL-			
1421	62108-16-1 no criteria	3	6572. TRACE	0.09
	*** D10-PHENANTHRENE***INTERNAL STD.			
1685	- -	4	237220.	40.
	D12-CHRYSENEINTERNAL STD. #5			
2237	- -	5	178743.	40.
	D12-PERYLENEINTERNAL STD. #6			
2754	- -	6	78715.	40

AR300940

SAMPLE ID. 86032717 Neristown

WATER: COMBINED ACID & BASE NEUTRAL EXTRACT

ORGINAL SAMPLE VOLUME (ML) 10000.0
FINAL EXT., VOLUME (ML) 1.0
EXT. DILUTION FACTOR 1.000
DETECTION LIMIT 0.100 PPB, ASSUMING 1NG/UL D.L. IN EXTRACT
CONC. OF INT. STDS. (NG/UL) 40.

OTHER COMPOUNDS

SCAN NO.	TENTATIVE IDENTIFICATION	STD.	AREA		EST. CONC. PPB
	PROPANE, 1,2,3-TRICHLORO-				
691	96-18-4	1	5479.		0.1
	BENZALDEHYDE				
754	100-52-7	1	3270.	TRACE	0.06
	D4-1,4-DICHLOROBENZENE*INTERNAL STD. #1				
928	- -	1	215701.		40.
	*** D8-NAPHTHALENE*** INTERNAL STD. #2				
1064	- -	2	271360.		40.
	D10-ACENAPHTHENE INTERNAL STD. #3				
1411	- -	3	227235.		40.
	1H-INDOLE, 2,3-DIHYDRO-4-METHYL-				
1440	62108-16-1	3	7271.		0.1
	*** D10-PHENANTHRENE***INTERNAL STD.				
1705	- -	4	196041.		40.
	PROPANOIC ACID, 2-HYDROXY-, BUTYL ESTER				
2149	138-22-7	5	2482.	TRACE	0.07
	D12-CHRYSENEINTERNAL STD. #5				
2257	- -	5	138694.		40.
	D12-PERYLENEINTERNAL STD. #6				
2772	- -	6	64126.		40.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401

301-224-2740
FTS-922-3752

DATE : May 6, 1986

SUBJECT: Pesticides/PCB Analysis for MER Project
860327-01, 02, 06, 07, 11, 12, 16, 17, 21, 22

FROM : James Jerpe JJ
Chemist

TO : Daniel K. Donnelly
Chief, Annapolis Lab

THRU : John Austin JA
Team Leader, Organic Analysis Section

Samples were examined for the presence of PCBs.

Sample extracts were chromatographed on a SE-54 narrow-bore capillary column temperature programmed to 230°C using electron-capture detection. Known concentrations of authentic standards were chromatographed under the sample conditions whereby relative retention times were compared to the elution of the standards.

Attached is a list of standards whose relative retention times were compared with those of the sample and the lowest detection limit for each compound.

Sample Description and Results:

Lab No.	Description	PCB ug/L
860327-01	Danville, finished, comp.	N.D.
-02	Danville, finished dup., comp.	N.D.
-06	Philadelphia, finished, comp.	N.D.
-07	Philadelphia, finished dup., comp.	N.D.
-11	Pottstown, finished, comp.	N.D.
-12	Pottstown, finished dup., comp.	N.D.
-16	Norristown, finished, comp.	N.D.
-17	Norristown, finished dup., comp.	N.D.
-21	Control, Susquehanna River	N.D.
-22	Control, Susquehanna River dup.	N.D.

N.D. = None Detected

As a quality assurance procedure, a mixture of 500 picograms each Endrin/PP'DDT Methanol solution of EPA standards was used to monitor degradation on the capillary column. The ratio of the sum of degraded product peak areas to the individual standards is less than one percent. Pesticide standards concentrations used were also cross-referenced to Supelco 4-8858 standard mix to compare EC Detector response.

JJ:ad

AR300942

cc: B. B. Fletcher BAF

PESTICIDE/PCBS PRIORITY POLLUTANT COMPOUND DETECTION LIMITS

Parameter	Cas Number	Water ppb
Aldrin	309-00-2	0.003
Alpha BHC	319-84-6	0.002
Alpha Endosulfan	959-98-8	0.005
Beta BHC	319-85-7	0.004
Beta Endosulfan	33213-65-9	0.01
Chlordane	57-74-9	0.04
4,4'DDD	72-54-8	0.012
4,4'DDE	72-55-9	0.006
4,4'DDT	50-29-3	0.016
Delta BHC	319-86-8	0.004
Dieldrin	60-57-1	0.006
Endosulfan Sulfate	1031-07-8	0.03
Endrin	72-20-8	0.009
Endrin Aldehyde	7421-93-4	0.023
Gamma BHC (Lindane)	58-89-9	0.002
Heptachlor	76-44-8	0.002
Heptachlor Epoxide	1024-57-3	0.004
Toxaphene	8001-35-2	0.40
PCB 1016	12674-11-2	0.04
PCB 1221	11104-28-2	0.10
PCB 1232	11141-16-5	0.10
PCB 1242	53469-21-9	0.05
PCB 1248	12672-29-6	0.08
PCB 1254	11097-69-1	0.08
PCB 1260	11096-82-5	0.15

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401

301-224-2740
FTS-922-3752

DATE : May 7, 1986

SUBJECT: Metals Determinations of MER Project Samples
860327-01-04, 06-09, 11-19, 21, 22

FROM : Peggy S. Zawodny — Physical Science Technician
Stephen E. Buchanan — Environmental Scientist
Ronald H. Altman — Chemist

TO : Daniel K. Donnelly
Chief, Annapolis Laboratory

THRU : Bernard A. Sammons
Acting Metal's Team Leader, Inorganic Analysis Section

Samples 860327-01-04, 06-09, 11-19, 21 and 22 were analyzed by furnace and cold vapor atomic absorption spectroscopy and inductively coupled plasma optical emission spectrometry. The results are presented in the attached table.

Additional quality control data are available upon request.

Sample Description:

Lab No.	Description
860327-01	Danville, finished, comp.
-02	Danville, finished dup., comp.
-03	Danville, raw, comp.
-04	Danville, raw dup., comp.
-06	Philadelphia, finished, comp.
-07	Philadelphia, finished dup., comp.
-08	Philadelphia, raw, comp.
-09	Philadelphia, raw dup., comp.
-11	Pottstown, finished, comp.
-12	Pottstown, finished dup., comp.
-13	Pottstown, raw, comp.
-14	Pottstown, raw dup., comp.
-15	Pottstown, Blank, grab
-16	Norristown, finished, comp.
-17	Norristown, finished dup., comp.
-18	Norristown, raw, comp.
-19	Norristown, raw dup., comp.
-21	Control, Susquehanna River
-22	Control, Susquehanna River, dup.

PSZ/SEB/RHA:ad

cc: B. B. Fletcher
OCO

AR300944

U.S. Environmental Protection Agency, Region III, Central Regional Laboratory

Project Name: MER Project: Danville, Philadelphia, Pottstown, Norristown

Sample Number:	Danville-for 860327-01 ug/L	Danville-for 860327-02 ug/L	Danville net 860327-03 ug/L	[illegible] 860327-04 ug/L	Pottstown-for 860327-06 ug/L	[illegible] 860327-07 ug/L
METALS						
Aluminum	--	--	538±11(99%)	576	--	--
Arsenic	<5.0*(MSA)	<5.0(MSA)	--	--	<5.0(MSA)	<5.0(MSA)
Cadmium	<5	<5	--	--	--	--
Chromium	--	--	<10*(103%)	<10	--	--
Lead	<5.0(88%)	<5.0(86%)	<5.0*(MSA)	<5.0(MSA)	<5.0(99%)	<5.0(97%)
Mercury	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	<40	<40	<40*(97%)	<40	<40	<40*(93%)
Zinc	--	--	19±0(104%)	22	--	--

MSA = Method of Standard Additions
*Analyzed in duplicate, both values below specified detection limit.

AR300945

U.S. Environmental Protection Agency, Region III, Central Regional Laboratory

Project Name: MER Project: Danville, Philadelphia, Pottstown, Norristown

Sample Number:	860327-08	860327-09	860327-11	860327-12	860327-13	860327-14
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
METALS						
Aluminum	<200	<200	--	--	<200*(114%)	<200
Arsenic	--	--	<5.0(MSA)	<5.0*(MSA)	--	--
Cadmium	--	--	<5	<5	--	--
Chromium	<10	<10	--	--	<10*(102%)	<10
Lead	<5.0*(106%)	<5.0(101%)	<5.0(97%)	<5.0(95%)	<5.0(108%)	<5.0(112%)
Mercury	<0.2	<0.2	<0.2	<0.2*(103%)	<0.2	<0.2
Nickel	<40	<40	<40	<40	<40*(98%)	<40
Zinc	30	27	--	--	36±1(110%)	34

MSA = Method of Standard Additions
*Analyzed in duplicate, both values below specified detection limit.

AR300946

U.S. Environmental Protection Agency, Region III, Central Regional Laboratory

Project Name: MER Project: Danville, Philadelphia, Pottstown, Norristown

Sample Number:	Method Blank 860327-15 ug/L	Norristown 860327-16 ug/L	Norristown 860327-17 ug/L	Norristown 860327-18 ug/L	Norristown 860327-19 ug/L	[illegible] 860327-21 ug/L	[illegible] 860327-22 ug/L
METALS							
Aluminum	<200	--	--	<200	<200	467	490±3(100%)
Arsenic	<5.0	<5.0(MSA)	<5.0(MSA)	--	--	<5.0*(MSA)	<5.0(MSA)
Cadmium	<5	--	--	--	--	<5	<5*(92%)
Chromium	<10	--	--	<10	<10	<10	<10*(93%)
Lead	<5.0	<5.0*(108%)	<5.0(99%)	<5.0(108%)	<5.0(MSA)	<5.0(MSA)	<5.0*(MSA)
Mercury	<0.2	<0.2	<0.2	<0.2*(108%)	<0.2	<0.2	<0.2
Nickel	<40	<40	<40*(97%)	<40	<40	<40	<40*(95%)
Zinc	6	--	--	29	28	15	20±0(110%)

MSA = Method of Standard Additions
*Analyzed in duplicate, both values below specified detection limit.

AR300947

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401

301-224-2740
FTS-922-3752

DATE : May 2, 1986

SUBJECT: Water Samples for VOC's by GC/MS,
MER Project; R301-L0302 + L0303; (4/4/86-4/10/86); Samples 860327-01-23

FROM : Rick Dreisch
Chemist

TO : Daniel K. Donnelly
Chief, Annapolis Lab

THRU : John Austin
Team Leader, Organic Analysis Section

The above samples were analyzed for the presence of volatile organic compounds amenable to purge and trap and identifiable by GC/MS.

The aliquots used for these samples were composites of 25 ml instead of the usual 5 ml.

Sample Description:

Lab No.	Description
860327-01	Danville, finished, comp.
-02	Danville, finished dup., comp.
-03	Danville, raw, comp.
-04	Danville, raw dup. comp.
-05	Danville, blank, grab
-06	Philadelphia, finished, comp.
-07	Philadelphia, finished dup., comp.
-08	Philadelphia, raw, comp.
-09	Philadelphia, raw dup., comp.
-10	Philadelphia, blank, grab
-11	Pottstown, finished, comp.
-12	Pottstown, finished dup., comp.
-13	Pottstown, raw, comp.
-14	Pottstown, raw dup., comp.
-15	Pottstown, blank, grab
-16	Norristown, finished, comp.
-17	Norristown, finished dup., comp.
-18	Norristown, raw, comp.
-19	Norristown, raw dup., comp.
-20	Norristown, blank
-21	Control, Susquehanna River
-22	Control, Susquehanna River, dup.
-23	Control, Susquehanna River, blank

Sampling Days Used:

Lab No.	Sampling Days
860327-01	3/21, 3/22, 3/23, 3/24, 3/25
-02	3/21, 3/22, 3/23, 3/24, 3/25
-03	3/22, 3/23, 3/24, 3/25, 3/26
-04	3/22, 3/23, 3/24, 3/25, 3/26
-05	3/17
-06	3/20, 3/21, 3/22, 3/23, 3/25
-07	3/20, 3/21, 3/22, 3/23, 3/24
-08	3/20, 3/21, 3/22, 3/23, 3/25
-09	3/21, 3/22, 3/23, 3/24, 3/25
-10	3/17
-11	3/21, 3/22, 3/23, 3/24, 3/25
-12	3/20, 3/21, 3/22, 3/23, 3/24
-13	3/20, 3/21, 3/22, 3/23, 3/24
-14	3/20, 3/21, 3/22, 3/23, 3/25
-15	3/17
-16	3/20, 3/21, 3/22, 3/23, 3/25
-17	3/20, 3/21, 3/22, 3/24, 3/25
-18	3/20, 3/21, 3/22, 3/23, 3/24
-19	3/20, 3/21, 3/22, 3/23, 3/25
-20	3/17
-21	3/21, 3/22, 3/23, 3/24, 3/25
-22	3/20, 3/21, 3/22, 3/25, 3/26
-23	3/17

Nonetam

QA Summary:

	Average % Recovery		
	4/4/86	4/7/86	4/8/86
Bromochloromethane	104 ± 4	103 ± 6	111 ± 5
1,4-Dichlorobutane	81 ± 6	84 ± 7	87 ± 7
para-Bromofluorobenzene	103 ± 5	93 ± 5	97 ± 5
n =	9	10	7

Non-Standard Equatable Compounds Found:

	Danville fm		Danville "tau"	
	860327-01 ug/L	860327-02 ug/L	860327-03 ug/L	860327-04 ug/L
2,4,4-Trimethyl-2-Pentene	0.3J	0.5J	--	--
Unknown (1503)	--	0.4J	--	--
1,1-Dichloro-2-Propanone	--	0.5J	--	--
1-Chloro-3-Fluorobenzene	--	0.2J	--	--

Non-Standard Equatable Compounds Found (con't.) Philadelphia

	860327-06 ug/L	860327-07 ug/L	860327-08 ug/L	860327-09 ug/L
2,4,4-Trimethyl-2-Pentene	0.3J	0.2J	--	--
Unknown (1503)	0.8J	0.8J	--	--
1,1-Dichloro-2-propanone	0.6J	0.5J	--	--
1-Chloro-3-Fluorobenzene	0.4J	0.5J	--	--
Cis-1,2-dichloroethylene	0.2J	0.2J	0.3J	0.3J
Unknown (1429)	0.2J	0.2J	--	--
1,1,1-Trichloro-2-Propanone	0.2J	0.2J	--	--
1,2,3-Trichloropropane	0.1J	0.1J	0.1J	0.1J

	860327-11 ug/L	860327-12 ug/L	860327-13 ug/L	860327-14 ug/L
cis-1,2-Dichloroethylene	0.6J	0.6J	0.9J	0.8J
Unknown (1503)	0.8J	1.0J	--	--
2,4,4-Trimethyl-2-Pentene	0.2J	0.1J	--	--
1,1-Dichloro-2-Propanone	0.3J	0.3J	--	--
Unknown (1644)	0.2J	0.2J	--	--
1-Chloro-3-Fluorobenzene	0.3J	0.3J	--	--
1-Chloro-2,2-Dimethylpropane	0.1J	0.2J	--	--
1-Chloro-2-Methyl Benzene	0.2J	0.2J	--	--
Trichloronitromethane?	0.1J	0.1J	--	--
Trimethylbenzene isomer	--	--	0.4J	0.4J

	860327-16 ug/L	860327-17 ug/L	860327-18 ug/L	860327-19 ug/L
Unknown (1503)	0.6J	0.6J	--	--
1,1-Dichloro-2-Propanone	0.4J	--	--	--
1-Chloro-3-Fluorobenzene	0.3J	0.3J	--	--
Norristown 1,2,3-Trichloropropane	0.2J	0.2J	0.2J	0.2J
cis-1,2-Dichloroethylene	--	--	0.4J	0.4J
Trimethylbenzene isomer	--	--	0.3J	0.3J

Samples 860327-21 & 22 had no reportable non-standard equatable compounds.

RD:er 1950

cc: B. B. Fletcher
QCO

AR300950

[illegible]	ug/l						
[illegible]NZENE	ug/l	.05	.05	1	.05	.05	2

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT4 ***

6/11/87

PERIOD FROM 7/01/85 TO 6/30/86

		QUEEN LANE INTAKE			QL HIGH SERVICE		
		AVG	MAX	NUM SAMPLS	AVG	MAX	NUM SAMPLS
METHYLISOBUTYLKETONE	ug/l						
TOLUENE	ug/l	.05	.05	2	.05	.05	2
ETHYL BENZENE	ug/l	.05	.05	2	.05	.05	2
CUMENE	ug/l	.05	.05	2	.05	.05	2
o-XYLENE	ug/l	.05	.05	2	.05	.05	2
m-XYLENE	ug/l	.05	.05	2	.05	.05	2
[illegible]YLENE	ug/l	.05	.05	2	.05	.05	2
o-DICHLOROBENZENE	ug/l	.05	.05	1	.05	.05	2
m-DICHLOROBENZENE	ug/l	.05	.05	1	.05	.05	2
p-DICHLOROBENZENE	ug/l	.05	.05	2	.05	.05	2
STYRENE	ug/l	.05	.05	2	.05	.05	2

* ALL RESULTS IN MG/L EXCEPT AS NOTED

1
1
1
8
5
1

AR300951

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT4 ***

6/11/87

PERIOD FROM 7/01/85 TO 6/30/86

		QUEEN LANE INTAKE			QL HIGH SERVICE		
		AVG	MAX	NUM SAMPLS	AVG	MAX	NUM SAMPLS
METHYLENE CHLORIDE	ug/l	.21	1.40	44	.27	2.20	47
11DICHLOROETHYLENE	ug/l	.05	.05	46	.05	.05	51
1,1-DICHLOROETHANE	ug/l	.05	.05	46	.05	.05	51
t12DICHLOROETHYLENE	ug/l	.05	.05	46	.05	.05	51
CHLOROFORM	ug/l	.11	.50	46	28.75	69.00	51
1,2-DICHLOROETHANE	ug/l	.05	.05	46	.05	.05	51
1,1,1TRICHLOROETHANE	ug/l	.06	.20	45	.08	.40	51
CARBON TETRACHLORIDE	ug/l	.05	.05	46	.05	.10	51
BROMODICHLOROMETHANE	ug/l	.05	.05	46	13.82	31.00	51
1,2-DICHLOROPROPANE	ug/l	.05	.05	46	.05	.05	51
112TRICHLOROETHYLENE	ug/l	.05	.05	46	.07	.30	51
DIBROMOCHLOROMETHANE	ug/l	.05	.05	46	4.97	16.00	51
2CLORETHYLVINYLETHER	ug/l	.10	.10	46	.10	.10	49
BROMOFORM	ug/l	.10	.10	46	.35	1.60	51
123TRICHLOROPROPANE	ug/l	.06	.10	46	.08	.30	51
TETRACHLOROETHYLENE	ug/l	.13	3.80	46	.06	.20	51
CHLOROBENZENE	ug/l	.10	.10	46	.10	.10	48
BIS2CHLOROETHYLETHER	ug/l	1.00	1.00	10	1.00	1.00	15
TOTAL TRIHALOMETHANE	ug/l	.11	.50	46	47.80	89.00	51
ACETONE	ug/l						
DIMETHOXYMETHANE	ug/l						
TETRAHYDROFURAN	ug/l						
METHYL ETHYL KETONE	ug/l						

AR300952

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT4 ***

6/11/87

PERIOD FROM 7/01/85 TO 6/30/86

		BELMONT INTAKE			BELMONT HIGH SERVIC		
		AVG	MAX	NUM SAMPLS	AVG	MAX	NUM SAMPLS
METHYLENE CHLORIDE	ug/l	.25	1.30	45	.20	.90	43
11DICHLOROETHYLENE	ug/l	.05	.05	46	.05	.05	50
1,1-DICHLOROETHANE	ug/l	.05	.05	46	.05	.05	50
t12DICHLOROETHYLENE	ug/l	.05	.10	46	.05	.05	50
CHLOROFORM	ug/l	.10	.40	46	27.65	54.00	50
1,2-DICHLOROETHANE	ug/l	.05	.05	46	.05	.05	50
1,1,1TRICHLOROETHANE	ug/l	.06	.20	45	.09	.50	50
CARBON TETRACHLORIDE	ug/l	.05	.05	46	.05	.10	50
BROMODICHLOROMETHANE	ug/l	.05	.05	46	13.98	31.00	50
1,2-DICHLOROPROPANE	ug/l	.05	.05	46	.05	.05	50
112TRICHLOROETHYLENE	ug/l	.05	.05	46	.09	.20	50
DIBROMOCHLOROMETHANE	ug/l	.05	.05	45	5.52	19.00	50
2CLORETHYLVINYLETHER	ug/l	.10	.10	45	.10	.10	50
BROMOFORM	ug/l	.10	.10	45	.54	2.60	50
123TRICHLOROPROPANE	ug/l	.05	.10	45	.08	.30	50
TETRACHLOROETHYLENE	ug/l	.05	.10	45	.06	.20	50
CHLOROBENZENE	ug/l	.10	.10	45	.10	.10	50
BIS2CHLOROETHYLETHER	ug/l	1.00	1.00	10	1.00	1.00	17
TOTAL TRIHALOMETHANE	ug/l	.10	.40	46	47.56	86.00	50
ETONE	ug/l						
DIMETHOXYMETHANE	ug/l						
TETRAHYDROFURAN	ug/l						
METHYL ETHYL KETONE	ug/l						

AR300953

DIOXANE	ug/l						
ENZENE	ug/l	.13	.20	2	.05	.05	2

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT4 ***

6/11/87

PERIOD FROM 7/01/85 TO 6/30/86

		BELMONT INTAKE			BELMONT HIGH SERVICE		
		AVG	MAX	NUM SAMPLS	AVG	MAX	NUM SAMPLS
METHYLISOBUTYLKETONE	ug/l						
TOLUENE	ug/l	.13	.20	2	.05	.05	2
ETHYL BENZENE	ug/l	.05	.05	2	.05	.05	2
CUMENE	ug/l	.05	.05	2	.05	.05	2
o-XYLENE	ug/l	.05	.05	2	.05	.05	2
m-XYLENE	ug/l	.05	.05	2	.05	.05	2
p-XYLENE	ug/l	.05	.05	2	.05	.05	2
o-DICHLOROBENZENE	ug/l	.05	.05	1	.05	.05	2
m-DICHLOROBENZENE	ug/l	.05	.05	1	.05	.05	2
p-DICHLOROBENZENE	ug/l	.05	.05	1	.05	.05	2
STYRENE	ug/l	.05	.05	2	.05	.05	2

* ALL RESULTS IN MG/L EXCEPT AS NOTED

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	m-XYLENE (ug/l)	p-XYLENE (ug/l)	o-DICHLORO BENZENE (ug/l)	m-DICHLORO BENZENE (ug/l)	p-DICHLORO BENZENE (ug/l)	p-STYRENE (ug/l)
06/27/83	.20	------	------	------	------	------
AVERAGE	.20					
MINIMUM	.20					
MAXIMUM	.20					
STD DEV						
COEFF OF VAR						
# OF SAMPLES	1	0	0	0	0	0

% >
# >

% <
# <

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	m-XYLENE (ug/l)	p-XYLENE (ug/l)	o-DICHLORO BENZENE (ug/l)	m-DICHLORO BENZENE (ug/l)	p-DICHLORO BENZENE (ug/l)	p-STYRENE (ug/l)
AVERAGE						
MINIMUM						
MAXIMUM						
STD DEV						
COEFF OF VAR						
# OF SAMPLES	0	0	0	0	0	0

% >
# >

% <
# <

8/22/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

PAGE

BAXTER INTAKE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	m-XYLENE (ug/l)	p-XYLENE (ug/l)	o-DICHLORO BENZENE (ug/l)	m-DICHLORO BENZENE (ug/l)	p-DICHLORO BENZENE (ug/l)	STYRENE (ug/l)
07/19/83	BDL	------	------	------	------	------
04/17/84	.20	------	------	------	------	------
05/08/84	.10	------	------	------	------	------
06/05/84	BDL	------	------	------	------	------
AVERAGE	.10					
MINIMUM	.05					
MAXIMUM	.20					
STD DEV	.07					
COEFF OF VAR	.71					
# OF SAMPLES	4	0	0	0	0	0

% >
# >

% <
# <

8/22/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	m-XYLENE (ug/l)	p-XYLENE (ug/l)	o-DICHLORO BENZENE (ug/l)	m-DICHLORO BENZENE (ug/l)	p-DICHLORO BENZENE (ug/l)	STYRENE (ug/l)
07/18/83	.50	------	------	------	------	------
04/18/84	BDL	------	------	------	------	------
05/09/84	BDL	------	------	------	------	------
06/06/84	.30	------	------	------	------	------
AVERAGE	.22					
MINIMUM	.05					
MAXIMUM	.50					
STD DEV	.22					
COEFF OF VAR	.97					
# OF SAMPLES	4	0	0	0	0	0
% >						
# >						
% <						
# <						

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	m-XYLENE (ug/l)	p-XYLENE (ug/l)	o-DICHLORO BENZENE (ug/l)	m-DICHLORO BENZENE (ug/l)	p-DICHLORO BENZENE (ug/l)	STYRENE (ug/l)
07/03/84	.20	------	BDL	BDL	------	------
08/08/84	BDL	------	BDL	BDL	------	------
09/05/84	.50	------	2.10	.60	------	------
10/10/84	.80	------	1.00	.50	------	------
11/14/84	1.70	------	.60	.70	------	------
12/12/84	1.60	------	.60	.80	------	------
01/02/85	BDL	.20	BDL	BDL	BDL	------
02/06/85	BDL	BDL	BDL	BDL	BDL	------
03/06/85	BDL	BDL	BDL	------	------	------
04/03/85	.30	.10	BDL	BDL	.40	------
05/08/85	BDL	BDL	.10	BDL	BDL	------
06/12/85	BDL	BDL	BDL	BDL	BDL	------
AVERAGE	.45	.08	.40	.27	.12	
MINIMUM	.05	.05	.05	.05	.05	
MAXIMUM	1.70	.20	2.10	.80	.40	
STD DEV	.61	.06	.62	.31	.16	
COEFF OF VAR	1.35	.73	1.58	1.16	1.30	
# OF SAMPLES	12	6	12	11	5	0

% >
# >

% <
# <

AR300959

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	m-XYLENE (ug/l)	p-XYLENE (ug/l)	o-DICHLORO BENZENE (ug/l)	m-DICHLORO BENZENE (ug/l)	p-DICHLORO BENZENE (ug/l)	STYRENE (ug/l)
04/18/84	.20	------	------	------	------	------
05/10/84	.10	------	------	------	------	------
06/06/84	.50	------	------	------	------	------
AVERAGE	.27					
MINIMUM	.10					
MAXIMUM	.50					
STD DEV	.21					
COEFF OF VAR	.78					
# OF SAMPLES	3	0	0	0	0	0

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	m-XYLENE (ug/l)	p-XYLENE (ug/l)	o-DICHLORO BENZENE (ug/l)	m-DICHLORO BENZENE (ug/l)	p-DICHLORO BENZENE (ug/l)	STYRENE (ug/l)
07/05/84	.20	------	BDL	BDL	------	------
08/08/84	.80	------	BDL	.50	------	------
09/05/84	.80	------	BDL	.50	------	------
10/03/84	.60	------	.30	.30	------	------
11/14/84	.60	------	.50	.20	------	------
12/12/84	.90	------	.60	BDL	------	------
01/02/85	BDL	.30	BDL	BDL	BDL	------
02/06/85	BDL	BDL	BDL	BDL	BDL	------
03/06/85	BDL	BDL	BDL	------	------	------
04/03/85	BDL	BDL	.10	BDL	BDL	------
05/08/85	BDL	BDL	.20	BDL	BDL	------
06/12/85	BDL	BDL	.10	BDL	BDL	------
AVERAGE	.35	.09	.17	.17	.05	
MINIMUM	.05	.05	.05	.05	.05	
MAXIMUM	.90	.30	.60	.50	.05	
STD DEV	.36	.10	.19	.18		
COEFF OF VAR	1.02	1.11	1.10	1.09		
# OF SAMPLES	12	6	12	11	5	0

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AR300961

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/03 TO 6/30/04

DATE	m-XYLENE (ug/l)	p-XYLENE (ug/l)	o-DICHLORO BENZENE (ug/l)	m-DICHLORO BENZENE (ug/l)	p-DICHLORO BENZENE (ug/l)	STYRENE (ug/l)
07/19/03	BDL	------	------	------	------	------
04/18/04	BDL	------	------	------	------	------
05/10/04	.30	------	------	------	------	------
06/06/04	.20	------	------	------	------	------
AVERAGE	.15					
MINIMUM	.05					
MAXIMUM	.30					
STD DEV	.12					
COEFF OF VAR	.82					
# OF SAMPLES	4	0	0	0	0	0

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	m-XYLENE (ug/l)	p-XYLENE (ug/l)	o-DICHLORO BENZENE (ug/l)	m-DICHLORO BENZENE (ug/l)	p-DICHLORO BENZENE (ug/l)	STYRENE (ug/l)
07/03/84	.20	----	BDL	BDL	----	----
08/08/84	BDL	----	BDL	BDL	----	----
09/05/84	.70	----	1.70	.70	----	----
10/03/84	.40	----	.50	.50	----	----
11/14/84	.60	----	1.37	.60	----	----
12/12/84	1.50	----	.30	.20	----	----
01/02/85	BDL	.20	BDL	BDL	BDL	BDL
02/06/85	BDL	BDL	BDL	BDL	BDL	----
03/06/85	BDL	BDL	----	----	----	----
04/03/85	BDL	BDL	BDL	BDL	BDL	BDL
05/08/85	BDL	BDL	.10	BDL	BDL	BDL
06/12/85	BDL	BDL	.10	BDL	BDL	BDL
AVERAGE	.31	.08	.39	.21	.05	.05
MINIMUM	.05	.05	.05	.05	.05	.05
MAXIMUM	1.50	.20	1.70	.70	.05	.05
STD DEV	.44	.06	.59	.26		.00
COEFF OF VAR	1.41	.82	1.49	1.20		.00
# OF SAMPLES	12	6	11	11	5	4

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	m-XYLENE (ug/l)	p-XYLENE (ug/l)	o-DICHLORO BENZENE (ug/l)	m-DICHLORO BENZENE (ug/l)	p-DICHLORO BENZENE (ug/l)	STYRENE (ug/l)
04/18/84	.40	----------	----------	----------	----------	----------
05/10/84	.10	----------	----------	----------	----------	----------
06/06/84	.30	----------	----------	----------	----------	----------
AVERAGE	.27					
MINIMUM	.10					
MAXIMUM	.40					
STD DEV	.15					
COEFF OF VAR	.57					
# OF SAMPLES	3	0	0	0	0	0

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AR300964

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	m-XYLENE (ug/l)	p-XYLENE (ug/l)	o-DICHLORO BENZENE (ug/l)	m-DICHLORO BENZENE (ug/l)	p-DICHLORO BENZENE (ug/l)	STYRENE (ug/l)
07/05/84	.20	-------	BDL	BDL	-------	-------
08/08/84	.70	-------	BDL	.30	-------	-------
09/05/84	.80	-------	1.00	.50	-------	-------
10/03/84	.40	-------	.30	.40	-------	-------
11/14/84	.70	-------	.50	.50	-------	-------
12/12/84	.60	-------	.60	BDL	-------	-------
01/02/85	BDL	.20	BDL	BDL	BDL	BDL
02/06/85	BDL	BDL	BDL	BDL	BDL	-------
03/06/85	BDL	BDL	BDL	BDL	BDL	-------
04/03/85	BDL	BDL	-------	BDL	BDL	BDL
05/08/85	BDL	BDL	.20	BDL	BDL	BDL
06/12/85	BDL	BDL	.20	BDL	BDL	BDL
AVERAGE	.31	.08	.28	.17	.05	.05
MINIMUM	.05	.05	.05	.05	.05	.05
MAXIMUM	.80	.20	1.00	.50	.05	.05
STD DEV	.31	.06	.31	.19	.00	.00
COEFF OF VAR	1.00	.82	1.11	1.09	.00	.00
# OF SAMPLES	12	6	11	12	6	4

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
07/03/05	.20	BDL	BDL	BDL	.10	BDL
07/10/05	.30	BDL	BDL	BDL	.20	BDL
07/17/05	1.40	BDL	BDL	BDL	.30	BDL
07/24/05	.30	BDL	BDL	BDL	.10	BDL
08/02/05	.80	BDL	BDL	BDL	.40	BDL
08/07/05	.40	BDL	BDL	BDL	.30	BDL
08/14/05	.20	BDL	BDL	BDL	.20	BDL
08/21/05	.60	BDL	BDL	BDL	.10	BDL
08/28/05	.40	BDL	BDL	BDL	BDL	BDL
09/11/05	.30	BDL	BDL	BDL	BDL	BDL
10/02/05	.20	BDL	BDL	BDL	BDL	BDL
10/09/05	.10	BDL	BDL	BDL	BDL	BDL
10/16/05	.10	BDL	BDL	BDL	BDL	BDL
10/23/05	BDL	BDL	BDL	BDL	.10	BDL
10/30/05	.20	BDL	BDL	BDL	.20	BDL
11/13/05	.40	BDL	BDL	BDL	.20	BDL
11/20/05	.30	BDL	BDL	BDL	.10	BDL
11/27/05	.10	BDL	BDL	BDL	BDL	BDL
12/11/05	.20	BDL	BDL	BDL	.40	BDL
12/18/05	.10	BDL	BDL	BDL	BDL	BDL
12/31/05	BDL	BDL	BDL	BDL	BDL	BDL
01/08/06	BDL	BDL	BDL	BDL	BDL	BDL
01/15/06	.10	BDL	BDL	BDL	BDL	BDL
01/22/06	BDL	BDL	BDL	BDL	BDL	BDL
01/29/06	BDL	BDL	BDL	BDL	BDL	BDL
02/05/06	BDL	BDL	BDL	BDL	BDL	BDL
02/11/06	BDL	BDL	BDL	BDL	BDL	BDL
02/19/06	-------	BDL	BDL	BDL	BDL	BDL
02/26/06	BDL	BDL	BDL	BDL	BDL	BDL

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
03/06/06	.40	BDL	BDL	BDL	.20	BDL
03/19/06	.30	BDL	BDL	BDL	.30	BDL
03/26/06	.10	BDL	BDL	BDL	BDL	BDL
04/02/06	BDL	BDL	BDL	BDL	BDL	BDL
04/16/06	BDL	BDL	BDL	BDL	BDL	BDL
04/23/06	BDL	BDL	BDL	BDL	BDL	BDL
05/01/06	BDL	BDL	BDL	BDL	BDL	BDL
05/07/06	BDL	BDL	BDL	BDL	BDL	BDL
05/14/06	BDL	BDL	BDL	BDL	BDL	BDL
05/22/06	BDL	BDL	BDL	BDL	BDL	BDL
05/28/06	-------	BDL	BDL	BDL	BDL	BDL
06/04/06	BDL	BDL	BDL	BDL	BDL	BDL
06/11/06	BDL	BDL	BDL	BDL	BDL	BDL
06/18/06	.10	BDL	BDL	BDL	.10	BDL
AVERAGE	.21	.05	.05	.05	.11	.05
MINIMUM	.05	.05	.05	.05	.05	.05
MAXIMUM	1.40	.05	.05	.05	.40	.05
STD DEV	.26	.00	.00	.00	.10	.00
COEFF OF VAR	1.24	.00	.00	.00	.92	.00
# OF SAMPLES	41	43	43	43	43	43

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

07/ 5/06

QL HIGH SERVICE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
07/03/05	.60	BDL	BDL	BDL	30.00	BDL
07/10/05	----------	BDL	BDL	BDL	27.00	BDL
07/17/05	.40	BDL	BDL	BDL	40.00	BDL
07/24/05	.60	BDL	BDL	BDL	38.00	BDL
07/31/05	----------	BDL	BDL	BDL	41.00	BDL
08/07/05	.60	BDL	BDL	BDL	56.00	BDL
08/14/05	1.30	BDL	BDL	BDL	56.00	BDL
08/22/05	.20	BDL	BDL	BDL	34.00	BDL
08/28/05	.20	BDL	BDL	BDL	42.00	BDL
09/04/05	.10	BDL	BDL	BDL	35.00	BDL
~~09/11/05~~	2.20	BDL	BDL	BDL	33.00	BDL
09/25/05	.10	BDL	BDL	BDL	32.00	BDL
10/02/05	.40	BDL	BDL	BDL	66.00	BDL
10/09/05	.10	BDL	BDL	BDL	69.00	BDL
10/16/05	.30	BDL	BDL	BDL	34.00	BDL
10/23/05	----------	BDL	BDL	BDL	27.00	BDL
10/30/05	.20	BDL	BDL	BDL	26.00	BDL
11/06/05	.20	BDL	BDL	BDL	18.00	BDL
11/13/05	.30	BDL	BDL	BDL	44.00	BDL
11/20/05	BDL	BDL	BDL	BDL	46.00	BDL
11/27/05	.10	BDL	BDL	BDL	36.00	BDL
12/04/05	.20	BDL	BDL	BDL	27.00	BDL
12/11/05	.30	BDL	BDL	BDL	15.00	BDL
12/18/05	----------	BDL	BDL	BDL	13.00	BDL
12/26/05	BDL	BDL	BDL	BDL	10.00	BDL
01/03/06	.90	BDL	BDL	BDL	11.00	BDL
01/08/06	.90	BDL	BDL	BDL	12.00	BDL
01/15/06	BDL	BDL	BDL	BDL	9.20	BDL
01/22/06	BDL	BDL	BDL	BDL	15.00	BDL

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1.2
11.4

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8/ 5/06

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
01/29/06	BDL	BDL	BDL	BDL	20.00	BDL
02/05/06	BDL	BDL	BDL	BDL	12.00	BDL
02/11/06	BDL	BDL	BDL	BDL	14.00	BDL
02/19/06	.20	BDL	BDL	BDL	11.00	BDL
02/26/06	BDL	BDL	BDL	BDL	21.00	BDL
03/05/06	BDL	BDL	BDL	BDL	12.00	BDL
03/12/06	BDL	BDL	BDL	BDL	12.00	BDL
03/19/06	BDL	BDL	BDL	BDL	26.00	BDL
03/26/06	BDL	BDL	BDL	BDL	16.00	BDL
04/02/06	BDL	BDL	BDL	BDL	20.00	BDL
04/09/06	BDL	BDL	BDL	BDL	15.00	BDL
04/16/06	BDL	BDL	BDL	BDL	16.00	BDL
04/23/06	BDL	BDL	BDL	BDL	27.00	BDL
04/30/06	BDL	BDL	BDL	BDL	22.00	BDL
05/07/06	BDL	BDL	BDL	BDL	22.00	BDL
05/14/06	.20	BDL	BDL	BDL	22.00	BDL
05/21/06	.30	BDL	BDL	BDL	27.00	BDL
05/28/06	.10	BDL	BDL	BDL	30.00	BDL
06/04/06	.10	BDL	BDL	BDL	34.00	BDL
06/11/06	BDL	BDL	BDL	BDL	37.00	BDL
06/18/06	.30	BDL	BDL	BDL	44.00	BDL
AVERAGE	.27	.05	.05	.05	28.36	.05
MINIMUM	.05	.05	.05	.05	9.20	.05
MAXIMUM	2.20	.05	.05	.05	69.00	.05
STD DEV	.40	.00	.00	.00	14.57	.00
COEFF OF VAR	1.48	.00	.00	.00	.51	.00
# OF SAMPLES	46	50	50	50	50	50

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AR300969

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
07/03/05	.60	BDL	BDL	BDL	.20	BDL
07/10/05	.30	BDL	BDL	BDL	.20	BDL
07/17/05	1.30	BDL	BDL	BDL	.10	BDL
07/24/05	.30	BDL	BDL	BDL	.10	BDL
08/02/05	.80	BDL	BDL	BDL	.40	BDL
08/07/05	.50	BDL	BDL	BDL	.30	BDL
08/14/05	-------	BDL	BDL	BDL	.10	BDL
08/21/05	BDL	BDL	BDL	BDL	BDL	BDL
08/28/05	.30	BDL	BDL	BDL	BDL	BDL
09/11/05	BDL	BDL	BDL	BDL	BDL	BDL
10/02/05	.30	BDL	BDL	BDL	BDL	BDL
10/09/05	1.20	BDL	BDL	.10	.20	BDL
10/16/05	.50	BDL	BDL	BDL	BDL	BDL
10/23/05	.10	BDL	BDL	BDL	BDL	BDL
10/30/05	BDL	BDL	BDL	BDL	.20	BDL
11/13/05	.20	BDL	BDL	BDL	BDL	BDL
11/20/05	BDL	BDL	BDL	BDL	.10	BDL
11/27/05	.10	BDL	BDL	BDL	BDL	BDL
12/11/05	.20	BDL	BDL	BDL	.10	BDL
12/18/05	BDL	BDL	BDL	BDL	BDL	BDL
12/31/05	.40	BDL	BDL	BDL	BDL	BDL
01/08/06	BDL	BDL	BDL	BDL	BDL	BDL
01/15/06	.10	BDL	BDL	BDL	BDL	BDL
01/22/06	BDL	BDL	BDL	BDL	BDL	BDL
01/29/06	BDL	BDL	BDL	BDL	BDL	BDL
02/05/06	BDL	BDL	BDL	BDL	BDL	BDL
02/19/06	BDL	BDL	BDL	BDL	BDL	BDL
02/26/06	BDL	BDL	BDL	BDL	BDL	BDL
03/06/06	.10	BDL	BDL	BDL	BDL	BDL

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
03/12/06	.40	BDL	BDL	BDL	.10	BDL
03/26/06	BDL	BDL	BDL	BDL	BDL	BDL
04/02/86	BDL	BDL	BDL	BDL	BDL	BDL
04/09/86	BDL	BDL	BDL	BDL	BDL	BDL
04/16/86	BDL	BDL	BDL	BDL	BDL	BDL
04/23/86	BDL	BDL	BDL	BDL	BDL	BDL
04/30/86	BDL	BDL	BDL	BDL	BDL	BDL
05/07/06	BDL	BDL	BDL	BDL	BDL	BDL
05/14/86	BDL	BDL	BDL	BDL	BDL	BDL
05/28/06	BDL	BDL	BDL	BDL	BDL	BDL
06/04/06	BDL	BDL	BDL	BDL	BDL	BDL
06/11/06	BDL	BDL	BDL	BDL	BDL	BDL
06/18/06	.10	BDL	BDL	BDL	.10	BDL
AVERAGE	.22	.05	.05	.05	.07	.05
MINIMUM	.05	.05	.05	.05	.05	.05
MAXIMUM	1.30	.05	.05	.10	.40	.05
STD DEV	.30	.00	.00	.01	.08	.00
COEFF OF VAR	1.37	.00	.00	.15	.87	.00
# OF SAMPLES	41	42	42	42	42	42

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/85 TO 6/30/86

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
07/03/85	.70	BDL	BDL	BDL	22.00	BDL
07/10/85	.30	BDL	BDL	BDL	41.00	BDL
07/17/85	.20	BDL	BDL	BDL	45.00	BDL
07/24/85	.80	BDL	BDL	BDL	53.00	BDL
07/31/85	-------	BDL	BDL	BDL	39.00	BDL
08/07/85	.40	BDL	BDL	BDL	47.00	BDL
08/14/85	.90	BDL	BDL	BDL	48.00	BDL
08/22/85	.20	BDL	BDL	BDL	31.00	BDL
08/28/85	.40	BDL	BDL	BDL	40.00	BDL
09/04/85	.40	BDL	BDL	BDL	37.00	BDL
09/11/85	.20	BDL	BDL	BDL	30.00	BDL
09/18/85	.20	BDL	BDL	BDL	32.00	BDL
10/02/85	-------	BDL	BDL	BDL	51.00	BDL
10/16/85	.10	BDL	BDL	BDL	30.00	BDL
10/23/85	-------	BDL	BDL	BDL	20.00	BDL
10/30/85	-------	BDL	BDL	BDL	23.00	BDL
11/06/85	.20	BDL	BDL	BDL	24.00	BDL
11/13/85	.20	BDL	BDL	BDL	44.00	BDL
11/20/85	BDL	BDL	BDL	BDL	54.00	BDL
11/27/85	.10	BDL	BDL	BDL	34.00	BDL
12/04/85	-------	BDL	BDL	BDL	25.00	BDL
12/11/85	-------	BDL	BDL	BDL	17.00	BDL
12/18/85	-------	BDL	BDL	BDL	10.00	BDL
12/26/85	BDL	BDL	BDL	BDL	13.00	BDL
01/03/86	.20	BDL	BDL	BDL	9.70	BDL
01/08/86	.10	BDL	BDL	BDL	10.00	BDL
01/15/86	.10	BDL	BDL	BDL	8.60	BDL
01/22/86	BDL	BDL	BDL	BDL	10.00	BDL
01/29/86	BDL	BDL	BDL	BDL	24.00	BDL

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
02/05/06	BDL	BDL	BDL	BDL	13.00	BDL
02/11/06	BDL	BDL	BDL	BDL	16.00	BDL
02/19/06	BDL	BDL	BDL	BDL	13.00	BDL
02/26/06	BDL	BDL	BDL	BDL	17.00	BDL
03/05/06	BDL	BDL	BDL	BDL	11.00	BDL
03/12/06	BDL	BDL	BDL	BDL	11.00	BDL
03/19/06	BDL	BDL	BDL	BDL	24.00	BDL
03/26/06	BDL	BDL	BDL	BDL	12.00	BDL
04/02/06	BDL	BDL	BDL	BDL	17.00	BDL
04/09/06	BDL	BDL	BDL	BDL	12.00	BDL
04/16/06	BDL	BDL	BDL	BDL	11.00	BDL
04/23/06	BDL	BDL	BDL	BDL	21.00	BDL
04/30/06	BDL	BDL	BDL	BDL	26.00	BDL
05/07/06	BDL	BDL	BDL	BDL	22.00	BDL
05/14/06	.20	BDL	BDL	BDL	25.00	BDL
05/21/06	.30	BDL	BDL	BDL	27.00	BDL
05/28/06	.20	BDL	BDL	BDL	45.00	BDL
06/04/06	.30	BDL	BDL	BDL	39.00	BDL
06/11/06	.50	BDL	BDL	BDL	35.00	BDL
06/10/06	.30	BDL	BDL	BDL	45.00	BDL
AVERAGE	.20	.05	.05	.05	27.15	.05
MINIMUM	.05	.05	.05	.05	8.60	.05
MAXIMUM	.90	.05	.05	.05	54.00	.05
STD DEV	.21	.00	.00	.00	13.31	.00
COEFF OF VAR	1.05	.00	.00	.00	.49	.00
# OF SAMPLES	42	49	49	49	49	49

% >
# >

% <
# <

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/85 TO 6/30/06

DATE	2CLORETHYL VINYLETHER (ug/1)	BROMOFORM (ug/1)	123TRICLOR PROPANE (ug/1)	TETRACHLOR ETHYLENE (ug/1)	CHLORO BENZENE (ug/1)	BCEE (ug/1)
07/03/85	BDL	BDL	BDL	BDL	BDL	BDL
07/10/85	BDL	BDL	BDL	BDL	BDL	BDL
07/17/85	BDL	BDL	.10	BDL	BDL	BDL
07/24/85	BDL	BDL	BDL	BDL	BDL	BDL
08/02/85	BDL	BDL	BDL	BDL	BDL	BDL
08/07/85	BDL	BDL	BDL	BDL	BDL	BDL
08/14/85	BDL	BDL	BDL	3.80	BDL	BDL
08/21/85	BDL	BDL	BDL	BDL	BDL	BDL
08/28/85	BDL	BDL	BDL	BDL	BDL	BDL
09/11/85	BDL	BDL	BDL	BDL	BDL	BDL
10/02/85	BDL	BDL	BDL	BDL	BDL	--------
10/09/85	BDL	BDL	BDL	BDL	BDL	--------
10/16/85	BDL	BDL	BDL	BDL	BDL	--------
10/23/85	BDL	BDL	.10	BDL	BDL	--------
10/30/85	BDL	BDL	.10	BDL	BDL	--------
11/13/85	BDL	BDL	.10	BDL	BDL	--------
11/20/85	BDL	BDL	BDL	BDL	BDL	--------
11/27/85	BDL	BDL	BDL	BDL	BDL	--------
12/11/85	BDL	BDL	BDL	BDL	BDL	--------
12/18/85	BDL	BDL	.10	BDL	BDL	--------
12/31/85	BDL	BDL	BDL	BDL	BDL	--------
01/08/86	BDL	BDL	BDL	BDL	BDL	--------
01/15/86	BDL	BDL	BDL	BDL	BDL	--------
01/22/86	BDL	BDL	BDL	BDL	BDL	--------
01/29/86	BDL	BDL	BDL	BDL	BDL	--------
02/05/86	BDL	BDL	BDL	.10	BDL	--------
02/11/86	BDL	BDL	BDL	BDL	BDL	--------
02/19/86	BDL	BDL	BDL	BDL	BDL	--------
02/26/86	BDL	BDL	BDL	BDL	BDL	--------

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	2CLOREthyl VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
03/06/06	BDL	BDL	BDL	BDL	BDL	--------
03/19/06	BDL	BDL	BDL	BDL	BDL	--------
03/26/06	BDL	BDL	BDL	BDL	BDL	--------
04/02/06	BDL	BDL	BDL	BDL	BDL	--------
04/16/06	BDL	BDL	BDL	BDL	BDL	--------
04/23/06	BDL	BDL	BDL	BDL	BDL	--------
05/01/06	BDL	BDL	BDL	BDL	BDL	--------
05/07/06	BDL	BDL	BDL	BDL	BDL	--------
05/14/06	BDL	BDL	BDL	BDL	BDL	--------
05/22/06	BDL	BDL	BDL	BDL	BDL	--------
05/28/06	BDL	BDL	BDL	BDL	BDL	--------
06/04/06	BDL	BDL	BDL	BDL	BDL	--------
06/11/06	BDL	BDL	BDL	BDL	BDL	--------
06/18/06	BDL	BDL	BDL	BDL	BDL	--------
AVERAGE	.10	.10	.06	.14	.10	1.00
MINIMUM	.10	.10	.05	.05	.10	1.00
MAXIMUM	.10	.10	.10	3.80	.10	1.00
STD DEV	.00	.00	.02	.57	.00	
COEFF OF VAR	.00	.00	.29	4.13	.00	
# OF SAMPLES	43	43	43	43	43	10

% >
# >

% <
# <

AR300975

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

OL HIGH SERVICE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	2CLOROETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
07/03/05	BDL	1.40	BDL	BDL	BDL	BDL
07/10/05	BDL	.90	BDL	BDL	BDL	BDL
07/17/05	BDL	.90	BDL	BDL	BDL	BDL
07/24/05	BDL	.50	.10	BDL	BDL	BDL
07/31/05	BDL	.80	BDL	BDL	BDL	BDL
08/07/05	BDL	BDL	BDL	BDL	BDL	BDL
08/14/05	BDL	.40	BDL	.20	BDL	BDL
08/22/05	BDL	1.60	BDL	BDL	BDL	BDL
08/28/05	----------	.70	BDL	.10	----------	----------
09/04/05	----------	1.10	BDL	.10	----------	----------
09/11/05	~~BDL~~	~~BDL~~	BDL	BDL	----------	----------
09/25/05	BDL	BDL	BDL	BDL	BDL	----------
10/02/05	BDL	BDL	BDL	BDL	BDL	----------
10/09/05	BDL	BDL	BDL	BDL	BDL	----------
10/16/05	BDL	BDL	BDL	.10	BDL	----------
10/23/05	BDL	.10	BDL	BDL	BDL	----------
10/30/05	BDL	1.50	.20	BDL	BDL	BDL
/06/05	BDL	.80	.20	BDL	BDL	BDL
/13/05	BDL	.10	.30	BDL	BDL	BDL
11/20/05	BDL	BDL	BDL	.10	BDL	----------
11/27/05	BDL	BDL	BDL	BDL	BDL	BDL
12/04/05	BDL	BDL	.20	BDL	BDL	BDL
12/11/05	BDL	BDL	.20	BDL	BDL	BDL
12/18/05	BDL	BDL	.10	BDL	BDL	BDL
12/26/05	BDL	BDL	BDL	BDL	BDL	----------
01/03/06	BDL	BDL	BDL	BDL	BDL	----------
01/08/06	BDL	BDL	BDL	BDL	BDL	----------
01/15/06	BDL	BDL	BDL	BDL	BDL	----------
01/22/06	BDL	BDL	BDL	BDL	BDL	----------

AR300976

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	2CLORETHYL VINYLETHER (ug/1)	BROMOFORM (ug/1)	123TRICLOR PROPANE (ug/1)	TETRACHLOR ETHYLENE (ug/1)	CHLORO BENZENE (ug/1)	DCEE (ug/1)
01/29/06	BDL	BDL	BDL	BDL	BDL	----------
02/05/06	BDL	BDL	BDL	BDL	BDL	BDL
02/11/06	BDL	BDL	BDL	BDL	BDL	----------
02/19/06	BDL	BDL	BDL	BDL	BDL	----------
02/26/06	BDL	BDL	BDL	BDL	BDL	----------
03/05/06	BDL	BDL	BDL	BDL	BDL	----------
03/12/06	BDL	BDL	BDL	BDL	BDL	----------
03/19/06	BDL	BDL	BDL	BDL	BDL	----------
03/26/06	BDL	BDL	BDL	BDL	BDL	----------
04/02/06	BDL	BDL	.20	BDL	BDL	----------
04/09/06	BDL	BDL	BDL	BDL	BDL	----------
04/16/06	BDL	.20	.10	BDL	BDL	----------
04/23/06	BDL	BDL	BDL	BDL	BDL	----------
04/30/06	BDL	BDL	BDL	BDL	BDL	----------
05/07/06	BDL	BDL	BDL	BDL	BDL	----------
05/14/06	BDL	.20	BDL	.10	BDL	----------
05/21/06	BDL	.50	.30	BDL	BDL	----------
05/28/06	BDL	BDL	.10	BDL	BDL	----------
06/04/06	BDL	.50	BDL	BDL	BDL	----------
06/11/06	BDL	.70	BDL	BDL	BDL	----------
06/18/06	BDL	.60	BDL	BDL	BDL	----------
AVERAGE	.10 ~~.84~~	.34	.09	.06	.10	1.00
MINIMUM	.10	.10	.05	.05	.10	1.00
MAXIMUM	8.00	1.60	.40	.20	.10	1.00
STD DEV	1.14	.41	.00	.03		
COEFF OF VAR	4.31	1.21	.92	.44		
# OF SAMPLES	48	49	50	50	47	15

% >
# > 14/49 = 0.29

% <
# <

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	2CLOREETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	DCEE (ug/l)
07/03/05	BDL	BDL	BDL	BDL	BDL	BDL
07/10/05	BDL	BDL	BDL	BDL	BDL	BDL
07/17/05	BDL	BDL	BDL	BDL	BDL	BDL
07/24/05	BDL	BDL	BDL	.10	BDL	BDL
08/02/05	BDL	BDL	BDL	BDL	BDL	BDL
08/07/05	BDL	BDL	BDL	BDL	BDL	BDL
08/14/05	BDL	BDL	BDL	BDL	BDL	BDL
08/21/05	BDL	BDL	BDL	BDL	BDL	BDL
08/28/05	BDL	BDL	BDL	BDL	BDL	BDL
09/11/05	BDL	BDL	BDL	BDL	BDL	BDL
10/02/05	BDL	BDL	BDL	BDL	BDL	BDL
10/09/05	BDL	BDL	BDL	BDL	BDL	----
10/16/05	BDL	BDL	BDL	BDL	BDL	----
10/23/05	BDL	BDL	BDL	BDL	BDL	----
/30/05	BDL	BDL	.10	BDL	BDL	----
1/13/05	BDL	BDL	BDL	BDL	BDL	----
11/20/05	BDL	BDL	BDL	BDL	BDL	----
11/27/05	BDL	BDL	BDL	BDL	BDL	----
12/11/05	BDL	BDL	BDL	BDL	BDL	----
12/18/05	BDL	BDL	BDL	BDL	BDL	----
12/31/05	BDL	BDL	BDL	BDL	BDL	----
01/08/06	BDL	BDL	BDL	BDL	BDL	----
01/15/06	BDL	BDL	BDL	BDL	BDL	----
01/22/06	BDL	BDL	BDL	BDL	BDL	----
01/29/06	BDL	BDL	BDL	BDL	BDL	----
02/05/06	BDL	BDL	BDL	BDL	BDL	----
02/19/06	BDL	BDL	BDL	BDL	BDL	----
02/26/06	BDL	BDL	BDL	BDL	BDL	----
03/06/06	BDL	BDL	BDL	BDL	BDL	----

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	2CLOKETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	DCEE (ug/l)
03/26/06	BDL	BDL	BDL	BDL	BDL	----------
04/02/06	BDL	BDL	BDL	BDL	BDL	----------
04/09/06	BDL	BDL	BDL	BDL	BDL	----------
04/16/06	BDL	BDL	BDL	BDL	BDL	----------
04/23/06	BDL	BDL	BDL	BDL	BDL	----------
04/30/06	BDL	BDL	BDL	BDL	BDL	----------
05/07/06	BDL	BDL	BDL	BDL	BDL	----------
05/14/06	BDL	BDL	BDL	BDL	BDL	----------
05/20/06	BDL	BDL	BDL	BDL	BDL	----------
06/04/06	BDL	BDL	BDL	BDL	BDL	----------
06/11/06	BDL	BDL	BDL	BDL	BDL	----------
06/18/06	BDL	BDL	BDL	BDL	BDL	----------
AVERAGE	.10	.10	.05	.05	.10	1.00
MINIMUM	.10	.10	.05	.05	.10	1.00
MAXIMUM	.10	.10	.10	.10	.10	1.00
STD DEV	.00	.00	.01	.01	.00	
COEFF OF VAR	.00	.00	.15	.15	.00	
# OF SAMPLES	41	41	41	41	41	10

%)
#)

% (
# (

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

0/ 5/06

BELMONT HIGH SERVICE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
07/03/05	BDL	2.60	BDL	BDL	BDL	BDL
07/10/05	BDL	1.30	BDL	BDL	BDL	BDL
07/17/05	BDL	1.20	BDL	BDL	BDL	BDL
07/24/05	BDL	.70	.10	.10	BDL	BDL
07/31/05	BDL	1.40	BDL	BDL	BDL	BDL
08/07/05	BDL	.10	BDL	BDL	BDL	BDL
08/14/05	BDL	1.10	BDL	BDL	BDL	BDL
08/22/05	BDL	2.40	BDL	.20	BDL	BDL
08/28/05	BDL	1.50	BDL	.10	BDL	BDL
09/04/05	BDL	2.20	BDL	.10	BDL	----
09/11/05	BDL	1.20	BDL	BDL	BDL	----
09/18/05	BDL	.50	BDL	BDL	BDL	----
10/02/05	BDL	BDL	BDL	BDL	BDL	----
/16/05	BDL	BDL	BDL	BDL	BDL	----
/23/05	BDL	.20	BDL	.10	BDL	BDL
10/30/05	BDL	2.50	BDL	.10	BDL	----
11/06/05	BDL	.90	.20	BDL	BDL	----
11/13/05	BDL	.10	.10	BDL	BDL	BDL
11/20/05	BDL	BDL	BDL	.10	BDL	BDL
11/27/05	BDL	.30	.10	BDL	BDL	BDL
12/04/05	BDL	BDL	.20	BDL	BDL	----
12/11/05	BDL	BDL	.20	BDL	BDL	BDL
12/18/05	BDL	BDL	.20	BDL	BDL	BDL
12/26/05	BDL	BDL	BDL	BDL	BDL	BDL
01/03/06	BDL	BDL	BDL	BDL	BDL	BDL
01/08/06	BDL	BDL	BDL	BDL	BDL	----
01/15/06	BDL	BDL	BDL	BDL	BDL	----
01/22/06	BDL	BDL	BDL	BDL	BDL	----
01/29/06	BDL	BDL	BDL	BDL	BDL	----

AR300980

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/85 TO 6/30/06

DATE	2CLOROETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
02/05/06	BDL	BDL	BDL	BDL	BDL	BDL
02/11/06	BDL	BDL	BDL	BDL	BDL	BDL
02/19/06	BDL	BDL	BDL	BDL	BDL	------
02/26/06	BDL	BDL	BDL	BDL	BDL	------
03/05/06	BDL	BDL	.20	BDL	BDL	------
03/12/06	BDL	BDL	BDL	BDL	BDL	------
03/19/06	BDL	BDL	BDL	BDL	BDL	------
03/26/06	BDL	BDL	BDL	BDL	BDL	------
04/02/06	BDL	BDL	BDL	BDL	BDL	------
04/09/06	BDL	BDL	BDL	BDL	BDL	------
04/16/06	BDL	.40	.10	BDL	BDL	------
04/23/06	BDL	BDL	BDL	BDL	BDL	------
04/30/06	BDL	BDL	BDL	BDL	BDL	------
05/07/06	BDL	BDL	BDL	BDL	BDL	------
05/14/06	BDL	.30	.20	BDL	BDL	------
05/21/06	BDL	.90	.30	BDL	BDL	------
05/28/06	BDL	BDL	BDL	BDL	BDL	------
06/04/06	BDL	.70	.10	BDL	BDL	------
06/11/06	BDL	.50	BDL	BDL	BDL	------
06/18/06	BDL	.60	BDL	.10	BDL	------
AVERAGE	.10	.53	.08	.06	.10	1.00
MINIMUM	.10	.10	.05	.05	.10	1.00
MAXIMUM	.10	2.60	.30	.20	.10	1.00
STD DEV	.00	.70	.06	.03	.00	
COEFF OF VAR	.00	1.31	.76	.45	.00	
# OF SAMPLES	49	49	49	49	49	17

% >
# >

23.6/49 = .48

% <
# <

AR300981

PROGRAM

07/ 5/06

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	111TRICLOR ETHANE (ug/1)	CARBON TET (ug/1)	BROMODICHL METHANE (ug/1)	12DICHLORO PROPANE (ug/1)	112TRICLOR ETHYLENE (ug/1)	DIBROMCLOR METHANE (ug/1)
07/03/05	BDL	BDL	BDL	BDL	BDL	BDL
07/10/05	BDL	BDL	BDL	BDL	BDL	BDL
07/17/05	BDL	BDL	BDL	BDL	BDL	BDL
07/24/05	.20	BDL	BDL	BDL	BDL	BDL
08/02/05	BDL	BDL	BDL	BDL	BDL	BDL
08/07/05	BDL	BDL	BDL	BDL	BDL	BDL
08/14/05	BDL	BDL	BDL	BDL	BDL	BDL
08/21/05	BDL	BDL	BDL	BDL	BDL	BDL
08/28/05	BDL	BDL	BDL	BDL	BDL	BDL
09/11/05	------	BDL	BDL	BDL	BDL	BDL
10/02/05	BDL	BDL	BDL	BDL	BDL	BDL
10/09/05	BDL	BDL	BDL	BDL	BDL	BDL
10/16/05	BDL	BDL	BDL	BDL	BDL	BDL
10/23/05	BDL	BDL	BDL	BDL	BDL	BDL
10/30/05	BDL	BDL	BDL	BDL	BDL	BDL
11/13/05	BDL	BDL	BDL	BDL	BDL	BDL
11/20/05	BDL	BDL	BDL	BDL	BDL	BDL
11/27/05	BDL	BDL	BDL	BDL	BDL	BDL
12/11/05	BDL	BDL	BDL	BDL	BDL	BDL
12/18/05	BDL	BDL	BDL	BDL	BDL	BDL
12/31/05	BDL	BDL	BDL	BDL	BDL	BDL
01/08/06	BDL	BDL	BDL	BDL	BDL	BDL
01/15/06	.10	BDL	BDL	BDL	BDL	BDL
01/22/06	.10	BDL	BDL	BDL	BDL	BDL
01/27/06	BDL	BDL	BDL	BDL	BDL	BDL
02/05/06	BDL	BDL	BDL	BDL	BDL	BDL
02/11/06	BDL	BDL	BDL	BDL	BDL	BDL
02/19/06	.10	BDL	BDL	BDL	BDL	BDL
02/26/06	BDL	BDL	BDL	BDL	BDL	BDL

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	BROMODICHL METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
03/06/06	BDL	BDL	BDL	BDL	BDL	BDL
03/19/06	BDL	BDL	BDL	BDL	BDL	BDL
03/26/06	BDL	BDL	BDL	BDL	BDL	BDL
04/02/06	BDL	BDL	BDL	BDL	BDL	BDL
04/16/06	BDL	BDL	BDL	BDL	BDL	BDL
04/23/06	BDL	BDL	BDL	BDL	BDL	BDL
05/01/06	BDL	BDL	BDL	BDL	BDL	BDL
05/07/06	BDL	BDL	BDL	BDL	BDL	BDL
05/14/06	BDL	BDL	BDL	BDL	BDL	BDL
05/22/06	BDL	BDL	BDL	BDL	BDL	BDL
05/28/06	BDL	BDL	BDL	BDL	BDL	BDL
06/04/06	BDL	BDL	BDL	BDL	BDL	BDL
06/11/06	BDL	BDL	BDL	BDL	BDL	BDL
6/18/06	BDL	BDL	BDL	BDL	BDL	BDL
AVERAGE	.06	.05	.05	.05	.05	.05
MINIMUM	.05	.05	.05	.05	.05	.05
MAXIMUM	.20	.05	.05	.05	.05	.05
STD DEV	.03	.00	.00	.00	.00	.00
COEFF OF VAR	.46	.00	.00	.00	.00	.00
# OF SAMPLES	42	43	43	43	43	43

% >
# >

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

HIGH SERVICE

PERIOD FROM 07/01/85 TO 6/30/86

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	BROMODICHL METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
07/03/85	BDL	BDL	22.00	BDL	BDL	11.00
07/10/85	BDL	BDL	19.00	BDL	BDL	8.80
07/17/85	BDL	BDL	25.00	BDL	.10	11.00
07/24/85	BDL	.10	23.00	BDL	BDL	8.90
07/31/85	BDL	.10	27.00	BDL	.10	10.00
08/07/85	BDL	.10	20.00	BDL	.10	4.60
08/14/85	BDL	BDL	23.00	BDL	.10	7.20
08/22/85	BDL	BDL	30.00	BDL	BDL	16.00
08/20/85	.10	.10	23.00	BDL	.10	10.00
09/04/85	BDL	BDL	21.00	BDL	BDL	11.00
09/11/85	BDL	BDL	10.00	BDL	BDL	[illegible]
09/25/85	BDL	BDL	19.00	BDL	BDL	8.20
10/02/85	BDL	BDL	15.00	BDL	BDL	1.20
10/09/85	BDL	BDL	16.00	BDL	BDL	1.10
10/16/85	BDL	BDL	16.00	BDL	BDL	4.40
10/23/85	BDL	BDL	19.00	BDL	BDL	10.00
10/30/85	BDL	BDL	22.00	BDL	.10	13.00
11/06/85	BDL	BDL	15.00	BDL	BDL	7.60
11/13/85	BDL	BDL	18.00	BDL	.20	4.60
11/20/85	BDL	BDL	9.00	BDL	BDL	.20
11/27/85	BDL	BDL	8.70	BDL	BDL	.90
12/04/85	BDL	BDL	4.20	BDL	BDL	.40
12/11/85	BDL	BDL	6.20	BDL	BDL	1.50
12/18/85	BDL	BDL	5.20	BDL	.20	1.00
12/26/85	.20	BDL	3.30	BDL	BDL	.60
01/03/86	.30	BDL	3.60	BDL	BDL	.80
01/08/86	.20	BDL	4.70	BDL	BDL	1.20
01/15/86	.10	BDL	5.90	BDL	BDL	2.40
01/22/86	.20	BDL	6.00	BDL	.10	1.40

PHILADELPHIA W[illegible] DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

HIGH SERVICE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	BROMODICHL METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
01/29/06	.30	BDL	6.00	BDL	BDL	.20
02/05/06	.40	BDL	3.50	BDL	BDL	.50
02/11/06	.20	BDL	3.90	BDL	BDL	.50
02/19/06	.10	BDL	4.30	BDL	BDL	.80
02/26/06	.10	BDL	5.40	BDL	BDL	.40
03/05/06	BDL	BDL	4.70	BDL	BDL	.70
03/12/06	BDL	BDL	5.20	BDL	BDL	1.10
03/19/06	BDL	BDL	6.00	BDL	BDL	.50
03/26/06	BDL	BDL	6.60	BDL	BDL	1.40
04/02/06	BDL	BDL	10.00	BDL	BDL	3.00
04/09/06	BDL	BDL	9.40	BDL	BDL	2.40
04/16/06	BDL	BDL	12.00	BDL	BDL	5.70
04/23/06	BDL	BDL	9.20	BDL	BDL	.90
04/30/06	BDL	BDL	12.00	BDL	BDL	2.00
05/07/06	BDL	BDL	12.00	BDL	BDL	4.20
05/14/06	BDL	BDL	14.00	BDL	BDL	6.00
05/21/06	BDL	BDL	18.00	BDL	.10	8.30
05/28/06	BDL	BDL	18.00	BDL	.20	5.10
[illegible]/04/06	BDL	BDL	20.00	BDL	.10	8.70
11/06	BDL	BDL	21.00	BDL	.10	9.30
06/18/06	BDL	BDL	31.00	BDL	.30	13.00
AVERAGE	.08	.05	13.60	.05	.07	4.~~68~~ 74
MINIMUM	.05	.05	3.30	.05	.05	.05
MAXIMUM	.40	.10	31.00	.05	.30	16.00
STD DEV	.08	.01	7.88	.00	.05	4.39
COEFF OF VAR	.93	.25	.58	.00	.69	.94
# OF SAMPLES	50	50	50	50	50	50

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AR300985

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	BROMODICHL METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
07/03/05	BDL	BDL	BDL	BDL	BDL	BDL
07/10/05	BDL	BDL	BDL	BDL	BDL	BDL
07/17/05	BDL	BDL	BDL	BDL	BDL	BDL
07/24/05	BDL	BDL	BDL	BDL	BDL	BDL
08/02/05	BDL	BDL	BDL	BDL	BDL	BDL
08/07/05	BDL	BDL	BDL	BDL	BDL	BDL
08/14/05	BDL	BDL	BDL	BDL	BDL	BDL
08/21/05	BDL	BDL	BDL	BDL	BDL	BDL
08/28/05	BDL	BDL	BDL	BDL	BDL	BDL
09/11/05	-------	BDL	BDL	BDL	BDL	BDL
10/02/05	BDL	BDL	BDL	BDL	BDL	BDL
10/09/05	BDL	BDL	BDL	BDL	BDL	BDL
10/16/05	BDL	BDL	BDL	BDL	BDL	BDL
10/23/05	BDL	BDL	BDL	BDL	BDL	BDL
/30/05	BDL	BDL	BDL	BDL	BDL	BDL
/13/05	BDL	BDL	BDL	BDL	BDL	BDL
11/20/05	BDL	BDL	BDL	BDL	BDL	BDL
11/27/05	BDL	BDL	BDL	BDL	BDL	BDL
12/11/05	BDL	BDL	BDL	BDL	BDL	BDL
12/18/05	BDL	BDL	BDL	BDL	BDL	BDL
12/31/05	BDL	BDL	BDL	BDL	BDL	BDL
01/08/06	BDL	BDL	BDL	BDL	BDL	BDL
01/15/06	.10	BDL	BDL	BDL	BDL	BDL
01/22/06	.10	BDL	BDL	BDL	BDL	BDL
01/29/06	BDL	BDL	BDL	BDL	BDL	BDL
02/05/06	BDL	BDL	BDL	BDL	BDL	BDL
02/19/06	.20	BDL	BDL	BDL	BDL	BDL
02/26/06	BDL	BDL	BDL	BDL	BDL	BDL
03/06/06	BDL	BDL	BDL	BDL	BDL	BDL

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/85 TO 6/30/06

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	BROMODICHL METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
03/12/06	BDL	BDL	BDL	BDL	BDL	-------
03/26/06	BDL	BDL	BDL	BDL	BDL	BDL
04/02/06	BDL	BDL	BDL	BDL	BDL	BDL
04/09/06	BDL	BDL	BDL	BDL	BDL	BDL
04/16/06	BDL	BDL	BDL	BDL	BDL	BDL
04/23/06	BDL	BDL	BDL	BDL	BDL	BDL
04/30/06	BDL	BDL	BDL	BDL	BDL	BDL
05/07/06	BDL	BDL	BDL	BDL	BDL	BDL
05/14/06	BDL	BDL	BDL	BDL	BDL	BDL
05/28/06	BDL	BDL	BDL	BDL	BDL	BDL
06/04/06	BDL	BDL	BDL	BDL	BDL	BDL
06/11/06	BDL	BDL	BDL	BDL	BDL	BDL
06/18/06	BDL	BDL	BDL	BDL	BDL	BDL
ERAGE	.06	.05	.05	.05	.05	.05
MINIMUM	.05	.05	.05	.05	.05	.05
MAXIMUM	.20	.05	.05	.05	.05	.05
STD DEV	.03	.00	.00	.00	.00	.00
COEFF OF VAR	.45	.00	.00	.00	.00	.00
# OF SAMPLES	41	42	42	42	42	41

%)
#)

1

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/85 TO 6/30/86

DATE	111TRICLOR ETHANE (ug/1)	CARBON TET (ug/1)	BROMODICHL METHANE (ug/1)	12DICHLORO PROPANE (ug/1)	112TRICLOR ETHYLENE (ug/1)	DIBROMCLOR METHANE (ug/1)
07/03/85	BDL	BDL	21.00	BDL	BDL	12.00
07/10/85	BDL	BDL	27.00	BDL	BDL	13.00
07/17/85	BDL	BDL	26.00	BDL	.10	11.00
07/24/85	BDL	.10	23.00	BDL	.10	9.20
07/31/85	BDL	BDL	28.00	BDL	.10	12.00
08/07/85	BDL	.10	16.00	BDL	.20	3.20
08/14/85	BDL	BDL	26.00	BDL	.10	9.50
08/22/85	BDL	BDL	31.00	BDL	BDL	19.00
08/28/85	BDL	BDL	23.00	BDL	.20	11.00
09/04/85	BDL	BDL	28.00	BDL	.20	17.00
09/11/85	BDL	.10	20.00	BDL	.10	10.00
09/18/85	BDL	BDL	19.00	BDL	BDL	8.50
10/02/85	BDL	BDL	13.00	BDL	.20	1.30
10/16/85	BDL	BDL	15.00	BDL	BDL	.90
10/23/85	BDL	BDL	16.00	BDL	BDL	10.00
10/30/85	BDL	BDL	22.00	BDL	.20	16.00
11/06/85	BDL	BDL	19.00	BDL	.10	9.40
11/13/85	BDL	BDL	20.00	BDL	.10	4.80
11/20/85	.10	BDL	11.00	BDL	BDL	.40
11/27/85	BDL	BDL	9.10	BDL	.10	.90
12/04/85	BDL	BDL	4.00	BDL	.10	.30
12/11/85	BDL	BDL	5.50	BDL	.20	.90
12/18/85	.10	BDL	8.20	BDL	.10	1.70
12/26/85	.20	BDL	8.10	BDL	.10	3.00
01/03/86	.20	BDL	3.20	BDL	BDL	1.20
01/08/86	.20	BDL	6.20	BDL	BDL	2.60
01/15/86	BDL	BDL	6.30	BDL	BDL	3.80
01/22/86	.20	BDL	11.00	BDL	.10	4.20
01/29/86	.20	BDL	3.80	BDL	BDL	.10

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/85 TO 6/30/86

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	BROMODICHL METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
02/05/86	.50	BDL	4.10	BDL	BDL	.70
02/11/86	.40	BDL	4.90	BDL	BDL	.50
02/19/86	.20	BDL	6.80	BDL	BDL	1.80
02/26/86	.30	BDL	4.10	BDL	BDL	.30
03/05/86	BDL	BDL	4.30	BDL	BDL	.90
03/12/86	BDL	BDL	3.50	BDL	BDL	.60
03/19/86	BDL	BDL	4.20	BDL	BDL	BDL
03/26/86	BDL	BDL	4.20	BDL	BDL	.50
04/02/86	BDL	BDL	9.20	BDL	BDL	2.10
04/09/86	BDL	BDL	6.20	BDL	BDL	1.50
04/16/86	BDL	BDL	9.00	.20	BDL	4.20
04/23/86	BDL	BDL	6.00	BDL	BDL	.40
04/30/86	BDL	BDL	11.00	BDL	BDL	2.30
05/07/86	BDL	BDL	13.00	BDL	BDL	4.40
14/86	BDL	BDL	14.00	BDL	BDL	7.20
/21/86	BDL	BDL	17.00	BDL	.10	10.00
05/20/86	BDL	BDL	17.00	BDL	.10	5.20
06/04/86	BDL	BDL	25.00	BDL	.10	11.00
06/11/86	BDL	BDL	18.00	BDL	.10	5.60
06/10/86	BDL	BDL	25.00	BDL	.10	10.00
AVERAGE	.09	.05	13.79	.05	.09	
MINIMUM	.05	.05	3.20	.05	.05	.05
MAXIMUM	.50	.10	31.00	.20	.20	19.00
STD DEV	.10	.01	8.36	.02	.05	5.14
COEFF OF VAR	1.04	.23	.61	.40	.57	.95
# OF SAMPLES	49	49	49	49	49	49

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PROGRAM

07/ 5/06

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
07/03/05	.10					
07/10/05	.20					
07/17/05	.30					
07/24/05	.10					
08/02/05	.40					
08/07/05	.30					
08/14/05	.20					
08/21/05	.10					
08/28/05	BDL					
09/11/05	BDL					
10/02/05	BDL					
10/09/05	BDL					
10/16/05	BDL					
10/23/05	.10					
10/30/05	.20					
11/13/05	.20					
11/20/05	.10					
11/27/05	BDL					
12/11/05	.40					
12/18/05	BDL					
12/31/05	BDL					
01/08/06	BDL					
01/15/06	BDL					
01/22/06	BDL					
01/29/06	BDL					
02/05/06	BDL					
02/11/06	BDL					
02/19/06	BDL					
02/26/06	BDL					

AR300990

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/85 TO 6/30/06

DATE	TOTAL THM (ug/1)	ACETONE (ug/1)	DIMETHOXY METHANE (ug/1)	TETRAHYDRO FURAN (ug/1)	MEK (ug/1)	1,4DIOXANE (ug/1)
03/06/86	BDL					
03/19/86	.30					
03/26/86	BDL					
04/02/86	BDL					
04/16/86	BDL					
04/23/86	BDL					
05/01/86	BDL					
05/07/86	BDL					
05/14/86	BDL					
05/22/86	BDL					
05/28/86	BDL					
06/04/86	BDL					
06/11/86	BDL					
/18/86	.10					
AVERAGE	.10					
MINIMUM	.05					
MAXIMUM	.40					
STD DEV	.10					
COEFF OF VAR	.94					
# OF SAMPLES	43	0	0	0	0	0

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# >

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
07/03/05	64.00					
07/10/05	56.00					
07/17/05	77.00					
07/24/05	70.00					
07/31/05	79.00					
08/07/05	81.00					
08/14/05	87.00					
08/22/05	82.00					
08/28/05	76.00					
09/04/05	68.00					
09/11/05	59.00					
09/25/05	59.00					
10/02/05	82.00					
/09/05	86.00					
/16/05	54.00					
10/23/05	56.00					
10/30/05	62.00					
11/06/05	41.00					
11/13/05	67.00					
11/20/05	55.00					
11/27/05	46.00					
12/04/05	32.00					
12/11/05	23.00					
12/18/05	19.00					
12/26/05	14.00					
01/03/06	15.00					
01/08/06	18.00					
01/15/06	18.00					
01/22/06	22.00					

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

GL HIGH SERVICE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
01/29/06	34.00					
02/05/06	16.00					
02/11/06	18.00					
02/19/06	16.00					
02/26/06	27.00					
03/05/06	17.00					
03/12/06	10.00					
03/19/06	32.00					
03/26/06	24.00					
04/02/06	33.00					
04/09/06	27.00					
04/16/06	34.00					
04/23/06	37.00					
04/30/06	36.00					
07/06	30.00					
14/06	42.00					
05/21/06	54.00					
05/28/06	61.00					
06/04/06	63.00					
06/11/06	68.00					
06/18/06	89.00					
AVERAGE	47.04					
MINIMUM	14.00					
MAXIMUM	89.00					
STD DEV	23.74					
COEFF OF VAR	.50					
# OF SAMPLES	50	0	0	0	0	0

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/85 TO 6/30/86

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
07/03/85	.20					
07/10/85	.20					
07/17/85	.10					
07/24/85	.10					
08/02/85	.40					
08/07/85	.30					
08/14/85	.10					
08/21/85	BDL					
08/28/85	BDL					
09/11/85	BDL					
10/02/85	BDL					
10/09/85	.20					
10/16/85	BDL					
10/23/85	BDL					
10/30/85	.20					
11/13/85	BDL					
11/20/85	.10					
11/27/85	BDL					
12/11/85	.10					
12/10/85	BDL					
12/31/85	BDL					
01/00/86	BDL					
01/15/86	BDL					
01/22/86	BDL					
01/27/86	BDL					
02/05/86	BDL					
02/19/86	BDL					
02/26/86	BDL					
03/06/86	BDL					

0/ 5/06

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
03/12/06	.10					
03/26/06	BDL					
04/02/06	BDL					
04/09/06	BDL					
04/16/06	BDL					
04/23/06	BDL					
04/30/06	BDL					
05/07/06	BDL					
05/14/06	BDL					
05/28/06	BDL					
06/04/06	BDL					
06/11/06	BDL					
06/18/06	.10					
AVERAGE	.09					
MINIMUM	.05					
MAXIMUM	.40					
STD DEV	.08					
COEFF OF VAR	.87					
# OF SAMPLES	42	0	0	0	0	0

% >
# >

% <
# <

AR300995

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
07/03/05	50.00					
07/10/05	82.00					
07/17/05	83.00					
07/24/05	86.00					
07/31/05	80.00					
08/07/05	66.00					
08/14/05	85.00					
08/22/05	83.00					
08/28/05	76.00					
09/04/05	84.00					
09/11/05	61.00					
09/18/05	60.00					
10/02/05	65.00					
10/16/05	46.00					
10/23/05	46.00					
1[illegible]/10/05	64.00					
1[illegible]/06/05	53.00					
11/13/05	69.00					
11/20/05	65.00					
11/27/05	44.00					
12/04/05	29.00					
12/11/05	23.00					
12/18/05	28.00					
12/26/05	24.00					
01/03/06	14.00					
01/08/06	19.00					
01/15/06	19.00					
01/22/06	33.00					
01/29/06	28.00					

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
02/05/06	18.00					
02/11/06	21.00					
02/19/06	22.00					
02/26/06	21.00					
03/05/06	16.00					
03/12/06	15.00					
03/19/06	28.00					
03/26/06	17.00					
04/02/06	20.00					
04/09/06	20.00					
04/16/06	24.00					
04/23/06	27.00					
04/30/06	39.00					
5/07/06	39.00					
5/14/06	46.00					
5/[illegible]/06	55.00					
5/28/06	67.00					
6/04/06	76.00					
6/11/06	59.00					
6/18/06	81.00					
AVERAGE	46.70					
MINIMUM	14.00					
MAXIMUM	86.00					
STD DEV	24.24					
COEFF OF VAR	.52					
# OF SAMPLES	49	0	0	0	0	0
% >						
# >						
% <						
# <						

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	BENZENE (ug/l)	MIBK (ug/l)	TOLUENE (ug/l)	ETHYL BENZENE (ug/l)	CUMENE (ug/l)	o-XYLENE (ug/l)
AVERAGE						
MINIMUM						
MAXIMUM						
STD DEV						
COEFF OF VAR						
# OF SAMPLES	0	0	0	0	0	0

% >
# >

% <
# <

AR300998

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

07/ 5/06

QL HIGH SERVICE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	BENZENE (ug/l)	MTBE (ug/l)	TOLUENE (ug/l)	ETHYL BENZENE (ug/l)	CUMENE (ug/l)	o-XYLENE (ug/l)
07/03/05	BDL	-------	BDL	BDL	BDL	BDL
08/07/05	BDL	-------	BDL	BDL	BDL	BDL
AVERAGE	.05		.05	.05	.05	.05
MINIMUM	.05		.05	.05	.05	.05
MAXIMUM	.05		.05	.05	.05	.05
STD DEV						
COEFF OF VAR						
# OF SAMPLES	2	0	2	2	2	2

% >
# >

% <
# <

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	BENZENE (ug/l)	MIBK (ug/l)	TOLUENE (ug/l)	ETHYL BENZENE (ug/l)	CUMENE (ug/l)	o-XYLENE (ug/l)
07/03/05	.20	--------	.20	BDL	BDL	BDL
08/07/05	BDL	--------	BDL	BDL	BDL	BDL
AVERAGE	.13		.13	.05	.05	.05
MINIMUM	.05		.05	.05	.05	.05
MAXIMUM	.20		.20	.05	.05	.05
STD DEV						
COEFF OF VAR						
# OF SAMPLES	2	0	2	2	2	2

%)
#)

% (
# (

AR301000

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	BENZENE (ug/l)	MIBK (ug/l)	TOLUENE (ug/l)	ETHYL BENZENE (ug/l)	CUMENE (ug/l)	o-XYLENE (ug/l)
07/03/05	BDL	----------	BDL	BDL	BDL	BDL
08/07/05	BDL	----------	BDL	BDL	BDL	BDL
AVERAGE	.05		.05	.05	.05	.05
MINIMUM	.05		.05	.05	.05	.05
MAXIMUM	.05		.05	.05	.05	.05
STD DEV						
COEFF OF VAR						
# OF SAMPLES	2	0	2	2	2	2

% >
# >

% <
# <

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/85 TO 6/30/86

DATE	m-XYLENE (ug/l)	p-XYLENE (ug/l)	o-DICHLORO BENZENE (ug/l)	m-DICHLORO BENZENE (ug/l)	p-DICHLORO BENZENE (ug/l)	STYRENE (ug/l)
07/03/85	BDL	BDL	BDL	BDL	BDL	BDL
08/07/85	BDL	BDL			BDL	BDL
AVERAGE	.05	.05	.05	.05	.05	.05
MINIMUM	.05	.05	.05	.05	.05	.05
MAXIMUM	.05	.05	.05	.05	.05	.05
STD DEV						
COEFF OF VAR						
# OF SAMPLES	2	2	1	1	2	2

% >
# >

% <
# <

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BL HIGH SERVICE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	m-XYLENE (ug/l)	p-XYLENE (ug/l)	o-DICHLORO BENZENE (ug/l)	m-DICHLORO BENZENE (ug/l)	p-DICHLORO BENZENE (ug/l)	STYRENE (ug/l)
07/03/05	BDL	BDL	BDL	BDL	BDL	BDL
08/07/05	BDL	BDL	BDL	BDL	BDL	BDL
AVERAGE	.05	.05	.05	.05	.05	.05
MINIMUM	.05	.05	.05	.05	.05	.05
MAXIMUM	.05	.05	.05	.05	.05	.05
STD DEV						
COEFF OF VAR						
# OF SAMPLES	2	2	2	2	2	2

% >
# >

% <
# <

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

ELMONT INTAKE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	m-XYLENE (ug/l)	p-XYLENE (ug/l)	o-XYLENE (ug/l)	m-DICHLORO BENZENE (ug/l)	p-DICHLORO BENZENE (ug/l)	STYRENE (ug/l)
07/03/05	BDL	BDL	BDL	BDL	BDL	BDL
08/07/05	BDL	BDL	BDL			BDL
AVERAGE	.05	.05	.05	.05	.05	.05
MINIMUM	.05	.05	.05	.05	.05	.05
MAXIMUM	.05	.05	.05	.05	.05	.05
STD DEV						
COEFF OF VAR						
# OF SAMPLES	2	2	2	1	1	2

% >
# >

% <
# <

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/05 TO 6/30/06

DATE	m-XYLENE (ug/l)	p-XYLENE (ug/l)	o-DICHLORO BENZENE (ug/l)	m-DICHLORO BENZENE (ug/l)	p-DICHLORO BENZENE (ug/l)	STYRENE (ug/l)
07/03/05	BDL	BDL	BDL	BDL	BDL	BDL
08/07/05	BDL	BDL	BDL	BDL	BDL	BDL
AVERAGE	.05	.05	.05	.05	.05	.05
MINIMUM	.05	.05	.05	.05	.05	.05
MAXIMUM	.05	.05	.05	.05	.05	.05
STD DEV						
COEFF OF VAR						
# OF SAMPLES	2	2	2	2	2	2

% >
# >

% <
# <

AR301005

OF PROGRAM

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 01/01/85 TO 12/31/85

DATE	METHYLENE CHLORIDE (ug/l)	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	TETRACHLOR ETHYLENE (ug/l)	o-XYLENE (ug/l)	M-XYLENE (ug/l)
01/02/85	.30	.10	BDL	BDL	BDL	BDL
01/09/85	.10	BDL	BDL	BDL	------	------
01/16/85	.20	BDL	BDL	BDL	------	------
01/23/85	------	BDL	BDL	BDL	------	------
01/30/85	1.60	.40	BDL	.20	------	------
02/06/85	.60	.10	BDL	BDL	BDL	BDL
02/13/85	.20	BDL	BDL	.20	------	------
02/21/85	.40	BDL	BDL	BDL	------	------
02/28/85	.20	BDL	BDL	BDL	------	------
03/06/85	.20	BDL	BDL	BDL	BDL	BDL
03/13/85	.10	BDL	BDL	BDL	------	------
03/20/85	.20	BDL	BDL	BDL	------	------
03/27/85	.20	BDL	BDL	BDL	------	------
04/03/85	.20	BDL	BDL	BDL	BDL	BDL
04/10/85	.90	BDL	BDL	BDL	------	------
04/17/85	.20	BDL	BDL	BDL	------	------
04/24/85	.30	.10	BDL	.10	------	------
05/01/85	.30	BDL	BDL	BDL	------	------
05/08/85	.20	BDL	BDL	BDL	BDL	BDL
05/15/85	.20	BDL	BDL	BDL	------	------
05/22/85	.10	BDL	BDL	BDL	------	------
05/29/85	.10	BDL	BDL	BDL	------	------
06/05/85	.30	BDL	BDL	BDL	------	------
06/12/85	.60	BDL	BDL	BDL	BDL	BDL
06/19/85	.50	BDL	BDL	BDL	------	------
06/26/85	.40	BDL	BDL	BDL	------	------
07/03/85	.20	BDL	BDL	BDL	BDL	BDL
07/10/85	.30	BDL	BDL	BDL	------	------
07/17/85	1.40	BDL	BDL	BDL	------	------

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 01/01/85 TO 12/31/85

DATE	METHYLENE CHLORIDE (ug/l)	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	TETRACHLOR ETHYLENE (ug/l)	o-XYLENE (ug/l)	m-XYLENE (ug/l)
07/24/85	.30	.20	BDL	BDL	------	------
08/02/85	.80	BDL	BDL	BDL	------	------
08/07/85	.40	BDL	BDL	BDL	BDL	BDL
08/14/85	.20	BDL	BDL	3.80	------	------
08/21/85	.60	BDL	BDL	BDL	------	------
08/28/85	.40	BDL	BDL	BDL	------	------
09/11/85	.30	------	BDL	BDL	------	------
12/31/85	BDL	.20	BDL	BDL	------	------
AVERAGE	.38	.07	.05	.16	.05	.05
MINIMUM	.05	.05	.05	.05	.05	.05
MAXIMUM	1.60	.40	.05	3.80	.05	.05
STD DEV	.34	.07	.00	.62	.00	.00
COEFF OF VAR	.90	.93	.00	3.83	.00	.00
# OF SAMPLES	36	36	37	37	8	8

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# (

PROGRAM

2/ 7/86

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

GL HIGH SERVICE

PERIOD FROM 01/01/85 TO 12/31/85

DATE	METHYLENE CHLORIDE (ug/l)	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	TETRACHLOR ETHYLENE (ug/l)	o-XYLENE (ug/l)	m-XYLENE (ug/l)
01/02/85	.40	.20	BDL	BDL	BDL	BDL
01/09/85	.20	BDL	BDL	BDL	------	------
01/16/85	.10	BDL	.10	BDL	------	------
01/24/85	1.60	BDL	BDL	BDL	------	------
01/30/85	.90	.20	BDL	.10	------	------
02/06/85	.30	.20	.10	BDL	BDL	BDL
02/13/85	.30	.10	.10	BDL	------	------
02/21/85	.30	BDL	BDL	BDL	------	------
02/27/85	.30	BDL	BDL	BDL	------	------
03/06/85	.10	BDL	BDL	BDL	BDL	BDL
03/13/85	.20	BDL	BDL	BDL	------	------
03/20/85	.20	BDL	BDL	BDL	------	------
03/27/85	.50	BDL	BDL	BDL	------	------
04/03/85	.30	BDL	BDL	.20	BDL	BDL
04/10/85	.40	BDL	BDL	BDL	------	------
04/17/85	.70	BDL	BDL	BDL	------	------
04/24/85	.30	BDL	BDL	.20	------	------
05/01/85	.50	BDL	BDL	BDL	------	------
05/08/85	.70	BDL	BDL	BDL	BDL	BDL
05/15/85	BDL	BDL	BDL	BDL	------	------
05/22/85	.50	BDL	BDL	BDL	------	------
05/29/85	.60	BDL	BDL	BDL	------	------
06/05/85	.20	BDL	BDL	BDL	------	------
06/12/85	.40	BDL	BDL	BDL	BDL	BDL
06/19/85	.40	BDL	BDL	BDL	------	------
06/26/85	.60	BDL	BDL	BDL	------	------
07/03/85	.60	BDL	BDL	BDL	BDL	BDL
07/10/85	------	BDL	BDL	BDL	------	------
07/17/85	.40	BDL	BDL	BDL	------	------

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 01/01/85 TO 12/31/85

DATE	METHYLENE CHLORIDE (ug/l)	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	TETRACHLOR ETHYLENE (ug/l)	o-XYLENE (ug/l)	m-XYLENE (ug/l)
07/24/85	.60	BDL	.10	BDL	------	------
07/31/85	------	BDL	.10	BDL	------	------
08/07/85	.60	BDL	.10	BDL	BDL	BDL
08/14/85	1.30	BDL	BDL	.20	------	------
08/22/85	.20	BDL	BDL	BDL	------	------
08/28/85	.20	.10	.10	.10	------	------
09/04/85	.10	BDL	BDL	.10	------	------
09/11/85	2.20	BDL	BDL	BDL	------	------
09/25/85	.10	BDL	BDL	BDL	------	------
10/02/85	.40	BDL	BDL	BDL	------	------
10/09/85	.10	BDL	BDL	BDL	------	------
10/16/85	.30	BDL	BDL	.10	------	------
10/23/85	------	BDL	BDL	BDL	------	------
/30/85	.20	BDL	BDL	BDL	------	------
/06/85	.20	BDL	BDL	BDL	------	------
11/13/85	.30	BDL	BDL	BDL	------	------
11/20/85	BDL	BDL	BDL	.10	------	------
11/27/85	.10	BDL	BDL	BDL	------	------
12/04/85	.20	BDL	BDL	BDL	------	------
12/11/85	.30	BDL	BDL	BDL	------	------
12/18/85	------	BDL	BDL	BDL	------	------
12/26/85	BDL	.20	BDL	BDL	------	------
AVERAGE	.42	.06	.06	.06	.05	.05
MINIMUM	.05	.05	.05	.05	.05	.05
MAXIMUM	2.20	.20	.10	.20	.05	.05
STD DEV	.40	.04	.02	.04	.00	.00
COEFF OF VAR	.97	.65	.31	.59	.00	.00
# OF SAMPLES	47	51	51	51	8	8

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OF PROGRAM

2/ 7/86

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 01/01/85 TO 12/31/85

DATE	METHYLENE CHLORIDE (ug/l)	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TOLUENE (ug/l)
01/02/85	.10	.10	BDL	BDL	.10	BDL
01/09/85	BDL	BDL	BDL	BDL	BDL	------
01/16/85	.20	BDL	BDL	BDL	BDL	------
01/23/85	.20	BDL	BDL	BDL	.20	------
01/31/85	.40	BDL	BDL	BDL	.20	------
02/06/85	.40	.10	BDL	BDL	.40	BDL
02/13/85	BDL	BDL	BDL	BDL	2.20	------
02/20/85	.10	BDL	BDL	BDL	.20	------
02/27/85	.20	BDL	BDL	BDL	.20	------
03/06/85	BDL	BDL	BDL	BDL	.20	BDL
03/13/85	BDL	BDL	BDL	BDL	.10	------
03/20/85	.10	BDL	BDL	BDL	.20	------
03/27/85	.30	BDL	BDL	BDL	BDL	------
04/03/85	.20	BDL	BDL	BDL	.30	1.10
04/10/85	.50	BDL	BDL	BDL	.30	------
04/17/85	.20	BDL	BDL	BDL	.50	------
04/24/85	.20	BDL	BDL	BDL	.40	------
05/01/85	.40	BDL	BDL	BDL	.30	------
05/08/85	.30	BDL	BDL	BDL	.20	BDL
05/15/85	.20	BDL	BDL	BDL	.50	------
05/22/85	.20	BDL	BDL	BDL	.10	------
05/29/85	.20	BDL	BDL	BDL	.10	------
06/12/85	.30	BDL	BDL	BDL	BDL	BDL
06/19/85	.10	BDL	BDL	BDL	BDL	------
06/26/85	3.60	BDL	BDL	BDL	BDL	------
07/03/85	.60	BDL	BDL	BDL	BDL	.20
07/10/85	.30	BDL	BDL	BDL	BDL	------
07/17/85	1.30	BDL	BDL	BDL	BDL	------
07/24/85	.30	BDL	BDL	BDL	BDL	------

AR301010

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 01/01/85 TO 12/31/85

DATE	METHYLENE CHLORIDE (ug/l)	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TOLUENE (ug/l)
08/02/85	.80	BDL	BDL	BDL	BDL	------
08/07/85	.50	BDL	BDL	BDL	BDL	BDL
08/14/85	------	BDL	BDL	BDL	BDL	------
08/21/85	BDL	BDL	BDL	BDL	BDL	------
08/28/85	.30	BDL	BDL	BDL	BDL	------
09/11/85	BDL	------	BDL	BDL	BDL	------
12/31/85	BDL	BDL	BDL	BDL	BDL	------
AVERAGE	.37	.05	.05	.10	.21	.20
MINIMUM	.05	.05	.05	.10	.05	.05
MAXIMUM	3.60	.10	.05	.10	2.20	1.10
STD DEV	.62	.01	.00	.00	.37	.37
COEFF OF VAR	1.68	.22	.00	.00	1.75	1.84
# OF SAMPLES	35	35	36	36	36	8

% >
# >

% <
# <

2/ 7/86

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

AR301011

PERIOD FROM 01/01/85 TO 12/31/85

	METHYLENE CHLORIDE (ug/l)	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TOLUENE (ug/l)
01/02/85	.50	.20	BDL	BDL	.20	BDL
01/09/85	.10	BDL	BDL	BDL	.10	------
01/16/85	.20	BDL	BDL	BDL	.10	------
01/24/85	1.50	.20	.10	BDL	.30	------
01/30/85	1.50	.30	.10	BDL	.50	------
02/06/85	.30	.20	.10	.20	.30	.20
02/13/85	.30	BDL	BDL	.20	.60	------
02/21/85	.10	BDL	BDL	BDL	.20	------
02/27/85	.20	BDL	BDL	BDL	.40	------
03/06/85	.20	BDL	BDL	BDL	.20	.10
03/13/85	.30	BDL	BDL	.10	.20	------
03/20/85	.20	.10	BDL	BDL	.30	------
03/27/85	.50	BDL	BDL	BDL	.40	------
04/03/85	.40	BDL	BDL	.20	.60	.20
04/10/85	.70	BDL	BDL	1.10	.50	------
04/17/85	.40	BDL	BDL	.40	.80	------
04/24/85	.80	BDL	BDL	.90	.50	------
05/01/85	.30	BDL	BDL	BDL	.20	------
05/08/85	.80	BDL	BDL	BDL	.10	BDL
05/15/85	.40	BDL	BDL	BDL	.60	------
05/22/85	.40	BDL	BDL	BDL	BDL	------
05/29/85	.30	BDL	BDL	.40	.20	------
06/05/85	.40	BDL	BDL	1.70	.20	------
06/12/85	.80	BDL	BDL	1.40	BDL	BDL
06/19/85	.50	.10	BDL	.90	BDL	------
06/26/85	.40	BDL	BDL	.70	BDL	------
07/03/85	.70	BDL	BDL	2.60	BDL	BDL
07/10/85	.30	BDL	BDL	1.30	BDL	------
07/17/85	.20	BDL	BDL	1.20	BDL	------

2/ 7/06

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

AR301012

PERIOD FROM 01/01/85 TO 12/31/85

	METHYLENE CHLORIDE (ug/l)	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TOLUENE (ug/l)
07/24/85	.80	BDL	.10	.70	.10	------
07/31/85	------	BDL	BDL	1.40	BDL	------
08/07/85	.40	BDL	.10	.10	BDL	BDL
08/14/85	.90	BDL	BDL	1.10	BDL	------
08/22/85	.20	BDL	BDL	2.40	BDL	------
08/28/85	.40	BDL	BDL	1.50	BDL	------
09/04/85	.40	BDL	BDL	2.20	BDL	------
09/11/85	.20	BDL	.10	1.20	BDL	------
09/18/85	.20	BDL	BDL	.50	BDL	------
10/02/85	------	BDL	BDL	BDL	BDL	------
10/16/85	.10	BDL	BDL	BDL	BDL	------
10/23/85	------	BDL	BDL	.20	BDL	------
10/30/85	------	BDL	BDL	2.50	BDL	------
11/06/85	.20	BDL	BDL	.90	.20	------
11/13/85	.20	BDL	BDL	.10	.10	------
11/20/85	BDL	.10	BDL	BDL	BDL	------
11/27/85	.10	BDL	BDL	.30	.10	------
12/04/85	------	BDL	BDL	BDL	.20	------
12/11/85	------	BDL	BDL	BDL	.20	------
12/18/85	------	.10	BDL	BDL	.20	------
12/26/85	BDL	.20	BDL	BDL	BDL	------
AVERAGE	.42	.07	.06	.61	.19	.09
MINIMUM	.05	.05	.05	.10	.05	.05
MAXIMUM	1.50	.30	.10	2.60	.80	.20
STD DEV	.33	.05	.02	.72	.19	.07
COEFF OF VAR	.79	.75	.29	1.18	.98	.72
# OF SAMPLES	43	50	50	50	50	8

% >
# >

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# <

END OF PROGRAM

AR301013

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT3 ***

112TRICHLOROETHYLENE (ug/l)

PERIOD FROM 01/01/85 TO 12/31/85

	QUEEN LANE SCHUYL. DIP	QUEEN LANE HIGH SERVICE	BELMONT SCHUYL. DIP	BELMONT HIGH SERVICE
01/02/85	BDL	.20	BDL	.20
01/09/85	BDL	.10	BDL	.20
01/16/85	BDL	BDL	BDL	.10
01/23/85	BDL	------	BDL	------
01/24/85	------	.20	------	.20
01/30/85	.10	.30	------	.30
01/31/85	------	------	BDL	------
02/06/85	BDL	.50	BDL	.30
02/13/85	BDL	.50	BDL	.30
02/20/85	------	------	BDL	------
02/21/85	BDL	.20	------	.20
02/27/85	------	.20	BDL	.20
02/28/85	BDL	------	------	------
03/06/85	BDL	.10	BDL	.10
03/13/85	BDL	.20	BDL	.10
03/20/85	BDL	.10	BDL	.10
03/27/85	BDL	.10	BDL	BDL
04/03/85	BDL	.10	BDL	.10
04/10/85	BDL	BDL	BDL	.10
04/17/85	BDL	.20	BDL	.20
04/24/85	BDL	.20	BDL	.40
05/01/85	BDL	BDL	BDL	BDL
05/08/85	BDL	BDL	BDL	BDL
05/15/85	BDL	BDL	BDL	BDL
05/22/85	BDL	BDL	BDL	BDL
05/29/85	BDL	BDL	BDL	BDL
06/05/85	BDL	BDL	------	BDL
06/12/85	BDL	BDL	BDL	BDL
06/19/85	BDL	.10	BDL	BDL
06/26/85	BDL	BDL	BDL	.10
07/03/85	BDL	BDL	BDL	BDL
07/10/85	BDL	BDL	BDL	BDL
07/17/85	BDL	.10	BDL	.10
07/24/85	BDL	BDL	BDL	.10
07/31/85	------	.10	------	.10

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT3 ***

112TRICHLOROETHYLENE (ug/l)

PERIOD FROM 01/01/85 TO 12/31/85

	QUEEN LANE SCHUYL. DIP	QUEEN LANE HIGH SERVICE	BELMONT SCHUYL. DIP	BELMONT HIGH SERVICE
08/02/85	BDL	------	BDL	------
08/07/85	BDL	.10	BDL	.20
08/14/85	BDL	.10	BDL	.10
08/21/85	BDL	------	BDL	------
08/22/85	------	BDL	------	BDL
08/28/85	BDL	.10	BDL	.20
09/04/85	------	BDL	------	.20
09/11/85	BDL	BDL	BDL	.10
09/18/85	------	------	------	BDL
09/25/85	------	BDL	------	------
10/02/85	------	BDL	------	.20
10/09/85	------	BDL	------	------
10/16/85	------	BDL	------	BDL
10/23/85	------	BDL	------	BDL
10/30/85	------	BDL	------	.20
11/06/85	------	.10	------	.10
11/13/85	------	BDL	------	.10
11/20/85	------	.20	------	BDL
11/27/85	------	BDL	------	.10
12/04/85	------	BDL	------	.10
12/11/85	------	BDL	------	.20
12/18/85	------	BDL	------	.10
12/26/85	------	.20	------	.10
12/31/85	BDL	BDL	BDL	------
AVERAGE	.05	.11	.05	.13
MINIMUM	.05	.05	.05	.05
MAXIMUM	.10	.50	.05	.40
STD DEV	.01	.10	.00	.08
COEFF OF VAR	.16	.91	.00	.66
# OF SAMPLES	37	51	36	50

PROGRAM

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT4 ***

2/ 7/86

PERIOD FROM 1/01/85 TO 12/31/85

		QUEEN LANE INTAKE			QL HIGH SERVICE		
		AVG	NUM SAMPLS	#/% GT 0.05	AVG	NUM SAMPLS	#/% GT 0.05
METHYLENE CHLORIDE	ug/l	.30	36	35/97	.42	47	44/93
11DICHLOROETHYLENE	ug/l	.05	37	0/ 0	.05	51	0/ 0
1,1-DICHLOROETHANE	ug/l	.05	37	0/ 0	.05	51	0/ 0
t12DICHLOROETHYLENE	ug/l	.05	37	1/ 2	.05	51	0/ 0
CHLOROFORM	ug/l	.14	37	22/59	28.97	51	51/**
1,2-DICHLOROETHANE	ug/l	.05	37	0/ 0	.05	51	0/ 0
,1TRICHLOROETHANE	ug/l	.07	36	6/16	.06	51	6/11
.BON TETRACHLORIDE	ug/l	.05	37	0/ 0	.06	51	7/13
DICHLOROBROMOMETHANE	ug/l	.05	37	0/ 0	14.04	51	51/**
1,2-DICHLOROPROPANE	ug/l	.05	37	0/ 0	.05	51	0/ 0
112TRICHLOROETHYLENE	ug/l	.05	37	1/ 2	.11	51	24/47
DIBROMOCHLOROMETHANE	ug/l	.05	37	0/ 0	4.99	51	50/98
CLORETHYLVINYLETHER	ug/l	.10	37	37/**	.26	49	49/**
ROMOFORM	ug/l	.10	37	37/**	.39	50	50/**
33TRICHLOROPROPANE	ug/l	.20	37	19/51	.16	51	27/52
ETRACHLOROETHYLENE	ug/l	.16	37	4/10	.06	51	8/15
LOROBENZENE	ug/l	.10	35	35/**	.10	45	45/**
S2CHLOROETHYLETHER	ug/l	1.00	27	27/**	1.00	31	31/**
TAL. TRIHALOMETHANE	ug/l	.14	37	22/59	40.53	51	51/**
E	ug/l						
L.HOXYMETHANE	ug/l	.50	2	2/**	.50	2	2/**
RAHYDROFURAN	ug/l						
YL ETHYL KETONE	ug/l						

AR301016

NE	ug/l	.05	7	0/ 0	.05	8	0/ 0

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT4 ***

2/ 7/86

PERIOD FROM 1/01/85 TO 12/31/85

		QUEEN LANE INTAKE			QL HIGH SERVICE			
		AVG	NUM SAMPLS	#/% GT 0.05	AVG	NUM SAMPLS	#/% GT 0.05	
METHYLISOBUTYLKETONE	ug/l							
TOLUENE	ug/l	.05	8	0/ 0	.11	8	3/37	
ETHYL BENZENE	ug/l	.05	8	0/ 0	.05	8	0/ 0	
CUMENE	ug/l	.05	8	0/ 0	.05	8	0/ 0	
o-XYLENE	ug/l	.05	8	0/ 0	.05	8	0/ 0	
M-XYLENE	ug/l	.05	8	0/ 0	.05	8	0/ 0	
P-XYLENE	ug/l	.07	8	1/12	.07	8	1/12	0
o-CHLOROBENZENE	ug/l	.07	6	2/33	.09	7	2/28	0
1-DICHLOROBENZENE	ug/l	.05	6	0/ 0	.05	8	0/ 0	.0
1-DICHLOROBENZENE	ug/l	.05	7	0/ 0	.05	8	0/ 0	20
TYRENE	ug/l	.05	6	0/ 0	.05	6	0/ 0	70

* ALL RESULTS IN MG/L EXCEPT AS NOTED

.20
.20
.20

AR301017

END OF PROGRAM

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT4 ***

2/ 7/86

PERIOD FROM 1/01/85 TO 12/31/85

			BELMONT INTAKE				BELMONT HIGH SERVI		
		No. samples	AVG	#/% GT 0.05	#/% LT 0.1		AVG	#/% GT 0.05	#/% L 0.1
METHYLENE CHLORIDE	ug/1	35	.37	20/80	7/20	43	.42	41/95	2/ 4
11DICHLOROETHYLENE	ug/1	36	.05	0/ 0	36/**		.05	0/ 0	50/**
1,1-DICHLOROETHANE	ug/1	"	.05	0/ 0	36/**		.05	0/ 0	50/**
t12DICHLOROETHYLENE	ug/1	"	.05	0/ 0	36/**		.05	0/ 0	50/**
CHLOROFORM	ug/1	36	.13	17/47	19/52		20.05	50/**	0/ 0
1,2-DICHLOROETHANE	ug/1	36	.05	1/ 2	35/97		.05	0/ 0	50/**
1,1,1TRICHLOROETHANE	ug/1	35	.05	2/ 5	33/94		.07	9/18	41/82
CARBON TETRACHLORIDE	ug/1	36	.05	0/ 0	36/**		.06	6/12	44/88
DICHLOROBROMOMETHANE	ug/1	"	.05	0/ 0	36/**		15.07	50/**	0/ 0
1,2-DICHLOROPROPANE	ug/1	"	.05	0/ 0	36/**		.05	0/ 0	50/**
112TRICHLOROETHYLENE	ug/1	"	.05	0/ 0	36/**		.13	34/68	16/32
DIBROMOCHLOROMETHANE	ug/1		.05	0/ 0	36/**		6.05	50/**	0/ 0
2CLORETHYLVINYLETHER	ug/1		.10	36/**	0/ 0		.10	50/**	0/ 0
BROMOFORM	ug/1		.10	36/**	0/ 0		.61	50/**	0/ 0
123TRICHLOROPROPANE	ug/1		.21	19/52	17/47		.19	29/58	21/42
TETRACHLOROETHYLENE	ug/1		.06	4/11	32/88		.07	12/24	38/76
CHLOROBENZENE	ug/1		.10	33/**	0/ 0		.10	46/**	0/ 0
BIS2CHLOROETHYLETHER	ug/1		1.00	26/**	0/ 0		1.00	32/**	0/ 0
TOTAL TRIHALOMETHANE	ug/1		.13	17/47	19/52		47.74	50/**	0/ 0
ACETONE	ug/1								
DIMETHOXYMETHANE	ug/1		.50	2/**	0/ 0		.50	2/**	0/ 0
TETRAHYDROFURAN	ug/1								
METHYL ETHYL KETONE	ug/1								
1,4 DIOXANE	ug/1								

AR301018

	ug/l	.10	2/25	6/75	.05	0/ 0	8/**

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT4 ***

2/ 7/86

PERIOD FROM 1/01/85 TO 12/31/85

		BELMONT INTAKE			BELMONT HIGH SERVICE		
		AVG	#/% GT 0.05	#/% LT 0.1	AVG	#/% GT 0.05	#/% LT 0.1
METHYLISOBUTYLKETONE	ug/l						
TOLUENE	ug/l	.20	2/25	6/75	.09	3/37	5/62
ETHYL BENZENE	ug/l	.06	1/12	7/87	.05	0/ 0	8/**
CUMENE	ug/l	.05	0/ 0	8/**	.05	0/ 0	8/**
o-XYLENE	ug/l	.07	1/12	7/87	.05	0/ 0	8/**
m-XYLENE	ug/l	.08	1/12	7/87	.05	0/ 0	8/**
p-XYLENE	ug/l	.07	2/25	6/75	.08	1/12	7/87
-DICHLOROBENZENE	ug/l	.06	1/14	6/85	.08	3/37	5/62
m-DICHLOROBENZENE	ug/l	.05	0/ 0	6/**	.05	0/ 0	7/**
p-DICHLOROBENZENE	ug/l	.11	1/16	5/83	.05	0/ 0	7/**
STYRENE	ug/l	.05	0/ 0	6/**	.05	0/ 0	6/**

* ALL RESULTS IN MG/L EXCEPT AS NOTED

END OF PROGRAM

12/19/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
07/12/82	BDL	BDL	------	.10	BDL	BDL
08/23/82	BDL	BDL	------	.10	BDL	BDL
09/03/82	BDL	BDL	------	.10	BDL	BDL
10/25/82	BDL	BDL	------	.10	BDL	BDL
11/22/82	BDL	BDL	------	.10	BDL	BDL
12/20/82	BDL	BDL	------	.10	BDL	BDL
01/17/83	BDL	BDL	------	.10	BDL	BDL
02/22/83	BDL	BDL	------	.50	BDL	------
02/28/83	BDL	BDL	------	BDL	BDL	------
03/07/83	BDL	BDL	.50	.10	BDL	------
03/14/83	BDL	BDL	.10	.60	BDL	------
03/21/83	BDL	BDL	.10	.50	BDL	------
03/28/83	BDL	BDL	.10	.40	BDL	------
04/04/83	BDL	BDL	.10	.10	BDL	------
04/11/83	BDL	BDL	.50	.70	BDL	------
04/18/83	BDL	BDL	.10	.40	BDL	------
04/26/83	BDL	BDL	BDL	.30	BDL	------
05/02/83	BDL	BDL	.10	.50	BDL	------
05/09/83	BDL	BDL	.20	.20	BDL	------
05/16/83	BDL	BDL	.20	.20	BDL	------
05/23/83	BDL	BDL	BDL	.40	BDL	------
05/31/83	BDL	BDL	.10	.40	BDL	------
06/06/83	BDL	BDL	.10	.30	BDL	------
06/13/83	BDL	BDL	.20	.20	BDL	------
AVERAGE	.10	.10	.17	.27	.10	1.00
MINIMUM	.10	.10	.05	.05	.10	1.00
MAXIMUM	.10	.10	.50	.70	.10	1.00
STD DEV	.00	.00	.14	.19	.00	
COEFF OF VAR	.00	.00	.86	.70	.00	
# OF SAMPLES	24	24	15	24	24	7

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# >

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AR301020

12/19/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
07/06/82	BDL	.20	------	.10	BDL	BDL
07/12/82	BDL	.40	------	.10	BDL	BDL
07/19/82	BDL	.60	------	.10	BDL	BDL
07/26/82	BDL	1.00	------	.10	BDL	BDL
08/04/82	BDL	.20	------	.20	BDL	BDL
08/10/82	BDL	.40	------	.30	BDL	BDL
08/16/82	BDL	.40	------	.40	BDL	BDL
08/23/82	BDL	.70	------	.10	BDL	BDL
09/01/82	BDL	.20	------	.10	BDL	BDL
09/08/82	BDL	.40	------	.20	BDL	BDL
09/14/82	BDL	.80	------	.10	BDL	BDL
/21/82	BDL	.90	------	.10	BDL	BDL
09/27/82	BDL	1.60	------	.10	BDL	BDL
10/04/82	BDL	1.10	------	.20	BDL	BDL
10/12/82	BDL	.70	------	.10	BDL	BDL
10/18/82	BDL	.30	------	.20	BDL	BDL
10/25/82	BDL	.30	------	.10	BDL	BDL
11/01/82	BDL	.70	------	.10	BDL	BDL
11/08/82	BDL	.20	------	.10	BDL	BDL
11/15/82	BDL	BDL	------	.10	BDL	BDL
11/22/82	BDL	BDL	------	.10	BDL	BDL
11/29/82	BDL	.40	------	.10	BDL	BDL
12/06/82	BDL	BDL	------	.10	BDL	BDL
12/13/82	BDL	.30	------	.20	BDL	BDL
12/20/82	BDL	BDL	------	.10	BDL	BDL
12/27/82	BDL	BDL	------	.10	BDL	BDL
01/03/83	BDL	BDL	------	.30	BDL	BDL
01/10/83	BDL	BDL	------	.20	BDL	BDL
01/17/83	BDL	BDL	------	.10	BDL	BDL

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
01/24/83	BDL	BDL	------	.20	BDL	BDL
01/31/83	BDL	BDL	------	.20	BDL	BDL
02/08/83	BDL	BDL	------	.10	BDL	BDL
02/15/83	BDL	.10	------	.40	BDL	------
02/22/83	BDL	.20	------	.30	BDL	------
02/28/83	BDL	.10	------	.60	BDL	------
03/07/83	BDL	.20	------	1.10	BDL	------
03/14/83	BDL	.10	------	.80	BDL	------
03/21/83	BDL	BDL	------	.50	BDL	------
03/28/83	BDL	BDL	.30	.80	BDL	------
/04/83	BDL	BDL	.30	.40	BDL	------
/11/83	BDL	BDL	.20	.40	BDL	------
04/18/83	BDL	BDL	.20	.40	BDL	------
04/26/83	BDL	BDL	.10	.40	BDL	------
05/02/83	BDL	.20	.10	.50	BDL	------
05/09/83	BDL	BDL	.10	.20	BDL	------
05/16/83	BDL	.20	.20	.20	BDL	------
05/23/83	BDL	.30	.10	.20	BDL	------
05/31/83	BDL	BDL	.10	.30	BDL	------
06/06/83	BDL	BDL	.10	.40	BDL	------
06/13/83	BDL	BDL	.20	.40	BDL	------
06/20/83	BDL	1.20	.20	.40	BDL	------
06/29/83	BDL	.50	.30	.30	BDL	------
AVERAGE	.10	.33	.18	.26	.10	1.00
MINIMUM	.10	.10	.10	.10	.10	1.00
MAXIMUM	.10	1.60	.30	1.10	.10	1.00
STD DEV	.00	.34	.08	.21	.00	
COEFF OF VAR	.00	1.04	.45	.80	.00	
# OF SAMPLES	52	52	14	52	52	32

% >
# >

% <
# <

8/23/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
07/12/82	BDL	BDL	------	.10	BDL	BDL
08/23/82	BDL	BDL	------	.10	BDL	BDL
09/03/82	BDL	BDL	------	.10	BDL	BDL
10/26/82	BDL	BDL	------	.10	BDL	BDL
11/22/82	BDL	BDL	------	.10	BDL	BDL
12/20/82	BDL	BDL	------	.10	BDL	BDL
01/17/83	BDL	BDL	------	.10	BDL	BDL
02/28/83	BDL	BDL	------	1.00	BDL	------
03/07/83	BDL	BDL	.40	.40	BDL	------
03/14/83	BDL	BDL	.40	.60	BDL	------
03/21/83	BDL	BDL	.30	.40	BDL	------
03/28/83	BDL	BDL	.90	.80	BDL	------
04/04/83	BDL	BDL	.50	.20	BDL	------
04/12/83	BDL	BDL	.40	.30	BDL	------
04/18/83	BDL	BDL	.80	.70	BDL	------
04/25/83	BDL	BDL	.20	.30	BDL	------
05/02/83	BDL	BDL	.20	.40	BDL	------
05/10/83	BDL	BDL	.20	.20	BDL	------
05/16/83	BDL	BDL	.20	.20	BDL	------
05/23/83	BDL	BDL	.20	.40	BDL	------
05/31/83	BDL	BDL	.10	.30	BDL	------
06/07/83	BDL	BDL	.10	.40	BDL	------
06/13/83	BDL	BDL	.10	.30	BDL	------
AVERAGE	.10	.10	.33	.33	.10	1.00
MINIMUM	.10	.10	.10	.10	.10	1.00
MAXIMUM	.10	.10	.90	1.00	.10	1.00
STD DEV	.00	.00	.24	.25	.00	
COEFF OF VAR	.00	.00	.73	.74	.00	
# OF SAMPLES	23	23	15	23	23	7

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8/23/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
07/06/82	BDL	BDL	------	.10	BDL	BDL
07/12/82	BDL	.30	------	.20	BDL	BDL
07/19/82	BDL	.60	------	.20	BDL	BDL
07/26/82	BDL	.30	------	.20	BDL	BDL
08/04/82	BDL	.20	------	.20	BDL	BDL
08/12/82	BDL	.50	------	.40	BDL	BDL
08/16/82	BDL	.40	------	.30	BDL	BDL
08/23/82	BDL	.40	------	.10	BDL	BDL
09/01/82	BDL	.40	------	.20	BDL	BDL
09/03/82	BDL	.50	------	.10	BDL	BDL
09/07/82	BDL	.40	------	.20	BDL	BDL
09/20/82	BDL	1.20	------	.10	BDL	BDL
09/27/82	BDL	.40	------	.20	BDL	BDL
10/05/82	BDL	.60	------	.10	BDL	BDL
0/13/82	BDL	.40	------	.10	BDL	BDL
J/18/82	BDL	.30	------	.10	BDL	BDL
10/25/82	BDL	BDL	------	.20	BDL	BDL
11/01/82	BDL	.50	------	.10	BDL	BDL
11/08/82	BDL	.20	------	.10	BDL	BDL
11/15/82	BDL	BDL	------	.10	BDL	BDL
11/22/82	BDL	BDL	------	.20	BDL	BDL
11/29/82	BDL	.30	------	.10	BDL	BDL
12/06/82	BDL	BDL	------	.10	BDL	BDL
12/13/82	BDL	BDL	------	.20	BDL	BDL
12/20/82	BDL	BDL	------	.20	BDL	BDL
12/27/82	BDL	BDL	------	.10	BDL	BDL
01/03/83	BDL	BDL	------	.40	BDL	BDL
01/10/83	BDL	BDL	------	.20	BDL	BDL
01/17/83	BDL	BDL	------	.20	BDL	BDL

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
01/24/83	BDL	BDL	------	.20	BDL	BDL
02/03/83	BDL	BDL	------	.10	BDL	BDL
02/07/83	BDL	BDL	------	.20	BDL	BDL
02/15/83	BDL	.10	------	.60	BDL	------
02/23/83	BDL	.10	------	.40	BDL	------
02/28/83	BDL	.10	------	.80	BDL	------
03/10/83	BDL	.10	------	1.00	BDL	------
03/15/83	BDL	.10	------	.80	BDL	------
03/21/83	BDL	BDL	------	.80	BDL	------
03/28/83	BDL	BDL	.60	.60	BDL	------
04/04/83	BDL	BDL	.70	.40	BDL	------
04/11/83	BDL	BDL	1.20	.50	BDL	------
04/18/83	BDL	BDL	.20	.30	BDL	------
04/25/83	BDL	BDL	.40	.50	BDL	------
05/02/83	BDL	.10	.50	.50	BDL	------
05/09/83	BDL	BDL	.20	.40	BDL	------
05/16/83	BDL	.60	.20	BDL	BDL	------
05/23/83	BDL	.40	.20	.30	BDL	------
05/31/83	BDL	BDL	.20	.20	BDL	------
06/06/83	BDL	BDL	.20	.30	BDL	------
06/13/83	BDL	BDL	.20	.40	BDL	------
06/20/83	BDL	1.20	.20	.40	BDL	------
06/27/83	BDL	.10	.10	.20	BDL	------
AVERAGE	.10	.25	.36	.29	.10	1.00
MINIMUM	.10	.10	.10	.05	.10	1.00
MAXIMUM	.10	1.20	1.20	1.00	.10	1.00
STD DEV	.00	.25	.30	.22	.00	
COEFF OF VAR	.00	.99	.82	.75	.00	
# OF SAMPLES	52	52	14	52	52	32

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
07/18/83	BDL	BDL	.10	.40	BDL	------
08/02/83	BDL	BDL	.20	.20	BDL	------
09/13/83	BDL	BDL	BDL	.50	BDL	------
10/04/83	BDL	BDL	BDL	.20	BDL	------
11/01/83	BDL	BDL	.20	BDL	BDL	BDL
12/08/83	BDL	BDL	BDL	BDL	BDL	------
01/04/84	BDL	BDL	.60	.10	BDL	BDL
02/08/84	BDL	BDL	.10	BDL	BDL	BDL
03/07/84	BDL	BDL	.20	BDL	BDL	BDL
04/18/84	BDL	BDL	.20	BDL	BDL	BDL
04/25/84	BDL	BDL	.20	.10	BDL	BDL
05/02/84	BDL	BDL	.10	BDL	BDL	BDL
05/09/84	BDL	BDL	.20	BDL	BDL	BDL
05/16/84	BDL	BDL	.10	BDL	BDL	BDL
05/23/84	BDL	BDL	.10	BDL	BDL	BDL
05/30/84	BDL	BDL	.60	BDL	BDL	BDL
06/06/84	BDL	BDL	.10	BDL	BDL	BDL
06/13/84	BDL	BDL	BDL	BDL	BDL	BDL
06/20/84	BDL	BDL	BDL	.20	BDL	BDL
06/27/84	BDL	BDL	BDL	BDL	BDL	------
AVERAGE	.10	.10	.17	.12	.10	1.00
MINIMUM	.10	.10	.05	.05	.10	1.00
MAXIMUM	.10	.10	.60	.50	.10	1.00
STD DEV	.00	.00	.16	.13	.00	
COEFF OF VAR	.00	.00	.97	1.08	.00	
# OF SAMPLES	20	20	20	20	20	14

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
07/03/84	BDL	BDL	BDL	BDL	BDL	BDL
07/11/84	BDL	BDL	BDL	BDL	BDL	BDL
07/18/84	BDL	BDL	BDL	BDL	BDL	------
07/25/84	BDL	BDL	.10	BDL	BDL	BDL
08/01/84	BDL	BDL	.20	BDL	BDL	BDL
08/08/84	BDL	BDL	BDL	BDL	BDL	------
08/15/84	BDL	BDL	BDL	BDL	BDL	BDL
08/22/84	BDL	BDL	BDL	.40	------	------
08/29/84	BDL	BDL	BDL	.40	BDL	------
09/05/84	BDL	BDL	.20	.20	BDL	------
09/12/84	BDL	BDL	BDL	BDL	BDL	------
09/19/84	BDL	BDL	BDL	BDL	BDL	------
09/26/84	BDL	BDL	BDL	BDL	BDL	------
10/10/84	BDL	BDL	.30	BDL	BDL	------
10/17/84	BDL	BDL	.20	BDL	BDL	------
10/24/84	BDL	BDL	BDL	BDL	BDL	------
0/31/84	BDL	BDL	BDL	BDL	BDL	------
11/08/84	BDL	BDL	BDL	BDL	BDL	------
11/14/84	BDL	BDL	BDL	BDL	BDL	------
11/21/84	BDL	BDL	BDL	BDL	BDL	------
11/28/84	BDL	BDL	BDL	BDL	BDL	------
12/07/84	BDL	BDL	BDL	BDL	BDL	------
12/12/84	BDL	BDL	BDL	BDL	BDL	------
12/19/84	BDL	BDL	.20	BDL	BDL	------
12/27/84	BDL	BDL	.10	BDL	BDL	------
01/02/85	BDL	BDL	.10	BDL	BDL	------
01/09/85	BDL	BDL	BDL	BDL	------	------
01/16/85	BDL	BDL	BDL	BDL	------	------
01/23/85	BDL	BDL	.20	BDL	BDL	------

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
01/31/85	BDL	BDL	.20	BDL	------	------
02/06/85	BDL	BDL	.40	.10	BDL	------
02/13/85	BDL	BDL	2.20	.30	BDL	------
02/20/85	BDL	BDL	.20	BDL	BDL	------
02/27/85	BDL	BDL	.20	BDL	BDL	------
03/06/85	BDL	BDL	.20	BDL	BDL	BDL
03/13/85	BDL	BDL	.10	BDL	BDL	BDL
03/20/85	BDL	BDL	.20	BDL	BDL	BDL
03/27/85	BDL	BDL	BDL	BDL	BDL	BDL
04/03/85	BDL	BDL	.30	BDL	BDL	BDL
04/10/85	BDL	BDL	.30	BDL	BDL	BDL
04/17/85	BDL	BDL	.50	BDL	BDL	BDL
04/24/85	BDL	BDL	.40	.20	BDL	BDL
05/01/85	BDL	BDL	.30	BDL	BDL	BDL
05/08/85	BDL	BDL	.20	BDL	BDL	BDL
/15/85	BDL	BDL	.50	BDL	BDL	BDL
/22/85	BDL	BDL	.10	BDL	BDL	BDL
05/29/85	BDL	BDL	.10	BDL	BDL	BDL
06/12/85	BDL	BDL	BDL	BDL	BDL	BDL
06/19/85	BDL	BDL	BDL	BDL	BDL	BDL
06/26/85	BDL	BDL	BDL	BDL	BDL	BDL
AVERAGE	.10	.10	.18	.08	.10	1.00
MINIMUM	.10	.10	.05	.05	.10	1.00
MAXIMUM	.10	.10	2.20	.40	.10	1.00
STD DEV	.00	.00	.32	.08		
COEFF OF VAR	.00	.00	1.72	1.07		
# OF SAMPLES	50	50	50	50	46	21

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
07/05/83	BDL	BDL	.20	.20	BDL	------
07/11/83	BDL	.40	.10	.20	BDL	------
07/18/83	BDL	.90	.30	.30	BDL	------
07/26/83	BDL	.80	.30	.20	BDL	------
08/02/83	BDL	1.10	.10	.20	BDL	------
08/08/83	BDL	.70	BDL	.20	BDL	------
08/18/83	BDL	.60	.10	.20	BDL	------
08/24/83	BDL	1.30	BDL	.20	BDL	------
08/31/83	BDL	1.50	.10	.40	BDL	------
09/07/83	BDL	3.00	BDL	.30	BDL	------
09/14/83	BDL	1.70	.10	.30	BDL	------
09/20/83	BDL	1.20	.20	.40	BDL	------
[illegible]/27/83	BDL	1.20	BDL	.30	BDL	------
[illegible]04/83	BDL	1.20	.10	.40	BDL	------
10/12/83	BDL	1.90	.20	.40	BDL	------
10/18/83	BDL	.80	.10	.30	BDL	------
10/25/83	BDL	1.30	BDL	BDL	BDL	BDL
11/01/83	BDL	.60	BDL	BDL	BDL	BDL
11/09/83	BDL	1.20	.10	BDL	.30	------
11/15/83	BDL	.30	BDL	BDL	BDL	------
11/22/83	BDL	BDL	BDL	BDL	BDL	BDL
11/30/83	BDL	BDL	BDL	BDL	BDL	------
12/07/83	BDL	BDL	.20	.10	BDL	BDL
12/14/83	BDL	BDL	.30	.10	BDL	BDL
12/21/83	BDL	BDL	BDL	BDL	BDL	------
12/28/83	BDL	BDL	BDL	BDL	BDL	------
01/04/84	BDL	BDL	.60	.20	BDL	BDL
01/12/84	BDL	BDL	.60	.20	BDL	BDL
01/18/84	BDL	.20	.60	.20	BDL	BDL

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
01/25/84	BDL	.10	.70	.20	BDL	BDL
02/01/84	BDL	BDL	.70	.20	------	BDL
02/08/84	BDL	BDL	.50	.10	BDL	BDL
02/15/84	BDL	BDL	.40	BDL	BDL	BDL
02/23/84	BDL	BDL	.20	BDL	BDL	BDL
02/29/84	BDL	BDL	.30	BDL	BDL	BDL
03/07/84	BDL	BDL	.40	.10	BDL	BDL
03/14/84	BDL	BDL	.30	BDL	BDL	BDL
03/21/84	BDL	BDL	.40	BDL	BDL	BDL
03/28/84	BDL	BDL	.30	.30	BDL	BDL
04/18/84	BDL	BDL	.30	BDL	BDL	BDL
04/25/84	BDL	BDL	.30	BDL	BDL	BDL
05/02/84	BDL	BDL	.20	BDL	BDL	BDL
05/10/84	BDL	BDL	.40	BDL	BDL	BDL
05/16/84	BDL	BDL	.20	BDL	BDL	BDL
05/23/84	BDL	BDL	.20	BDL	BDL	BDL
05/30/84	BDL	BDL	.10	BDL	BDL	BDL
06/06/84	BDL	BDL	.30	BDL	BDL	BDL
06/13/84	BDL	.50	.20	BDL	BDL	BDL
06/20/84	BDL	.20	.20	BDL	BDL	BDL
06/27/84	BDL	BDL	.40	BDL	BDL	------
AVERAGE	.10	.51	.24	.15	.10	1.00
MINIMUM	.10	.10	.05	.05	.10	1.00
MAXIMUM	.10	3.00	.70	.40	.30	1.00
STD DEV	.00	.63	.18	.12	.03	
COEFF OF VAR	.00	1.24	.77	.79	.27	
# OF SAMPLES	50	50	50	50	49	28

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
07/05/84	BDL	BDL	BDL	BDL	BDL	BDL
07/12/84	BDL	BDL	BDL	BDL	BDL	------
07/18/84	BDL	BDL	BDL	BDL	BDL	------
07/25/84	BDL	BDL	.10	BDL	BDL	BDL
08/01/84	BDL	BDL	.20	BDL	BDL	BDL
08/08/84	BDL	BDL	BDL	BDL	BDL	------
08/15/84	BDL	BDL	.20	BDL	BDL	BDL
08/22/84	BDL	BDL	.20	.20	BDL	BDL
08/29/84	BDL	.20	.30	BDL	BDL	BDL
09/05/84	BDL	.20	.10	BDL	BDL	BDL
09/12/84	BDL	.30	.10	BDL	BDL	BDL
09/19/84	BDL	1.70	BDL	BDL	BDL	------
09/26/84	BDL	2.00	BDL	BDL	BDL	------
10/03/84	BDL	1.10	BDL	BDL	BDL	------
10/10/84	BDL	.40	.60	BDL	BDL	------
10/17/84	BDL	1.30	.20	BDL	BDL	------
10/24/84	BDL	1.50	BDL	BDL	BDL	------
10/31/84	------	.20	BDL	.10	BDL	------
11/07/84	BDL	BDL	BDL	BDL	BDL	------
11/14/84	BDL	BDL	BDL	BDL	BDL	------
11/21/84	BDL	BDL	.10	BDL	BDL	------
11/28/84	BDL	BDL	.20	BDL	BDL	------
12/06/84	BDL	BDL	BDL	BDL	BDL	------
12/12/84	BDL	BDL	BDL	BDL	BDL	------
12/19/84	BDL	.10	.20	BDL	BDL	------
12/26/84	BDL	BDL	.10	BDL	BDL	------
01/02/85	BDL	BDL	.20	BDL	BDL	------
01/09/85	BDL	BDL	.10	BDL	------	------
01/16/85	BDL	BDL	.10	BDL	------	------

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
01/24/85	BDL	BDL	.30	.10	------	------
01/30/85	BDL	BDL	.50	.10	------	------
02/06/85	BDL	.20	.30	BDL	BDL	------
02/13/85	BDL	.20	.60	.10	BDL	------
02/21/85	BDL	BDL	.20	BDL	BDL	------
02/27/85	BDL	BDL	.40	BDL	BDL	------
03/06/85	BDL	BDL	.20	BDL	BDL	------
03/13/85	BDL	.10	.20	BDL	BDL	BDL
03/20/85	BDL	BDL	.30	BDL	BDL	BDL
03/27/85	BDL	BDL	.40	BDL	BDL	BDL
04/03/85	BDL	.20	.60	.10	BDL	BDL
04/10/85	BDL	1.10	.50	BDL	BDL	BDL
04/17/85	BDL	.40	.80	BDL	BDL	BDL
04/24/85	BDL	.90	.50	.20	BDL	BDL
05/01/85	BDL	BDL	.20	BDL	BDL	BDL
05/08/85	BDL	BDL	.10	BDL	BDL	BDL
/15/85	BDL	BDL	.60	BDL	BDL	BDL
05/22/85	BDL	BDL	BDL	BDL	BDL	BDL
05/29/85	BDL	.40	.20	BDL	BDL	BDL
06/05/85	BDL	1.70	.20	BDL	BDL	BDL
06/12/85	BDL	1.40	BDL	BDL	BDL	BDL
06/19/85	BDL	.90	BDL	BDL	BDL	BDL
06/26/85	BDL	.70	BDL	BDL	BDL	BDL
AVERAGE	.10	.39	.21	.06	.10	1.00
MINIMUM	.10	.10	.05	.05	.10	1.00
MAXIMUM	.10	2.00	.80	.20	.10	1.00
STD DEV	.00	.52	.19	.03	.00	
COEFF OF VAR	.00	1.33	.90	.53	.00	
# OF SAMPLES	51	52	52	52	48	25

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
07/19/83	BDL	BDL	.30	.40	BDL	------
08/02/83	BDL	BDL	.20	.20	BDL	------
09/13/83	BDL	BDL	BDL	.30	BDL	------
10/04/83	BDL	BDL	.10	.30	BDL	------
11/02/83	BDL	BDL	.20	BDL	BDL	BDL
12/08/83	BDL	BDL	BDL	BDL	BDL	------
01/04/84	BDL	BDL	.40	.10	BDL	BDL
02/08/84	BDL	BDL	.10	BDL	BDL	BDL
03/07/84	BDL	BDL	.10	BDL	BDL	BDL
04/10/84	BDL	BDL	BDL	BDL	BDL	BDL
04/25/84	BDL	BDL	.10	BDL	BDL	BDL
05/02/84	BDL	BDL	BDL	BDL	BDL	BDL
05/10/84	BDL	BDL	.10	BDL	BDL	BDL
05/16/84	BDL	BDL	BDL	BDL	BDL	BDL
05/23/84	BDL	BDL	BDL	BDL	BDL	BDL
05/30/84	BDL	BDL	.20	BDL	BDL	BDL
06/06/84	BDL	BDL	.20	BDL	BDL	BDL
06/13/84	BDL	BDL	.20	BDL	BDL	BDL
06/20/84	BDL	BDL	BDL	.20	BDL	BDL
06/27/84	BDL	BDL	BDL	BDL	BDL	------
AVERAGE	.10	.10	.13	.11	.10	1.00
MINIMUM	.10	.10	.05	.05	.10	1.00
MAXIMUM	.10	.10	.40	.40	.10	1.00
STD DEV	.00	.00	.10	.11	.00	
COEFF OF VAR	.00	.00	.75	.98	.00	
# OF SAMPLES	20	20	20	20	20	14

%)
#)

% (
# (

AR301033

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
07/03/84	BDL	BDL	BDL	BDL	BDL	BDL
07/11/84	BDL	BDL	BDL	BDL	BDL	BDL
07/18/84	BDL	BDL	BDL	BDL	BDL	-------
07/25/84	BDL	BDL	BDL	BDL	BDL	BDL
08/01/84	BDL	BDL	.20	BDL	BDL	BDL
08/08/84	BDL	BDL	BDL	BDL	BDL	-------
08/15/84	BDL	BDL	.10	.10	BDL	BDL
08/22/84	BDL	BDL	.20	.30	-------	-------
08/29/84	BDL	BDL	.20	.20	BDL	-------
09/05/84	BDL	BDL	.10	BDL	BDL	-------
09/12/84	BDL	BDL	.20	.10	BDL	-------
09/19/84	BDL	BDL	BDL	BDL	BDL	-------
09/26/84	BDL	BDL	BDL	BDL	BDL	-------
10/03/84	BDL	BDL	BDL	BDL	BDL	-------
10/10/84	BDL	BDL	.20	BDL	BDL	-------
10/17/84	BDL	BDL	.20	BDL	BDL	-------
10/24/84	BDL	BDL	BDL	BDL	BDL	-------
10/31/84	BDL	BDL	BDL	BDL	BDL	-------
11/07/84	BDL	BDL	BDL	BDL	BDL	-------
11/14/84	BDL	BDL	BDL	BDL	BDL	-------
11/21/84	BDL	BDL	BDL	BDL	BDL	-------
11/28/84	BDL	BDL	BDL	BDL	BDL	-------
12/06/84	BDL	BDL	BDL	BDL	BDL	-------
12/12/84	BDL	BDL	BDL	BDL	BDL	-------
12/19/84	BDL	BDL	.20	BDL	BDL	-------
12/28/84	BDL	BDL	.10	BDL	BDL	-------
01/02/85	BDL	BDL	.20	BDL	BDL	-------
01/09/85	BDL	BDL	BDL	BDL	-------	-------
01/16/85	BDL	BDL	BDL	BDL	-------	-------

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
01/23/85	BDL	BDL	.40	BDL	BDL	------
01/30/85	BDL	BDL	.90	.20	BDL	------
02/06/85	BDL	BDL	.40	BDL	BDL	------
02/13/85	BDL	BDL	1.10	.20	BDL	------
02/21/85	BDL	BDL	.20	BDL	BDL	------
02/28/85	BDL	BDL	.20	BDL	BDL	------
03/06/85	BDL	BDL	.20	BDL	BDL	BDL
03/13/85	BDL	BDL	BDL	BDL	BDL	BDL
03/20/85	BDL	BDL	.20	BDL	BDL	BDL
03/27/85	BDL	BDL	BDL	BDL	BDL	BDL
04/03/85	BDL	BDL	.40	BDL	BDL	BDL
04/10/85	BDL	BDL	.30	BDL	BDL	BDL
04/17/85	BDL	BDL	.50	BDL	BDL	BDL
04/24/85	BDL	BDL	.20	.10	BDL	BDL
05/01/85	BDL	BDL	.30	BDL	BDL	BDL
05/08/85	BDL	BDL	.30	BDL	BDL	BDL
05/15/85	BDL	BDL	.40	BDL	BDL	BDL
05/22/85	BDL	BDL	.20	BDL	BDL	BDL
05/29/85	BDL	BDL	.10	BDL	BDL	BDL
06/05/85	BDL	BDL	BDL	BDL	BDL	BDL
06/12/85	BDL	BDL	BDL	BDL	BDL	BDL
06/19/85	BDL	BDL	BDL	BDL	BDL	BDL
06/26/85	BDL	BDL	BDL	BDL	BDL	BDL
AVERAGE	.10	.10	.18	.07	.10	1.00
MINIMUM	.10	.10	.05	.05	.10	1.00
MAXIMUM	.10	.10	1.10	.30	.10	1.00
STD DEV	.00	.00	.20	.05	.00	
COEFF OF VAR	.00	.00	1.13	.74	.00	
# OF SAMPLES	52	52	52	52	49	22

% >
# >

% <
# <

AR301035

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	2CLOREthyl VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
07/07/83	BDL	BDL	.10	.20	BDL	------
07/11/83	BDL	.40	.10	.10	BDL	------
07/19/83	BDL	.80	.30	.20	BDL	------
07/25/83	BDL	.50	.30	.20	BDL	------
08/02/83	BDL	.90	.30	.20	BDL	------
08/08/83	BDL	.70	BDL	.20	BDL	------
08/17/83	BDL	.60	BDL	.30	BDL	------
08/24/83	BDL	.80	.10	.30	BDL	------
08/31/83	BDL	1.90	BDL	.40	BDL	------
09/07/83	BDL	2.60	BDL	.20	BDL	------
09/14/83	BDL	2.40	BDL	.30	BDL	------
09/20/83	BDL	1.10	BDL	.30	BDL	------
09/27/83	BDL	.60	BDL	.30	BDL	------
10/04/83	BDL	1.10	BDL	.30	BDL	------
10/12/83	BDL	1.60	BDL	.40	BDL	------
10/18/83	BDL	.30	BDL	BDL	BDL	------
10/25/83	BDL	.80	BDL	BDL	BDL	BDL
11/01/83	BDL	.10	BDL	BDL	BDL	BDL
11/09/83	BDL	.30	BDL	.10	BDL	------
11/15/83	BDL	BDL	BDL	BDL	BDL	BDL
11/22/83	BDL	BDL	BDL	BDL	BDL	BDL
11/30/83	BDL	BDL	BDL	BDL	BDL	------
12/07/83	BDL	BDL	BDL	BDL	BDL	------
12/14/83	BDL	BDL	BDL	BDL	BDL	BDL
12/21/83	BDL	BDL	BDL	BDL	BDL	------
12/28/83	BDL	BDL	BDL	BDL	BDL	------
01/04/84	BDL	BDL	.40	.20	BDL	BDL
01/12/84	BDL	BDL	.30	BDL	BDL	BDL
01/18/84	BDL	.20	.40	.20	BDL	BDL

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
01/25/84	BDL	.10	.50	.10	BDL	BDL
02/01/84	BDL	BDL	.40	.20	--------	BDL
02/08/84	BDL	BDL	.20	BDL	BDL	BDL
02/15/84	BDL	BDL	.20	BDL	BDL	BDL
02/23/84	BDL	BDL	.10	BDL	BDL	BDL
02/29/84	BDL	BDL	BDL	BDL	BDL	BDL
03/07/84	BDL	BDL	BDL	BDL	BDL	BDL
03/14/84	BDL	BDL	.10	BDL	BDL	BDL
03/21/84	BDL	BDL	.10	BDL	BDL	BDL
03/28/84	BDL	BDL	.10	BDL	BDL	BDL
04/18/84	BDL	BDL	BDL	BDL	BDL	BDL
04/25/84	BDL	BDL	.10	BDL	BDL	BDL
05/02/84	BDL	BDL	.10	BDL	BDL	BDL
05/10/84	BDL	BDL	.20	BDL	BDL	BDL
05/16/84	BDL	BDL	.10	BDL	BDL	BDL
05/23/84	BDL	.30	.10	BDL	BDL	BDL
05/30/84	BDL	BDL	BDL	BDL	BDL	BDL
06/06/84	BDL	BDL	.10	BDL	BDL	BDL
06/13/84	BDL	.20	.20	BDL	BDL	BDL
06/20/84	BDL	.10	.20	BDL	BDL	BDL
06/27/84	BDL	BDL	.10	BDL	BDL	--------
AVERAGE	.10	.42	.13	.12	.10	1.00
MINIMUM	.10	.10	.05	.05	.10	1.00
MAXIMUM	.10	2.60	.50	.40	.10	1.00
STD DEV	.00	.59	.12	.11	.00	
COEFF OF VAR	.00	1.40	.91	.86	.00	
# OF SAMPLES	50	50	50	50	49	20

% >
# >

% <
# <

9/19/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	2CLOROETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
07/05/84	BDL	BDL	BDL	BDL	BDL	BDL
07/12/84	BDL	BDL	BDL	BDL	BDL	—
07/18/84	BDL	BDL	BDL	BDL	BDL	—
07/25/84	BDL	BDL	BDL	BDL	BDL	BDL
08/01/84	BDL	BDL	.10	BDL	BDL	BDL
08/08/84	BDL	BDL	BDL	BDL	BDL	—
08/15/84	BDL	.10	.10	BDL	BDL	BDL
08/22/84	BDL	BDL	BDL	.10	BDL	—
08/29/84	BDL	.20	.30	BDL	BDL	BDL
09/05/84	BDL	BDL	.10	.10	BDL	—
09/12/84	BDL	.30	.10	BDL	BDL	BDL
09/19/84	BDL	1.10	BDL	BDL	BDL	—
09/26/84	BDL	1.30	BDL	BDL	BDL	—
10/03/84	BDL	BDL	BDL	BDL	BDL	—
10/10/84	BDL	.20	.60	BDL	BDL	—
10/17/84	BDL	1.30	.20	BDL	BDL	—
10/24/84	BDL	.80	BDL	BDL	BDL	—
10/31/84	—	.10	BDL	BDL	BDL	—
11/07/84	BDL	BDL	BDL	BDL	BDL	—
11/14/84	BDL	BDL	BDL	BDL	BDL	—
11/21/84	BDL	BDL	.10	BDL	BDL	—
11/28/84	BDL	BDL	.10	BDL	BDL	—
12/06/84	BDL	BDL	BDL	BDL	BDL	—
12/12/84	BDL	.10	BDL	BDL	BDL	—
12/19/84	BDL	.20	.10	BDL	BDL	—
12/26/84	BDL	BDL	.10	BDL	BDL	—
01/02/85	BDL	BDL	.10	BDL	BDL	—
01/09/85	BDL	BDL	BDL	BDL	BDL	—
01/16/85	BDL	BDL	BDL	BDL	—	—

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

OL HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	2CLOKETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
01/24/85	BDL	BDL	.30	BDL	-------	-------
01/30/85	BDL	BDL	.40	.10	BDL	-------
02/06/85	BDL	BDL	.30	BDL	BDL	-------
02/13/85	BDL	BDL	.50	BDL	BDL	-------
02/21/85	BDL	BDL	.10	BDL	BDL	-------
02/27/85	BDL	BDL	.30	BDL	BDL	-------
03/06/85	BDL	BDL	.20	BDL	BDL	BDL
03/13/85	BDL	.20	.20	BDL	BDL	BDL
03/20/85	BDL	BDL	.20	BDL	BDL	BDL
03/27/85	BDL	BDL	.30	BDL	BDL	BDL
04/03/85	BDL	.20	.40	.20	BDL	BDL
04/10/85	BDL	.90	.30	BDL	BDL	BDL
04/17/85	BDL	.20	.40	BDL	BDL	BDL
04/24/85	BDL	.60	.40	.20	BDL	BDL
05/01/85	BDL	BDL	.20	BDL	BDL	BDL
05/08/85	BDL	BDL	BDL	BDL	BDL	BDL
05/15/85	BDL	BDL	.40	BDL	BDL	BDL
05/22/85	BDL	BDL	BDL	BDL	BDL	BDL
05/29/85	BDL	.80	.20	BDL	BDL	BDL
06/05/85	BDL	1.30	.20	BDL	BDL	BDL
06/12/85	BDL	1.20	BDL	BDL	BDL	BDL
06/19/85	BDL	.30	BDL	BDL	BDL	BDL
06/26/85	BDL	.50	BDL	BDL	BDL	BDL
AVERAGE	.10	.29	.16	.06	.10	1.00
MINIMUM	.10	.10	.05	.05	.10	1.00
MAXIMUM	.10	1.30	.60	.20	.10	1.00
STD DEV	.00	.37	.14	.03	.00	
COEFF OF VAR	.00	1.27	.88	.53	.00	
# OF SAMPLES	51	52	52	52	49	23

% >
# >

% <
# <

12/19/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
07/06/82	BDL	.20	------	.10	BDL	BDL
07/12/82	BDL	.40	------	.10	BDL	BDL
07/19/82	BDL	.60	------	.10	BDL	BDL
07/26/82	BDL	1.00	------	.10	BDL	BDL
08/04/82	BDL	.20	------	.20	BDL	BDL
08/10/82	BDL	.40	------	.30	BDL	BDL
08/16/82	BDL	.40	------	.40	BDL	BDL
08/23/82	BDL	.70	------	.10	BDL	BDL
09/01/82	BDL	.20	------	.10	BDL	BDL
09/08/82	BDL	.40	------	.20	BDL	BDL
09/14/82	BDL	.80	------	.10	BDL	BDL
/21/82	BDL	.90	------	.10	BDL	BDL
09/27/82	BDL	1.60	------	.10	BDL	BDL
10/04/82	BDL	1.10	------	.20	BDL	BDL
10/12/82	BDL	.70	------	.10	BDL	BDL
10/18/82	BDL	.30	------	.20	BDL	BDL
10/25/82	BDL	.30	------	.10	BDL	BDL
11/01/82	BDL	.70	------	.10	BDL	BDL
11/08/82	BDL	.20	------	.10	BDL	BDL
11/15/82	BDL	BDL	------	.10	BDL	BDL
11/22/82	BDL	BDL	------	.10	BDL	BDL
11/29/82	BDL	.40	------	.10	BDL	BDL
12/06/82	BDL	BDL	------	.10	BDL	BDL
12/13/82	BDL	.30	------	.20	BDL	BDL
12/20/82	BDL	BDL	------	.10	BDL	BDL
12/27/82	BDL	BDL	------	.10	BDL	BDL
01/03/83	BDL	BDL	------	.30	BDL	BDL
01/10/83	BDL	BDL	------	.20	BDL	BDL
01/17/83	BDL	BDL	------	.10	BDL	BDL

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
01/24/83	BDL	BDL	------	.20	BDL	BDL
01/31/83	BDL	BDL	------	.20	BDL	BDL
02/08/83	BDL	BDL	------	.10	BDL	BDL
02/15/83	BDL	.10	------	.40	BDL	------
02/22/83	BDL	.20	------	.30	BDL	------
02/28/83	BDL	.10	------	.60	BDL	------
03/07/83	BDL	.20	------	1.10	BDL	------
03/14/83	BDL	.10	------	.80	BDL	------
03/21/83	BDL	BDL	------	.50	BDL	------
03/28/83	BDL	BDL	.30	.80	BDL	------
/04/83	BDL	BDL	.30	.40	BDL	------
/11/83	BDL	BDL	.20	.40	BDL	------
04/18/83	BDL	BDL	.20	.40	BDL	------
04/26/83	BDL	BDL	.10	.40	BDL	------
05/02/83	BDL	.20	.10	.50	BDL	------
05/09/83	BDL	BDL	.10	.20	BDL	------
05/16/83	BDL	.20	.20	.20	BDL	------
05/23/83	BDL	.30	.10	.20	BDL	------
05/31/83	BDL	BDL	.10	.30	BDL	------
06/06/83	BDL	BDL	.10	.40	BDL	------
06/13/83	BDL	BDL	.20	.40	BDL	------
06/20/83	BDL	1.20	.20	.30	BDL	------
06/29/83	BDL	.50				
AVERAGE	.10	.33	.18	.26	.10	1.00
MINIMUM	.10	.10	.10	.10	.10	1.00
MAXIMUM	.10	1.60	.30	1.10	.10	1.00
STD DEV	.00	.34	.08	.21	.00	
COEFF OF VAR	.00	1.04	.45	.80	.00	
# OF SAMPLES	52	52	14	52	52	32

% >
# >

% <
# <

8/23/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
07/12/82	BDL	BDL	------	.10	BDL	BDL
08/23/82	BDL	BDL	------	.10	BDL	BDL
09/03/82	BDL	BDL	------	.10	BDL	BDL
10/26/82	BDL	BDL	------	.10	BDL	BDL
11/22/82	BDL	BDL	------	.10	BDL	BDL
12/20/82	BDL	BDL	------	.10	BDL	BDL
01/17/83	BDL	BDL	------	.10	BDL	BDL
02/28/83	BDL	BDL	------	1.00	BDL	------
03/07/83	BDL	BDL	.40	.40	BDL	------
03/14/83	BDL	BDL	.40	.60	BDL	------
03/21/83	BDL	BDL	.30	.40	BDL	------
03/28/83	BDL	BDL	.90	.80	BDL	------
04/04/83	BDL	BDL	.50	.20	BDL	------
04/12/83	BDL	BDL	.40	.30	BDL	------
04/18/83	BDL	BDL	.80	.70	BDL	------
04/25/83	BDL	BDL	.20	.30	BDL	------
05/02/83	BDL	BDL	.20	.40	BDL	------
05/10/83	BDL	BDL	.20	.20	BDL	------
05/16/83	BDL	BDL	.20	.20	BDL	------
05/23/83	BDL	BDL	.20	.40	BDL	------
05/31/83	BDL	BDL	.10	.30	BDL	------
06/07/83	BDL	BDL	.10	.40	BDL	------
06/13/83	BDL	BDL	.10	.30	BDL	------
AVERAGE	.10	.10	.33	.33	.10	1.00
MINIMUM	.10	.10	.10	.10	.10	1.00
MAXIMUM	.10	.10	.90	1.00	.10	1.00
STD DEV	.00	.00	.24	.25	.00	
COEFF OF VAR	.00	.00	.73	.74	.00	
# OF SAMPLES	23	23	15	23	23	7

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AR301042

8/23/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
07/06/82	BDL	BDL	------	.10	BDL	BDL
07/12/82	BDL	.30	------	.20	BDL	BDL
07/19/82	BDL	.60	------	.20	BDL	BDL
07/26/82	BDL	.30	------	.20	BDL	BDL
08/04/82	BDL	.20	------	.20	BDL	BDL
08/12/82	BDL	.50	------	.40	BDL	BDL
08/16/82	BDL	.40	------	.30	BDL	BDL
08/23/82	BDL	.40	------	.10	BDL	BDL
09/01/82	BDL	.40	------	.20	BDL	BDL
09/03/82	BDL	.50	------	.10	BDL	BDL
09/07/82	BDL	.40	------	.20	BDL	BDL
09/20/82	BDL	1.20	------	.10	BDL	BDL
09/27/82	BDL	.40	------	.20	BDL	BDL
10/05/82	BDL	.60	------	.10	BDL	BDL
/13/82	BDL	.40	------	.10	BDL	BDL
/18/82	BDL	.30	------	.10	BDL	BDL
10/25/82	BDL	BDL	------	.20	BDL	BDL
11/01/82	BDL	.50	------	.10	BDL	BDL
11/08/82	BDL	.20	------	.10	BDL	BDL
11/15/82	BDL	BDL	------	.10	BDL	BDL
11/22/82	BDL	BDL	------	.20	BDL	BDL
11/29/82	BDL	.30	------	.10	BDL	BDL
12/06/82	BDL	BDL	------	.10	BDL	BDL
12/13/82	BDL	BDL	------	.20	BDL	BDL
12/20/82	BDL	BDL	------	.20	BDL	BDL
12/27/82	BDL	BDL	------	.10	BDL	BDL
01/03/83	BDL	BDL	------	.40	BDL	BDL
01/10/83	BDL	BDL	------	.20	BDL	BDL
01/17/83	BDL	BDL	------	.20	BDL	BDL

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
01/24/83	BDL	BDL	------	.20	BDL	BDL
02/03/83	BDL	BDL	------	.10	BDL	BDL
02/07/83	BDL	BDL	------	.20	BDL	BDL
02/15/83	BDL	.10	------	.60	BDL	------
02/23/83	BDL	.10	------	.40	BDL	------
02/28/83	BDL	.10	------	.80	BDL	------
03/10/83	BDL	.10	------	1.00	BDL	------
03/15/83	BDL	.10	------	.80	BDL	------
03/21/83	BDL	BDL	------	.80	BDL	------
03/28/83	BDL	BDL	.60	.60	BDL	------
04/04/83	BDL	BDL	.70	.40	BDL	------
04/11/83	BDL	BDL	1.20	.50	BDL	------
04/18/83	BDL	BDL	.20	.30	BDL	------
04/25/83	BDL	BDL	.40	.50	BDL	------
05/02/83	BDL	.10	.50	.50	BDL	------
5/09/83	BDL	BDL	.20	.40	BDL	------
05/16/83	BDL	.60	.20	BDL	BDL	------
05/23/83	BDL	.40	.20	.30	BDL	------
05/31/83	BDL	BDL	.20	.20	BDL	------
06/06/83	BDL	BDL	.20	.30	BDL	------
06/13/83	BDL	BDL	.20	.40	BDL	------
06/20/83	BDL	1.20	.20	.40	BDL	------
06/27/83	BDL	.10	.10	.20	BDL	------
AVERAGE	.10	.25	.36	.29	.10	1.00
MINIMUM	.10	.10	.10	.05	.10	1.00
MAXIMUM	.10	1.20	1.20	1.00	.10	1.00
STD DEV	.00	.25	.30	.22	.00	
COEFF OF VAR	.00	.99	.82	.75	.00	
# OF SAMPLES	52	52	14	52	52	32

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AR301044

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
07/18/83	BDL	BDL	.10	.40	BDL	------
08/02/83	BDL	BDL	.20	.20	BDL	------
09/13/83	BDL	BDL	BDL	.50	BDL	------
10/04/83	BDL	BDL	BDL	.20	BDL	------
11/01/83	BDL	BDL	.20	BDL	BDL	BDL
12/08/83	BDL	BDL	BDL	BDL	BDL	------
01/04/84	BDL	BDL	.60	.10	BDL	BDL
02/08/84	BDL	BDL	.10	BDL	BDL	BDL
03/07/84	BDL	BDL	.20	BDL	BDL	BDL
04/18/84	BDL	BDL	.20	BDL	BDL	BDL
04/25/84	BDL	BDL	.20	.10	BDL	BDL
05/02/84	BDL	BDL	.10	BDL	BDL	BDL
5/09/84	BDL	BDL	.20	BDL	BDL	BDL
5/16/84	BDL	BDL	.10	BDL	BDL	BDL
05/23/84	BDL	BDL	.10	BDL	BDL	BDL
05/30/84	BDL	BDL	.60	BDL	BDL	BDL
6/06/84	BDL	BDL	.10	BDL	BDL	BDL
06/13/84	BDL	BDL	BDL	BDL	BDL	BDL
06/20/84	BDL	BDL	BDL	.20	BDL	BDL
06/27/84	BDL	BDL	BDL	BDL	BDL	------
AVERAGE	.10	.10	.17	.12	.10	1.00
MINIMUM	.10	.10	.05	.05	.10	1.00
MAXIMUM	.10	.10	.60	.50	.10	1.00
STD DEV	.00	.00	.16	.13	.00	
COEFF OF VAR	.00	.00	.97	1.08	.00	
# OF SAMPLES	20	20	20	20	20	14

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8/23/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

PAGE

BELMONT INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
07/03/84	BDL	BDL	BDL	BDL	BDL	BDL
07/11/84	BDL	BDL	BDL	BDL	BDL	BDL
07/18/84	BDL	BDL	BDL	BDL	BDL	------
07/25/84	BDL	BDL	.10	BDL	BDL	BDL
08/01/84	BDL	BDL	.20	BDL	BDL	BDL
08/08/84	BDL	BDL	BDL	BDL	BDL	------
08/15/84	BDL	BDL	BDL	BDL	BDL	BDL
08/22/84	BDL	BDL	BDL	.40	------	------
08/29/84	BDL	BDL	BDL	.40	BDL	------
09/05/84	BDL	BDL	.20	.20	BDL	------
09/12/84	BDL	BDL	BDL	BDL	BDL	------
09/19/84	BDL	BDL	BDL	BDL	BDL	------
09/26/84	BDL	BDL	BDL	BDL	BDL	------
10/10/84	BDL	BDL	.30	BDL	BDL	------
10/17/84	BDL	BDL	.20	BDL	BDL	------
10/24/84	BDL	BDL	BDL	BDL	BDL	------
0/31/84	BDL	BDL	BDL	BDL	BDL	------
1/08/84	BDL	BDL	BDL	BDL	BDL	------
1/14/84	BDL	BDL	BDL	BDL	BDL	------
1/21/84	BDL	BDL	BDL	BDL	BDL	------
11/28/84	BDL	BDL	BDL	BDL	BDL	------
12/07/84	BDL	BDL	BDL	BDL	BDL	------
12/12/84	BDL	BDL	BDL	BDL	BDL	------
12/19/84	BDL	BDL	.20	BDL	BDL	------
12/27/84	BDL	BDL	.10	BDL	BDL	------
01/02/85	BDL	BDL	.10	BDL	BDL	------
01/09/85	BDL	BDL	BDL	BDL	------	------
01/16/85	BDL	BDL	BDL	BDL	------	------
01/23/85	BDL	BDL	.20	BDL	BDL	------

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
01/31/85	BDL	BDL	.20	BDL	------	------
02/06/85	BDL	BDL	.40	.10	BDL	------
02/13/85	BDL	BDL	2.20	.30	BDL	------
02/20/85	BDL	BDL	.20	BDL	BDL	------
02/27/85	BDL	BDL	.20	BDL	BDL	------
03/06/85	BDL	BDL	.20	BDL	BDL	BDL
03/13/85	BDL	BDL	.10	BDL	BDL	BDL
03/20/85	BDL	BDL	.20	BDL	BDL	BDL
03/27/85	BDL	BDL	BDL	BDL	BDL	BDL
04/03/85	BDL	BDL	.30	BDL	BDL	BDL
04/10/85	BDL	BDL	.30	BDL	BDL	BDL
04/17/85	BDL	BDL	.50	BDL	BDL	BDL
04/24/85	BDL	BDL	.40	.20	BDL	BDL
05/01/85	BDL	BDL	.30	BDL	BDL	BDL
05/08/85	BDL	BDL	.20	BDL	BDL	BDL
5/15/85	BDL	BDL	.50	BDL	BDL	BDL
5/22/85	BDL	BDL	.10	BDL	BDL	BDL
05/29/85	BDL	BDL	.10	BDL	BDL	BDL
06/12/85	BDL	BDL	BDL	BDL	BDL	BDL
06/19/85	BDL	BDL	BDL	BDL	BDL	BDL
06/26/85	BDL	BDL	BDL	BDL	BDL	BDL
AVERAGE	.10	.10	.18	.08	.10	1.00
MINIMUM	.10	.10	.05	.05	.10	1.00
MAXIMUM	.10	.10	2.20	.40	.10	1.00
STD DEV	.00	.00	.32	.08		
COEFF OF VAR	.00	.00	1.72	1.07		
# OF SAMPLES	50	50	50	50	46	21

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
07/05/83	BDL	BDL	.20	.20	BDL	------
07/11/83	BDL	.40	.10	.20	BDL	------
07/18/83	BDL	.90	.30	.30	BDL	------
07/26/83	BDL	.80	.30	.20	BDL	------
08/02/83	BDL	1.10	.10	.20	BDL	------
08/08/83	BDL	.70	BDL	.20	BDL	------
08/18/83	BDL	.60	.10	.20	BDL	------
08/24/83	BDL	1.30	BDL	.20	BDL	------
08/31/83	BDL	1.50	.10	.40	BDL	------
09/07/83	BDL	3.00	BDL	.30	BDL	------
09/14/83	BDL	1.70	.10	.30	BDL	------
09/20/83	BDL	1.20	.20	.40	BDL	------
'27/83	BDL	1.20	BDL	.30	BDL	------
'04/83	BDL	1.20	.10	.40	BDL	------
10/12/83	BDL	1.90	.20	.40	BDL	------
10/18/83	BDL	.80	.10	.30	BDL	------
10/25/83	BDL	1.30	BDL	BDL	BDL	BDL
11/01/83	BDL	.60	BDL	BDL	BDL	BDL
11/09/83	BDL	1.20	.10	BDL	.30	------
11/15/83	BDL	.30	BDL	BDL	BDL	------
11/22/83	BDL	BDL	BDL	BDL	BDL	BDL
11/30/83	BDL	BDL	BDL	BDL	BDL	------
12/07/83	BDL	BDL	.20	.10	BDL	BDL
12/14/83	BDL	BDL	.30	.10	BDL	BDL
12/21/83	BDL	BDL	BDL	BDL	BDL	------
12/28/83	BDL	BDL	BDL	BDL	BDL	------
01/04/84	BDL	BDL	.60	.20	BDL	BDL
01/12/84	BDL	BDL	.60	.20	BDL	BDL
01/18/84	BDL	.20	.60	.20	BDL	BDL

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
01/25/84	BDL	.10	.70	.20	BDL	BDL
02/01/84	BDL	BDL	.70	.20	------	BDL
02/08/84	BDL	BDL	.50	.10	BDL	BDL
02/15/84	BDL	BDL	.40	BDL	BDL	BDL
02/23/84	BDL	BDL	.20	BDL	BDL	BDL
02/29/84	BDL	BDL	.30	BDL	BDL	BDL
03/07/84	BDL	BDL	.40	.10	BDL	BDL
03/14/84	BDL	BDL	.30	BDL	BDL	BDL
03/21/84	BDL	BDL	.40	BDL	BDL	BDL
03/28/84	BDL	BDL	.30	.30	BDL	BDL
04/18/84	BDL	BDL	.30	BDL	BDL	BDL
04/25/84	BDL	BDL	.30	BDL	BDL	BDL
05/02/84	BDL	BDL	.20	BDL	BDL	BDL
05/10/84	BDL	BDL	.40	BDL	BDL	BDL
05/16/84	BDL	BDL	.20	BDL	BDL	BDL
05/23/84	BDL	BDL	.20	BDL	BDL	BDL
05/30/84	BDL	BDL	.10	BDL	BDL	BDL
06/06/84	BDL	BDL	.30	BDL	BDL	BDL
06/13/84	BDL	.50	.20	BDL	BDL	BDL
06/20/84	BDL	.20	.20	BDL	BDL	BDL
06/27/84	BDL	BDL	.40	BDL	BDL	------
AVERAGE	.10	.51	.24	.15	.10	1.00
MINIMUM	.10	.10	.05	.05	.10	1.00
MAXIMUM	.10	3.00	.70	.40	.30	1.00
STD DEV	.00	.63	.18	.12	.03	
COEFF OF VAR	.00	1.24	.77	.79	.27	
# OF SAMPLES	50	50	50	50	49	28

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
07/05/84	BDL	BDL	BDL	BDL	BDL	BDL
07/12/84	BDL	BDL	BDL	BDL	BDL	------
07/18/84	BDL	BDL	BDL	BDL	BDL	------
07/25/84	BDL	BDL	.10	BDL	BDL	BDL
08/01/84	BDL	BDL	.20	BDL	BDL	BDL
08/08/84	BDL	BDL	BDL	BDL	BDL	------
08/15/84	BDL	BDL	.20	BDL	BDL	BDL
08/22/84	BDL	BDL	.20	.20	BDL	BDL
08/29/84	BDL	.20	.30	BDL	BDL	BDL
09/05/84	BDL	.20	.10	BDL	BDL	BDL
09/12/84	BDL	.30	.10	BDL	BDL	BDL
09/19/84	BDL	1.70	BDL	BDL	BDL	------
09/26/84	BDL	2.00	BDL	BDL	BDL	------
10/03/84	BDL	1.10	BDL	BDL	BDL	------
10/10/84	BDL	.40	.60	BDL	BDL	------
10/17/84	BDL	1.30	.20	BDL	BDL	------
10/24/84	BDL	1.50	BDL	BDL	BDL	------
10/31/84	------	.20	BDL	.10	BDL	------
11/07/84	BDL	BDL	BDL	BDL	BDL	------
11/14/84	BDL	BDL	BDL	BDL	BDL	------
11/21/84	BDL	BDL	.10	BDL	BDL	------
11/28/84	BDL	BDL	.20	BDL	BDL	------
12/06/84	BDL	BDL	BDL	BDL	BDL	------
12/12/84	BDL	BDL	BDL	BDL	BDL	------
12/19/84	BDL	.10	.20	BDL	BDL	------
12/26/84	BDL	BDL	.10	BDL	BDL	------
01/02/85	BDL	BDL	.20	BDL	BDL	------
01/09/85	BDL	BDL	.10	BDL	------	------
01/16/85	BDL	BDL	.10	BDL	------	------

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
01/24/85	BDL	BDL	.30	.10	------	------
01/30/85	BDL	BDL	.50	.10	------	------
02/06/85	BDL	.20	.30	BDL	BDL	------
02/13/85	BDL	.20	.60	.10	BDL	------
02/21/85	BDL	BDL	.20	BDL	BDL	------
02/27/85	BDL	BDL	.40	BDL	BDL	------
03/06/85	BDL	BDL	.20	BDL	BDL	------
03/13/85	BDL	.10	.20	BDL	BDL	BDL
03/20/85	BDL	BDL	.30	BDL	BDL	BDL
03/27/85	BDL	BDL	.40	BDL	BDL	BDL
04/03/85	BDL	.20	.60	.10	BDL	BDL
04/10/85	BDL	1.10	.50	BDL	BDL	BDL
04/17/85	BDL	.40	.80	BDL	BDL	BDL
04/24/85	BDL	.90	.50	.20	BDL	BDL
05/01/85	BDL	BDL	.20	BDL	BDL	BDL
05/08/85	BDL	BDL	.10	BDL	BDL	BDL
/15/85	BDL	BDL	.60	BDL	BDL	BDL
../22/85	BDL	BDL	BDL	BDL	BDL	BDL
05/29/85	BDL	.40	.20	BDL	BDL	BDL
06/05/85	BDL	1.70	.20	BDL	BDL	BDL
06/12/85	BDL	1.40	BDL	BDL	BDL	BDL
06/19/85	BDL	.90	BDL	BDL	BDL	BDL
06/26/85	BDL	.70	BDL	BDL	BDL	BDL
AVERAGE	.10	.39	.21	.06	.10	1.00
MINIMUM	.10	.10	.05	.05	.10	1.00
MAXIMUM	.10	2.00	.80	.20	.10	1.00
STD DEV	.00	.52	.19	.03	.00	
COEFF OF VAR	.00	1.33	.90	.53	.00	
# OF SAMPLES	51	52	52	52	48	25

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	2CLORETHYL VINYLETHER (ug/1)	BROMOFORM (ug/1)	123TRICLOR PROPANE (ug/1)	TETRACHLOR ETHYLENE (ug/1)	CHLORO BENZENE (ug/1)	BCEE (ug/1)
07/19/83	BDL	BDL	.30	.40	BDL	------
08/02/83	BDL	BDL	.20	.20	BDL	------
09/13/83	BDL	BDL	BDL	.30	BDL	------
10/04/83	BDL	BDL	.10	.30	BDL	------
11/02/83	BDL	BDL	.20	BDL	BDL	BDL
12/08/83	BDL	BDL	BDL	BDL	BDL	------
01/04/84	BDL	BDL	.40	.10	BDL	BDL
02/08/84	BDL	BDL	.10	BDL	BDL	BDL
03/07/84	BDL	BDL	.10	BDL	BDL	BDL
04/10/84	BDL	BDL	BDL	BDL	BDL	BDL
04/25/84	BDL	BDL	.10	BDL	BDL	BDL
05/02/84	BDL	BDL	BDL	BDL	BDL	BDL
05/10/84	BDL	BDL	.10	BDL	BDL	BDL
05/16/84	BDL	BDL	BDL	BDL	BDL	BDL
05/23/84	BDL	BDL	BDL	BDL	BDL	BDL
05/30/84	BDL	BDL	.20	BDL	BDL	BDL
06/06/84	BDL	BDL	.20	BDL	BDL	BDL
06/13/84	BDL	BDL	.20	BDL	BDL	BDL
06/20/84	BDL	BDL	BDL	.20	BDL	BDL
06/27/84	BDL	BDL	BDL	BDL	BDL	------
AVERAGE	.10	.10	.13	.11	.10	1.00
MINIMUM	.10	.10	.05	.05	.10	1.00
MAXIMUM	.10	.10	.40	.40	.10	1.00
STD DEV	.00	.00	.10	.11	.00	
COEFF OF VAR	.00	.00	.75	.98	.00	
# OF SAMPLES	20	20	20	20	20	14

%)
#)

% (
# (

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	2CLOROETHYL VINYLETHER (ug/1)	BROMOFORM (ug/1)	123TRICLOR PROPANE (ug/1)	TETRACHLOR ETHYLENE (ug/1)	CHLORO BENZENE (ug/1)	BCEE (ug/1)
07/03/84	BDL	BDL	BDL	BDL	BDL	BDL
07/11/84	BDL	BDL	BDL	BDL	BDL	BDL
07/18/84	BDL	BDL	BDL	BDL	BDL	------
07/25/84	BDL	BDL	BDL	BDL	BDL	BDL
08/01/84	BDL	BDL	.20	BDL	BDL	BDL
08/08/84	BDL	BDL	BDL	BDL	BDL	------
08/15/84	BDL	BDL	.10	.10	BDL	BDL
08/22/84	BDL	BDL	.20	.30	------	------
08/29/84	BDL	BDL	.20	.20	BDL	------
09/05/84	BDL	BDL	.10	BDL	BDL	------
09/12/84	BDL	BDL	.20	.10	BDL	------
09/19/84	BDL	BDL	BDL	BDL	BDL	------
09/26/84	BDL	BDL	BDL	BDL	BDL	------
10/03/84	BDL	BDL	BDL	BDL	BDL	------
10/10/84	BDL	BDL	.20	BDL	BDL	------
10/17/84	BDL	BDL	.20	BDL	BDL	------
10/24/84	BDL	BDL	BDL	BDL	BDL	------
10/31/84	BDL	BDL	BDL	BDL	BDL	------
11/07/84	BDL	BDL	BDL	BDL	BDL	------
11/14/84	BDL	BDL	BDL	BDL	BDL	------
11/21/84	BDL	BDL	BDL	BDL	BDL	------
11/28/84	BDL	BDL	BDL	BDL	BDL	------
12/06/84	BDL	BDL	BDL	BDL	BDL	------
12/12/84	BDL	BDL	BDL	BDL	BDL	------
12/19/84	BDL	BDL	.20	BDL	BDL	------
12/28/84	BDL	BDL	.10	BDL	BDL	------
01/02/85	BDL	BDL	.20	BDL	BDL	------
01/09/85	BDL	BDL	BDL	BDL	------	------
01/16/85	BDL	BDL	BDL	BDL	------	------

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	2CLORETHYL VINYLETHER (ug/1)	BROMOFORM (ug/1)	123TRICLOR PROPANE (ug/1)	TETRACHLOR ETHYLENE (ug/1)	CHLORO BENZENE (ug/1)	BCEE (ug/1)
01/23/85	BDL	BDL	.40	BDL	BDL	------
01/30/85	BDL	BDL	.90	.20	BDL	------
02/06/85	BDL	BDL	.40	BDL	BDL	------
02/13/85	BDL	BDL	1.10	.20	BDL	------
02/21/85	BDL	BDL	.20	BDL	BDL	------
02/28/85	BDL	BDL	.20	BDL	BDL	------
03/06/85	BDL	BDL	.20	BDL	BDL	BDL
03/13/85	BDL	BDL	BDL	BDL	BDL	BDL
03/20/85	BDL	BDL	.20	BDL	BDL	BDL
03/27/85	BDL	BDL	BDL	BDL	BDL	BDL
04/03/85	BDL	BDL	.40	BDL	BDL	BDL
04/10/85	BDL	BDL	.30	BDL	BDL	BDL
04/17/85	BDL	BDL	.50	BDL	BDL	BDL
04/24/85	BDL	BDL	.20	.10	BDL	BDL
05/01/85	BDL	BDL	.30	BDL	BDL	BDL
05/08/85	BDL	BDL	.30	BDL	BDL	BDL
05/15/85	BDL	BDL	.40	BDL	BDL	BDL
05/22/85	BDL	BDL	.20	BDL	BDL	BDL
05/29/85	BDL	BDL	.10	BDL	BDL	BDL
06/05/85	BDL	BDL	BDL	BDL	BDL	BDL
06/12/85	BDL	BDL	BDL	BDL	BDL	BDL
06/19/85	BDL	BDL	BDL	BDL	BDL	BDL
06/26/85	BDL	BDL	BDL	BDL	BDL	BDL
AVERAGE	.10	.10	.18	.07	.10	1.00
MINIMUM	.10	.10	.05	.05	.10	1.00
MAXIMUM	.10	.10	1.10	.30	.10	1.00
STD DEV	.00	.00	.20	.05	.00	
COEFF OF VAR	.00	.00	1.13	.74	.00	
# OF SAMPLES	52	52	52	52	49	22

%)
#)

% (
# (

AR301054

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
07/07/83	BDL	BDL	.10	.20	BDL	------
07/11/83	BDL	.40	.10	.10	BDL	------
07/19/83	BDL	.80	.30	.20	BDL	------
07/25/83	BDL	.50	.30	.20	BDL	------
08/02/83	BDL	.90	.30	.20	BDL	------
08/08/83	BDL	.70	BDL	.20	BDL	------
08/17/83	BDL	.60	BDL	.30	BDL	------
08/24/83	BDL	.80	.10	.30	BDL	------
08/31/83	BDL	1.90	BDL	.40	BDL	------
09/07/83	BDL	2.60	BDL	.20	BDL	------
09/14/83	BDL	2.40	BDL	.30	BDL	------
09/20/83	BDL	1.10	BDL	.30	BDL	------
09/27/83	BDL	.60	BDL	.30	BDL	------
10/04/83	BDL	1.10	BDL	.30	BDL	------
10/12/83	BDL	1.60	BDL	.40	BDL	------
10/18/83	BDL	.30	BDL	BDL	BDL	------
10/25/83	BDL	.80	BDL	BDL	BDL	BDL
11/01/83	BDL	.10	BDL	BDL	BDL	BDL
11/09/83	BDL	.30	BDL	.10	BDL	------
11/15/83	BDL	BDL	BDL	BDL	BDL	BDL
11/22/83	BDL	BDL	BDL	BDL	BDL	BDL
11/30/83	BDL	BDL	BDL	BDL	BDL	------
12/07/83	BDL	BDL	BDL	BDL	BDL	------
12/14/83	BDL	BDL	BDL	BDL	BDL	BDL
12/21/83	BDL	BDL	BDL	BDL	BDL	------
12/28/83	BDL	BDL	BDL	BDL	BDL	------
01/04/84	BDL	BDL	.40	.20	BDL	BDL
01/12/84	BDL	BDL	.30	BDL	BDL	BDL
01/18/84	BDL	.20	.40	.20	BDL	BDL

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

OL HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	2CLORETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
01/25/84	BDL	.10	.50	.10	BDL	BDL
02/01/84	BDL	BDL	.40	.20	--------	BDL
02/08/84	BDL	BDL	.20	BDL	BDL	BDL
02/15/84	BDL	BDL	.20	BDL	BDL	BDL
02/23/84	BDL	BDL	.10	BDL	BDL	BDL
02/29/84	BDL	BDL	BDL	BDL	BDL	BDL
03/07/84	BDL	BDL	BDL	BDL	BDL	BDL
03/14/84	BDL	BDL	.10	BDL	BDL	BDL
03/21/84	BDL	BDL	.10	BDL	BDL	BDL
03/28/84	BDL	BDL	.10	BDL	BDL	BDL
04/18/84	BDL	BDL	BDL	BDL	BDL	BDL
04/25/84	BDL	BDL	.10	BDL	BDL	BDL
05/02/84	BDL	BDL	.10	BDL	BDL	BDL
05/10/84	BDL	BDL	.20	BDL	BDL	BDL
05/16/84	BDL	BDL	.10	BDL	BDL	BDL
05/23/84	BDL	.30	.10	BDL	BDL	BDL
05/30/84	BDL	BDL	BDL	BDL	BDL	BDL
06/06/84	BDL	BDL	.10	BDL	BDL	BDL
06/13/84	BDL	.20	.20	BDL	BDL	BDL
06/20/84	BDL	.10	.20	BDL	BDL	BDL
06/27/84	BDL	BDL	.10	BDL	BDL	--------
AVERAGE	.10	.42	.13	.12	.10	1.00
MINIMUM	.10	.10	.05	.05	.10	1.00
MAXIMUM	.10	2.60	.50	.40	.10	1.00
STD DEV	.00	.59	.12	.11	.00	
COEFF OF VAR	.00	1.40	.91	.86	.00	
# OF SAMPLES	50	50	50	50	49	20

% >
# >

% <
# <

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	2CLORETHYL VINYLETHER (ug/l)	DROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
07/05/84	BDL	BDL	BDL	BDL	BDL	BDL
07/12/84	BDL	BDL	BDL	BDL	BDL	---
07/18/84	BDL	BDL	BDL	BDL	BDL	---
07/25/84	BDL	BDL	BDL	BDL	BDL	BDL
08/01/84	BDL	BDL	.10	BDL	BDL	BDL
08/08/84	BDL	BDL	BDL	BDL	BDL	---
08/15/84	BDL	.10	.10	BDL	BDL	BDL
08/22/84	BDL	BDL	BDL	.10	BDL	---
08/29/84	BDL	.20	.30	BDL	BDL	BDL
09/05/84	BDL	BDL	.10	.10	BDL	---
09/12/84	BDL	.30	.10	BDL	BDL	BDL
09/19/84	BDL	1.10	BDL	BDL	BDL	---
09/26/84	BDL	1.30	BDL	BDL	BDL	---
10/03/84	BDL	BDL	.60	BDL	BDL	---
10/10/84	BDL	.20	.20	BDL	BDL	---
10/17/84	BDL	1.30	BDL	BDL	BDL	---
10/24/84	BDL	.80	BDL	BDL	BDL	---
10/31/84	---	.10	BDL	BDL	BDL	---
11/07/84	BDL	BDL	BDL	BDL	BDL	---
11/14/84	BDL	BDL	.10	BDL	BDL	---
11/21/84	BDL	BDL	.10	BDL	BDL	---
11/28/84	BDL	BDL	BDL	BDL	BDL	---
12/06/84	BDL	BDL	BDL	BDL	BDL	---
12/12/84	BDL	.10	.10	BDL	BDL	---
12/19/84	BDL	.20	.10	BDL	BDL	---
12/26/84	BDL	BDL	.10	BDL	BDL	---
01/02/85	BDL	BDL	BDL	BDL	BDL	---
01/09/85	BDL	BDL	BDL	BDL	---	---
01/16/85	BDL	BDL	BDL	BDL	---	---

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

GL HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	2CLOKETHYL VINYLETHER (ug/l)	BROMOFORM (ug/l)	123TRICLOR PROPANE (ug/l)	TETRACHLOR ETHYLENE (ug/l)	CHLORO BENZENE (ug/l)	BCEE (ug/l)
01/24/85	BDL	BDL	.30	BDL	------	------
01/30/85	BDL	BDL	.40	.10	BDL	------
02/06/85	BDL	BDL	.30	BDL	BDL	------
02/13/85	BDL	BDL	.50	BDL	BDL	------
02/21/85	BDL	BDL	.10	BDL	BDL	------
02/27/85	BDL	BDL	.30	BDL	BDL	------
03/06/85	BDL	BDL	.20	BDL	BDL	BDL
03/13/85	BDL	.20	.20	BDL	BDL	BDL
03/20/85	BDL	BDL	.20	BDL	BDL	BDL
03/27/85	BDL	BDL	.30	BDL	BDL	BDL
04/03/85	BDL	.20	.40	.20	BDL	BDL
04/10/85	BDL	.90	.30	BDL	BDL	BDL
04/17/85	BDL	.20	.40	BDL	BDL	BDL
04/24/85	BDL	.60	.40	.20	BDL	BDL
05/01/85	BDL	BDL	.20	BDL	BDL	BDL
05/08/85	BDL	BDL	BDL	BDL	BDL	BDL
05/15/85	BDL	BDL	.40	BDL	BDL	BDL
05/22/85	BDL	BDL	BDL	BDL	BDL	BDL
05/29/85	BDL	.80	.20	BDL	BDL	BDL
06/05/85	BDL	1.30	.20	BDL	BDL	BDL
06/12/85	BDL	1.20	BDL	BDL	BDL	BDL
06/19/85	BDL	.30	BDL	BDL	BDL	BDL
06/26/85	BDL	.50	BDL	BDL	BDL	BDL
AVERAGE	.10	.29	.16	.06	.10	1.00
MINIMUM	.10	.10	.05	.05	.10	1.00
MAXIMUM	.10	1.30	.60	.20	.10	1.00
STD DEV	.00	.37	.14	.03	.00	
COEFF OF VAR	.00	1.27	.88	.53	.00	
# OF SAMPLES	51	52	52	52	49	23

%)
#)

% (
# (

PERIOD FROM 07/01/82 TO 6/30/83

QL Intake

-DATE	MIBK (ug/l)	TOLUENE (ug/l)	ETHYL BENZENE (ug/l)	CUMENE (ug/l)	o-XYLENE (ug/l)	m-XYLENE (ug/l)
06/29/83	BDL	BDL	BDL	BDL	BDL	BDL
AVERAGE	.25	.05	.05	.05	.05	.05
MINIMUM	.25	.05	.05	.05	.05	.05
MAXIMUM	.25	.05	.05	.05	.05	.05
STD DEV						
COEFF OF VAR						
# OF SAMPLES	1	1	1	1	1	1

% >
# >

% <
# <

AR301059

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	BENZENE (ug/l)
06/29/83	.10
AVERAGE	.10
MINIMUM	.10
MAXIMUM	.10
STD DEV	
COEFF OF VAR	
# OF SAMPLES	1

% >
# >

% <
# <

12/19/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT3 ***

BENZENE (ug/l)

PERIOD FROM 07/01/82 TO 06/30/83

	QUEEN LANE HIGH SERVICE
AVERAGE	
MINIMUM	
MAXIMUM	
STD DEV	
COEFF OF VAR	
# OF SAMPLES	0

12/19/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	MIBK (ug/l)	TOLUENE (ug/l)	ETHYL BENZENE (ug/l)	CUMENE (ug/l)	o-XYLENE (ug/l)	m-XYLENE (ug/l)
AVERAGE						
MINIMUM						
MAXIMUM						
STD DEV						
COEFF OF VAR						
# OF SAMPLES	0	0	0	0	0	0

% >
# >

% <
# <

AR301062

8/23/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	BENZENE (ug/l)	MIBK (ug/l)	TOLUENE (ug/l)	ETHYL BENZENE (ug/l)	CUMENE (ug/l)	o-XYLENE (ug/l)
06/27/83	1.00	.60	BDL	BDL	BDL	BDL
AVERAGE	1.00	.60	.05	.05	.05	.05
MINIMUM	1.00	.60	.05	.05	.05	.05
MAXIMUM	1.00	.60	.05	.05	.05	.05
STD DEV						
COEFF OF VAR						
# OF SAMPLES	1	1	1	1	1	1

% >
# >

% <
# <

AR301063

8/23/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	BENZENE (ug/l)	MIBK (ug/l)	TOLUENE (ug/l)	ETHYL BENZENE (ug/l)	CUMENE (ug/l)	o-XYLENE (ug/l)
AVERAGE					@<	
MINIMUM						
MAXIMUM						
STD DEV						
COEFF OF VAR						
# OF SAMPLES	0	0	0	0	0	0

% >
# >

% <
# <

AR301064

8/22/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BAXTER INTAKE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	BENZENE (ug/l)	MIBK (ug/l)	TOLUENE (ug/l)	ETHYL BENZENE (ug/l)	CUMENE (ug/l)	o-XYLENE (ug/l)
07/19/83	BDL	BDL	BDL	BDL	BDL	BDL
04/17/84	.20	------	.20	BDL	BDL	.10
05/08/84	.20	------	.20	BDL	BDL	BDL
06/05/84	BDL	------	BDL	.20	BDL	BDL
AVERAGE	.13	.25	.13	.09	.05	.06
MINIMUM	.05	.25	.05	.05	.05	.05
MAXIMUM	.20	.25	.20	.20	.05	.10
STD DEV	.09		.09	.07	.00	.02
COEFF OF VAR	.69		.69	.86	.00	.40
# OF SAMPLES	4	1	4	4	4	4

% >
# >

% <
# <

AR301065

8/22/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

PAGE

BAXTER INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	BENZENE (ug/l)	MIBK (ug/l)	TOLUENE (ug/l)	ETHYL BENZENE (ug/l)	CUMENE (ug/l)	o-XYLENE (ug/l)
07/05/84	1.60	------	BDL	BDL	BDL	BDL
08/07/84	1.20	------	BDL	BDL	BDL	BDL
09/05/84	1.20	------	.10	.10	BDL	BDL
10/03/84	1.20	------	1.00	.20	BDL	.40
11/16/84	.20	------	.10	.20	BDL	.20
12/10/84	1.00	------	.20	BDL	BDL	.10
01/02/85	BDL	------	BDL	BDL	BDL	BDL
02/07/85	BDL	------	BDL	BDL	BDL	BDL
03/06/85	BDL	------	BDL	BDL	BDL	BDL
04/02/85	BDL	------	BDL	BDL	BDL	BDL
05/06/85	BDL	------	BDL	BDL	BDL	BDL
06/12/85	BDL	------	BDL	BDL	BDL	BDL
AVERAGE	.56		.15	.08	.05	.10
MINIMUM	.05		.05	.05	.05	.05
MAXIMUM	1.60		1.00	.20	.05	.40
STD DEV	.62		.27	.06	.00	.11
COEFF OF VAR	1.11		1.81	.74	.00	1.10
# OF SAMPLES	12	0	12	12	12	12

% >
# >

% <
# <

AR301066

8/22/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BAXTER HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	BENZENE (ug/l)	MIBK (ug/l)	TOLUENE (ug/l)	ETHYL BENZENE (ug/l)	CUMENE (ug/l)	o-XYLENE (ug/l)
04/17/84	.20	------	.30	BDL	BDL	.10
05/08/84	.30	------	.40	BDL	BDL	BDL
06/05/84	.20	------	.20	.50	BDL	.80
AVERAGE	.23		.30	.20	.05	.32
MINIMUM	.20		.20	.05	.05	.05
MAXIMUM	.30		.40	.50	.05	.80
STD DEV	.06		.10	.26	.00	.42
COEFF OF VAR	.25		.33	1.30	.00	1.32
# OF SAMPLES	3	0	3	3	3	3

% >
# >

% <

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BAXTER HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	BENZENE (ug/l)	MIBK (ug/l)	TOLUENE (ug/l)	ETHYL BENZENE (ug/l)	CUMENE (ug/l)	o-XYLENE (ug/l)
07/03/84	------	------	.30	BDL	BDL	.20
08/07/84	------	------	.20	.40	.10	.60
09/11/84	.30	------	.60	.30	BDL	.50
10/02/84	BDL	------	2.30	.40	BDL	.30
11/14/84	BDL	------	2.30	BDL	BDL	.20
12/12/84	BDL	------	1.60	BDL	BDL	.10
01/02/85	BDL	------	BDL	BDL	BDL	BDL
02/07/85	BDL	------	.20	BDL	BDL	BDL
03/06/85	BDL	------	.10	BDL	BDL	BDL
04/02/85	BDL	------	.10	BDL	BDL	BDL
05/06/85	BDL	------	BDL	BDL	BDL	BDL
06/12/85	BDL	------	.30	BDL	BDL	BDL
AVERAGE	.07		.68	.13	.05	.18
MINIMUM	.05		.05	.05	.05	.05
MAXIMUM	.30		2.30	.40	.10	.60
STD DEV	.08		.87	.15	.01	.19
COEFF OF VAR	1.05		1.29	1.13	.27	1.04
# OF SAMPLES	10	0	12	12	12	12

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	BENZENE (ug/l)	MIBK (ug/l)	TOLUENE (ug/l)	ETHYL BENZENE (ug/l)	CUMENE (ug/l)	o-XYLENE (ug/l)
07/18/83	.20	BDL	3.00	.30	BDL	.50
04/18/84	.10	------	BDL	BDL	BDL	BDL
05/09/84	.40	------	.80	.10	BDL	BDL
06/06/84	.40	------	.70	BDL	BDL	.10
AVERAGE	.28	.25	1.14	.13	.05	.17
MINIMUM	.10	.25	.05	.05	.05	.05
MAXIMUM	.40	.25	3.00	.30	.05	.50
STD DEV	.15		1.29	.12	.00	.22
COEFF OF VAR	.55		1.13	.95	.00	1.25
# OF SAMPLES	4	1	4	4	4	4

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8/23/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	BENZENE (ug/l)	MIBK (ug/l)	TOLUENE (ug/l)	ETHYL BENZENE (ug/l)	CUMENE (ug/l)	o-XYLENE (ug/l)
07/03/84	1.70	------	.30	BDL	BDL	BDL
08/08/84	1.20	------	BDL	.10	BDL	BDL
09/05/84	1.30	------	.20	.60	BDL	.10
10/10/84	.80	------	.10	.20	BDL	.20
11/14/84	.80	------	------	.20	BDL	.20
12/12/84	.90	------	.20	.10	BDL	.20
01/02/85	BDL	------	BDL	BDL	BDL	BDL
02/06/85	BDL	------	BDL	BDL	BDL	BDL
03/06/85	BDL	------	BDL	BDL	BDL	BDL
04/03/85	.30	------	1.10	.10	BDL	.20
05/08/85	BDL	------	BDL	BDL	BDL	BDL
06/12/85	BDL	------	BDL	BDL	BDL	BDL
AVERAGE	.60		.20	.13	.05	.10
MINIMUM	.05		.05	.05	.05	.05
MAXIMUM	1.70		1.10	.60	.05	.20
STD DEV	.59		.31	.16	.00	.07
COEFF OF VAR	.98		1.55	1.18	.00	.69
# OF SAMPLES	12	0	11	12	12	12

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AR301070

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	BENZENE (ug/l)	MIBK (ug/l)	TOLUENE (ug/l)	ETHYL BENZENE (ug/l)	CUMENE (ug/l)	o-XYLENE (ug/l)
04/10/84	.20	------	.50	BDL	BDL	.10
05/10/84	.40	------	.70	BDL	BDL	BDL
06/06/84	.60	------	.50	.20	BDL	.40
AVERAGE	.40		.57	.10	.05	.18
MINIMUM	.20		.50	.05	.05	.05
MAXIMUM	.60		.70	.20	.05	.40
STD DEV	.20		.12	.09	.00	.19
COEFF OF VAR	.50		.20	.87	.00	1.03
# OF SAMPLES	3	0	3	3	3	3

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	BENZENE (ug/l)	MIBK (ug/l)	TOLUENE (ug/l)	ETHYL BENZENE (ug/l)	CUMENE (ug/l)	o-XYLENE (ug/l)
07/05/84	------	------	.40	BDL	BDL	BDL
08/08/84	BDL	------	.50	.20	BDL	.20
09/05/84	BDL	------	------	.10	BDL	.20
10/03/84	.20	------	------	BDL	BDL	.10
11/14/84	.50	------	2.00	BDL	BDL	.10
12/12/84	.40	------	.30	.20	BDL	BDL
01/02/85	BDL	------	BDL	BDL	BDL	BDL
02/06/85	BDL	------	.20	BDL	BDL	BDL
03/06/85	BDL	------	.10	BDL	BDL	BDL
04/03/85	BDL	------	.20	BDL	BDL	BDL
05/08/85	BDL	------	BDL	BDL	BDL	BDL
06/12/85	BDL	------	BDL	BDL	BDL	BDL
AVERAGE	.14		.39	.08	.05	.08
MINIMUM	.05		.05	.05	.05	.05
MAXIMUM	.50		2.00	.20	.05	.20
STD DEV	.16		.59	.06	.00	.06
COEFF OF VAR	1.19		1.53	.74	.00	.69
# OF SAMPLES	11	0	10	12	12	12

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	BENZENE (ug/l)	MIBK (ug/l)	TOLUENE (ug/l)	ETHYL BENZENE (ug/l)	CUMENE (ug/l)	o-XYLENE (ug/l)
07/19/83	BDL	BDL	BDL	BDL	BDL	BDL
04/18/84	.20	------	BDL	BDL	BDL	BDL
05/10/84	.20	------	.20	.20	BDL	.40
06/06/84	.10	------	.40	.30	BDL	.20
AVERAGE	.14	.25	.18	.15	.05	.18
MINIMUM	.05	.25	.05	.05	.05	.05
MAXIMUM	.20	.25	.40	.30	.05	.40
STD DEV	.07		.17	.12	.00	.17
COEFF OF VAR	.55		.95	.82	.00	.95
# OF SAMPLES	4	1	4	4	4	4

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	BENZENE (ug/l)	MIBK (ug/l)	TOLUENE (ug/l)	ETHYL BENZENE (ug/l)	CUMENE (ug/l)	o-XYLENE (ug/l)
07/03/84	1.80	------	.70	BDL	BDL	BDL
08/08/84	1.20	------	BDL	.10	BDL	BDL
09/05/84	.80	------	------	BDL	BDL	.20
10/03/84	1.10	------	.60	.20	BDL	.30
11/14/84	.80	------	3.70	.10	BDL	.20
12/12/84	1.10	------	.20	.10	BDL	.10
01/02/85	BDL	------	BDL	BDL	BDL	BDL
02/06/85	BDL	------	BDL	BDL	BDL	BDL
03/06/85	BDL	------	BDL	BDL	BDL	BDL
04/03/85	BDL	------	BDL	BDL	BDL	BDL
05/08/85	BDL	------	BDL	BDL	BDL	BDL
06/12/85	BDL	------	BDL	BDL	BDL	BDL
AVERAGE	.59		.50	.07	.05	.10
MINIMUM	.05		.05	.05	.05	.05
MAXIMUM	1.80		3.70	.20	.05	.30
STD DEV	.62		1.09	.05	.00	.09
COEFF OF VAR	1.04		2.15	.60	.00	.85
# OF SAMPLES	12	0	11	12	12	12

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END OF PROGRAM 9/19/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	BENZENE (ug/l)	MIBK (ug/l)	TOLUENE (ug/l)	ETHYL BENZENE (ug/l)	CUMENE (ug/l)	o-XYLENE (ug/l)
04/18/84	.20	------	.40	.20	BDL	.40
05/10/84	.30	------	.70	BDL	BDL	.20
06/06/84	.50	------	.50	.10	BDL	.30
AVERAGE	.33		.53	.12	.05	.30
MINIMUM	.20		.40	.05	.05	.20
MAXIMUM	.50		.70	.20	.05	.40
STD DEV	.15		.15	.08	.00	.10
COEFF OF VAR	.46		.29	.65	.00	.33
# OF SAMPLES	3	0	3	3	3	3

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AR301075

END OF PROGRAM

7/17/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	BENZENE (ug/l)	MIDK (ug/l)	TOLUENE (ug/l)	ETHYL BENZENE (ug/l)	CUMENE (ug/l)	o-XYLENE (ug/l)
07/05/84	------	------	.20	BDL	BDL	BDL
08/08/84	BDL	------	BDL	.20	BDL	.80
09/05/84	BDL	------	.80	.40	BDL	.40
10/03/84	BDL	------	.20	BDL	BDL	BDL
11/14/84	.40	------	.10	BDL	BDL	.10
12/12/84	.90	------	.40	.20	BDL	.30
01/02/85	BDL	------	BDL	BDL	BDL	BDL
02/06/85	BDL	------	.30	BDL	BDL	BDL
03/06/85	BDL	------	.20	BDL	BDL	BDL
04/03/85	BDL	------	.10	BDL	BDL	BDL
05/08/85	BDL	------	BDL	BDL	BDL	BDL
06/12/85	BDL	------	BDL	BDL	BDL	BDL
AVERAGE	.16		.21	.10	.05	.17
MINIMUM	.05		.05	.05	.05	.05
MAXIMUM	.90		.80	.40	.05	.80
STD DEV	.27		.22	.11	.00	.23
COEFF OF VAR	1.68		1.04	1.05	.00	1.39
# OF SAMPLES	11	0	12	12	12	12

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AR301076

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT4 ***

07 5/86

PERIOD FROM 7/01/85 TO 6/30/86

		QUEEN LANE INTAKE			QL HIGH SERVICE		
		MAX	AVG	NUM SAMPLS	MAX	AVG	NUM SAMPLS
METHYLENE CHLORIDE	ug/l	1.40	.21	41	2.20	.27	46
11DICHLOROETHYLENE	ug/l	.05	.05	43	.05	.05	50
1,1-DICHLOROETHANE	ug/l	.05	.05	43	.05	.05	50
t12DICHLOROETHYLENE	ug/l	.05	.05	43	.05	.05	50
CHLOROFORM	ug/l	.40	.11	43	69.00	28.36	50
1,2-DICHLOROETHANE	ug/l	.05	.05	43	.05	.05	50
1,1,1TRICHLOROETHANE	ug/l	.20	.06	42	.40	.08	50
CARBON TETRACHLORIDE	ug/l	.05	.05	43	.10	.05	50
BROMODICHLOROMETHANE	ug/l	.05	.05	43	31.00	13.60	50
1,2-DICHLOROPROPANE	ug/l	.05	.05	43	.05	.05	50
112TRICHLOROETHYLENE	ug/l	.05	.05	43	.30	.07	50
DIBROMOCHLOROMETHANE	ug/l	.05	.05	43	16.00	4.60	50
2CLORETHYLVINYLETHER	ug/l	.10	.10	43	8.00	.26	48
BROMOFORM	ug/l	.10	.10	43	1.60	.34	49
123TRICHLOROPROPANE	ug/l	.10	.06	43	.40	.09	50
TETRACHLOROETHYLENE	ug/l	3.80	.14	43	.20	.06	50
CHLOROBENZENE	ug/l	.10	.10	43	.10	.10	47
BIS2CHLOROETHYLETHER	ug/l	1.00	1.00	10	1.00	1.00	15
TOTAL TRIHALOMETHANE	ug/l	.40	.10	43	09.00	47.04	50
ACETONE	ug/l						
DIMETHOXYMETHANE	ug/l						
TETRAHYDROFURAN	ug/l						
METHYL ETHYL KETONE	ug/l						
1,4 DIOXANE	ug/l						

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT4 ***

07/05/06

PERIOD FROM 7/01/05 TO 6/30/06

		QUEEN LANE INTAKE			QL HIGH SERVICE		
		MAX	AVG	NUM SAMPLS	MAX	AVG	NUM SAMPLS
METHYLISOBUTYLKETONE	ug/l						
TOLUENE	ug/l	.05	.05	2	.05	.05	2
ETHYL BENZENE	ug/l	.05	.05	2	.05	.05	2
CUMENE	ug/l	.05	.05	2	.05	.05	2
o-XYLENE	ug/l	.05	.05	2	.05	.05	2
m-XYLENE	ug/l	.05	.05	2	.05	.05	2
p-XYLENE	ug/l	.05	.05	2	.05	.05	2
o-DICHLOROBENZENE	ug/l	.05	.05	1	.05	.05	2
m-DICHLOROBENZENE	ug/l	.05	.05	1	.05	.05	2
p-DICHLOROBENZENE	ug/l	.05	.05	2	.05	.05	2
STYRENE	ug/l	.05	.05	2	.05	.05	2

* ALL RESULTS IN MG/L EXCEPT AS NOTED

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT4 ***

07 5/06

PERIOD FROM 7/01/05 TO 6/30/06

		BELMONT INTAKE			DELMONT HIGH SERVICE		
		MAX	AVG	NUM SAMPLS	MAX	AVG	NUM SAMPLS
METHYLENE CHLORIDE	ug/l	1.30	.22	41	.90	.20	42
11DICHLOROETHYLENE	ug/l	.05	.05	42	.05	.05	49
1,1-DICHLOROETHANE	ug/l	.05	.05	42	.05	.05	49
t12DICHLOROETHYLENE	ug/l	.10	.05	42	.05	.05	49
CHLOROFORM	ug/l	.40	.09	42	54.00	27.15	49
1,2-DICHLOROETHANE	ug/l	.05	.05	42	.05	.05	49
1,1,1TRICHLOROETHANE	ug/l	.20	.06	41	.50	.09	49
CARBON TETRACHLORIDE	ug/l	.05	.05	42	.10	.05	49
BROMODICHLOROMETHANE	ug/l	.05	.05	42	31.00	13.79	49
1,2-DICHLOROPROPANE	ug/l	.05	.05	42	.20	.05	49
112TRICHLOROETHYLENE	ug/l	.05	.05	42	.20	.09	49
DIBROMOCHLOROMETHANE	ug/l	.05	.05	41	19.00	5.43	49
2CLORETHYLVINYLETHER	ug/l	.10	.10	41	.10	.10	49
BROMOFORM	ug/l	.10	.10	41	2.60	.53	49
123TRICHLOROPROPANE	ug/l	.10	.05	41	.30	.00	49
TETRACHLOROETHYLENE	ug/l	.10	.05	41	.20	.06	49
CHLOROBENZENE	ug/l	.10	.10	41	.10	.10	49
BIS2CHLOROETHYLETHER	ug/l	1.00	1.00	10	1.00	1.00	17
TOTAL TRIHALOMETHANE	ug/l	.40	.09	42	86.00	46.70	49
ACETONE	ug/l						
DIMETHOXYMETHANE	ug/l						
TETRAHYDROFURAN	ug/l						
METHYL ETHYL KETONE	ug/l						
1,4 DIOXANE	ug/l						
BENZENE	ug/l	.20	.13	2	.0		

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT4 ***

07 5/06

PERIOD FROM 7/01/05 TO 6/30/06

		DELMONT INTAKE			DELMONT HIGH SERVICE		
		MAX	AVG	NUM SAMPLS	MAX	AVG	NUM SAMPLS
METHYLISOBUTYLKETONE	ug/l						
TOLUENE	ug/l	.20	.13	2	.05	.05	2
ETHYL BENZENE	ug/l	.05	.05	2	.05	.05	2
CUMENE	ug/l	.05	.05	2	.05	.05	2
o-XYLENE	ug/l	.05	.05	2	.05	.05	2
m-XYLENE	ug/l	.05	.05	2	.05	.05	2
p-XYLENE	ug/l	.05	.05	2	.05	.05	2
o-DICHLOROBENZENE	ug/l	.05	.05	1	.05	.05	2
m-DICHLOROBENZENE	ug/l	.05	.05	1	.05	.05	2
p-DICHLOROBENZENE	ug/l	.05	.05	1	.05	.05	2
STYRENE	ug/l	.05	.05	2	.05	.05	2

* ALL RESULTS IN MG/L EXCEPT AS NOTED

END OF PROGRAM

AR301080

PHILADELPHIA WATER DEPARTMENT 6/18/87
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT4 ***

PERIOD FROM 7/01/85 TO 6/30/86 PAGE1

		QUEEN LANE INTAKE			QL HIGH SERVICE		
		MIN	NUM SAMPLS	#/% GE 0.1	MIN	NUM SAMPLS	#/% 0.1
METHYLENE CHLORIDE	ug/l	.05	44	26/59	.05	47	28/5
11DICHLOROETHYLENE	ug/l	.05	46	0/ 0	.05	51	0/
1,1-DICHLOROETHANE	ug/l	.05	46	0/ 0	.05	51	0/
t12DICHLOROETHYLENE	ug/l	.05	46	0/ 0	.05	51	0/
CHLOROFORM	ug/l	.05	46	17/36	9.20	51	51/**
1,2-DICHLOROETHANE	ug/l	.05	46	0/ 0	.05	51	0/ 0
1,1,1TRICHLOROETHANE	ug/l	.05	45	4/ 8	.05	51	11/21
CARBON TETRACHLORIDE	ug/l	.05	46	0/ 0	.05	51	4/ 7
BROMODICHLOROMETHANE	ug/l	.05	46	0/ 0	3.30	51	51/**
1,2-DICHLOROPROPANE	ug/l	.05	46	0/ 0	.05	51	0/ 0
112TRICHLOROETHYLENE	ug/l	.05	46	0/ 0	.05	51	14/27
DIBROMOCHLOROMETHANE	ug/l	.05	46	0/ 0	.20	51	51/**
2CLORETHYLVINYLETHER	ug/l	.10	46	46/**	.10	49	49/**
BROMOFORM	ug/l	.10	46	46/**	.10	51	51/**
123TRICHLOROPROPANE	ug/l	.05	46	5/10	.05	51	11/21
TETRACHLOROETHYLENE	ug/l	.05	46	2/ 4	.05	51	6/11
CHLOROBENZENE	ug/l	.10	46	46/**	.10	48	48/**
BIS2CHLOROETHYLETHER	ug/l	1.00	10	10/**	1.00	15	15/**
TOTAL TRIHALOMETHANE	ug/l	.05	46	16/34	14.00	51	51/**
ACETONE	ug/l						
DIMETHOXYMETHANE	ug/l						
TETRAHYDROFURAN	ug/l						
METHYL ETHYL KETONE	ug/l						
1,4 -DIOXANE	ug/l						

AR301081

ZENE	ug/l	.05	1	0/ 0	.05	2	0/ 0

PHILADELPHIA WATER DEPARTMENT 6/18/87
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT4 ***

PERIOD FROM 7/01/85 TO 6/30/86 PAGE2

		QUEEN LANE INTAKE			QL HIGH SERVICE		
		MIN	NUM SAMPLS	#/% GE 0.1	MIN	NUM SAMPLS	#/% GE 0.1
METHYLISOBUTYLKETONE	ug/l						
TOLUENE	ug/l	.05	2	0/ 0	.05	2	0/ 0
ETHYL BENZENE	ug/l	.05	2	0/ 0	.05	2	0/ 0
CUMENE	ug/l	.05	2	0/ 0	.05	2	0/ 0
o-XYLENE	ug/l	.05	2	0/ 0	.05	2	0/ 0
m-XYLENE	ug/l	.05	2	0/ 0	.05	2	0/ 0
p-XYLENE	ug/l	.05	2	0/ 0	.05	2	0/ 0
o-DICHLOROBENZENE	ug/l	.05	1	0/ 0	.05	2	0/ 0
m-DICHLOROBENZENE	ug/l	.05	1	0/ 0	.05	2	0/ 0
p-DICHLOROBENZENE	ug/l	.05	2	0/ 0	.05	2	0/ 0
STYRENE	ug/l	.05	2	0/ 0	.05	2	0/ 0

* ALL RESULTS IN MG/L EXCEPT AS NOTED

END OF PROGRAM

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT4 ***

6/18/87

PERIOD FROM 7/01/85 TO 6/30/86

		BELMONT INTAKE			BELMONT HIGH SERVICE		
		#/% GT 0.2	#/% LT 0.09	#/% GE 0.1	#/% GT 0.2	#/% LT 0.09	#/% GE 0.1
METHYLENE CHLORIDE	ug/l	16/35	22/48	23/51	12/27	18/41	25/58
11DICHLOROETHYLENE	ug/l	0/ 0	46/**	0/ 0	0/ 0	50/**	0/ 0
1,1-DICHLOROETHANE	ug/l	0/ 0	46/**	0/ 0	0/ 0	50/**	0/ 0
t12DICHLOROETHYLENE	ug/l	0/ 0	45/97	1/ 2	0/ 0	50/**	0/ 0
CHLOROFORM	ug/l	3/ 6	30/65	16/34	50/**	0/ 0	50/**
1,2-DICHLOROETHANE	ug/l	0/ 0	46/**	0/ 0	0/ 0	50/**	0/ 0
1,1,1TRICHLOROETHANE	ug/l	0/ 0	42/93	3/ 6	3/ 6	39/78	11/22
CARBON TETRACHLORIDE	ug/l	0/ 0	46/**	0/ 0	0/ 0	47/94	3/ 6
BROMODICHLOROMETHANE	ug/l	0/ 0	46/**	0/ 0	50/**	0/ 0	50/**
1,2-DICHLOROPROPANE	ug/l	0/ 0	46/**	0/ 0	0/ 0	50/**	0/ 0
112TRICHLOROETHYLENE	ug/l	0/ 0	46/**	0/ 0	0/ 0	26/52	24/48
DIBROMOCHLOROMETHANE	ug/l	0/ 0	45/**	0/ 0	48/96	1/ 2	49/98
2CLORETHYLVINYLETHER	ug/l	0/ 0	0/ 0	45/**	0/ 0	0/ 0	50/**
BROMOFORM	ug/l	0/ 0	0/ 0	45/**	21/42	0/ 0	50/**
123TRICHLOROPROPANE	ug/l	0/ 0	43/95	2/ 4	1/ 2	38/76	12/24
TETRACHLOROETHYLENE	ug/l	0/ 0	44/97	1/ 2	0/ 0	42/84	8/16
CHLOROBENZENE	ug/l	0/ 0	0/ 0	45/**	0/ 0	0/ 0	50/**
BIS2CHLOROETHYLETHER	ug/l	10/**	0/ 0	10/**	17/**	0/ 0	17/**
TOTAL TRIHALOMETHANE	ug/l	3/ 6	30/65	16/34	50/**	0/ 0	50/**
ACETONE	ug/l						
DIMETHOXYMETHANE	ug/l						
TETRAHYDROFURAN	ug/l						

AR301083

DIOXANE	ug/l						
BENZENE	ug/l	0/ 0	1/50	1/50	0/ 0	2/**	0/ 0

PHILADELPHIA WATER DEPARTMENT 6/18/87
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT4 ***

PERIOD FROM 7/01/85 TO 6/30/86 PAGE2

		BELMONT INTAKE			BELMONT HIGH SERVICE		
		#/% GT 0.2	#/% LT 0.09	#/% GE 0.1	#/% GT 0.2	#/% LT 0.09	#/% GE 0.1
METHYLISOBUTYLKETONE	ug/l						
TOLUENE	ug/l	0/ 0	1/50	1/50	0/ 0	2/**	0/ 0
ETHYL BENZENE	ug/l	0/ 0	2/**	0/ 0	0/ 0	2/**	0/ 0
CUMENE	ug/l	0/ 0	2/**	0/ 0	0/ 0	2/**	0/ 0
o-XYLENE	ug/l	0/ 0	2/**	0/ 0	0/ 0	2/**	0/ 0
m-XYLENE	ug/l	0/ 0	2/**	0/ 0	0/ 0	2/**	0/ 0
p-XYLENE	ug/l	0/ 0	2/**	0/ 0	0/ 0	2/**	0/ 0
o-DICHLOROBENZENE	ug/l	0/ 0	1/**	0/ 0	0/ 0	2/**	0/ 0
m-DICHLOROBENZENE	ug/l	0/ 0	1/**	0/ 0	0/ 0	2/**	0/ 0
p-DICHLOROBENZENE	ug/l	0/ 0	1/**	0/ 0	0/ 0	2/**	0/ 0
STYRENE	ug/l	0/ 0	2/**	0/ 0	0/ 0	2/**	0/ 0

* ALL RESULTS IN MG/L EXCEPT AS NOTED

ID OF PROGRAM

12/19/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
07/12/82	.20	------	------	------	------	------
08/23/82	1.90	------	------	------	------	------
09/03/82	.60	------	------	------	------	------
10/25/82	.50	------	------	------	------	------
11/22/82	.60	------	------	------	------	------
12/20/82	.50	------	------	------	------	------
17/83	.70	------	------	------	------	------
22/83	.20	------	------	------	------	------
02/28/83	1.80	------	------	------	------	------
03/07/83	.10	------	------	------	------	------
03/14/83	.10	------	------	------	------	------
03/21/83	.10	------	------	------	------	------
03/28/83	.10	------	------	------	------	------
04/04/83	.10	------	------	------	------	------
04/11/83	.10	------	------	------	------	------
04/18/83	.10	------	------	------	------	------
04/26/83	.10	------	------	------	------	------
05/02/83	.10	------	------	------	------	------
05/09/83	.10	------	------	------	------	------
05/16/83	.20	------	------	------	------	------
05/23/83	.30	------	------	------	------	------
05/31/83	.20	------	------	------	------	------
06/06/83	.10	------	------	------	------	------
06/13/83	.30	------	------	------	------	------
06/29/83	------	1.00	------	.90	BDL	2.90
AVERAGE	.38	1.00		.90	.25	2.90
MINIMUM	.10	1.00		.90	.25	2.90
MAXIMUM	1.90	1.00		.90	.25	2.90
STD DEV	.49					
COEFF OF VAR	1.30					
# SAMPLES	24	1	0	1	1	1

% >
# >

AR301085

12/19/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
07/06/82	143.00	------	------	------	------	------
07/12/82	111.00	------	------	------	------	------
07/19/82	90.00	------	------	------	------	------
07/26/82	100.00	------	------	------	------	------
08/04/82	94.00	------	------	------	------	------
08/10/82	90.00	------	------	------	------	------
08/16/82	100.00	------	------	------	------	------
08/23/82	73.00	------	------	------	------	------
09/01/82	82.00	------	------	------	------	------
08/82	80.00	------	------	------	------	------
14/82	81.00	------	------	------	------	------
09/21/82	71.00	------	------	------	------	------
09/27/82	65.00	------	------	------	------	------
10/04/82	75.00	------	------	------	------	------
10/12/82	55.00	------	------	------	------	------
10/18/82	41.00	------	------	------	------	------
10/25/82	41.00	------	------	------	------	------
11/01/82	44.00	------	------	------	------	------
11/08/82	73.00	------	------	------	------	------
11/15/82	54.00	------	------	------	------	------
11/22/82	45.00	------	------	------	------	------
11/29/82	34.00	------	------	------	------	------
12/06/82	54.00	------	------	------	------	------
12/13/82	37.00	------	------	------	------	------
12/20/82	56.00	------	------	------	------	------
12/27/82	30.00	------	------	------	------	------
01/03/83	26.00	------	------	------	------	------
01/10/83	27.00	------	------	------	------	------
01/17/83	41.00	------	------	------	------	------

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
01/24/83	19.00	------	------	------	------	------
01/31/83	23.00	------	------	------	------	------
02/08/83	27.00	------	------	------	------	------
02/15/83	18.00	------	------	------	------	------
02/22/83	25.00	------	------	------	------	------
02/28/83	23.00	------	------	------	------	------
03/07/83	31.00	------	------	------	------	------
03/14/83	32.00	------	------	------	------	------
03/21/83	47.00	------	------	------	------	------
03/28/83	25.00	------	------	------	------	------
04/04/83	32.00	------	------	------	------	------
04/11/83	34.00	------	------	------	------	------
04/18/83	30.00	------	------	------	------	------
04/26/83	27.00	------	------	------	------	------
05/02/83	30.00	------	------	------	------	------
05/09/83	28.00	------	------	------	------	------
05/16/83	31.00	------	------	------	------	------
05/23/83	48.00	------	------	------	------	------
05/31/83	57.00	------	------	------	------	------
06/06/83	46.00	------	------	------	------	------
06/13/83	43.00	------	------	------	------	------
06/20/83	49.00	------	------	------	------	------
06/29/83	57.00	------	------	------	------	------
AVERAGE	51.83					
MINIMUM	18.00					
MAXIMUM	143.00					
STD DEV	27.56					
COEFF OF VAR	.53					
# OF SAMPLES	52	0	0	0	0	0

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
07/12/82	.30	------	------	------	------	------
08/23/82	1.00	------	------	------	------	------
09/03/82	.70	------	------	------	------	------
10/26/82	.30	------	------	------	------	------
11/22/82	.30	------	------	------	------	------
12/20/82	.50	------	------	------	------	------
01/17/83	.20	------	------	------	------	------
02/28/83	.50	------	------	------	------	------
03/07/83	.10	------	------	------	------	------
03/14/83	.10	------	------	------	------	------
03/21/83	.10	------	------	------	------	------
03/28/83	BDL	------	------	------	------	------
04/04/83	BDL	------	------	------	------	------
04/12/83	BDL	------	------	------	------	------
04/18/83	BDL	------	------	------	------	------
4/25/83	BDL	------	------	------	------	------
05/02/83	.10	------	------	------	------	------
05/10/83	.30	------	------	------	------	------
05/16/83	.20	------	------	------	------	------
05/23/83	.30	------	------	------	------	------
05/31/83	.10	------	------	------	------	------
06/07/83	.80	------	------	------	------	------
06/13/83	.10	------	------	------	------	------
06/27/83	------	BDL	------	.80	BDL	4.90
AVERAGE	.27	.50		.80	.25	4.90
MINIMUM	.05	.50		.80	.25	4.90
MAXIMUM	1.00	.50		.80	.25	4.90
STD DEV	.26					
COEFF OF VAR	.97					
# OF SAMPLES	23	1	0	1	1	1

% >
# >

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
07/06/82	105.00	------	------	------	------	------
07/12/82	122.00	------	------	------	------	------
07/19/82	98.00	------	------	------	------	------
07/26/82	102.00	------	------	------	------	------
08/04/82	93.00	------	------	------	------	------
08/12/82	85.00	------	------	------	------	------
08/16/82	98.00	------	------	------	------	------
08/23/82	71.00	------	------	------	------	------
09/01/82	71.00	------	------	------	------	------
09/03/82	82.00	------	------	------	------	------
09/07/82	68.00	------	------	------	------	------
09/20/82	62.00	------	------	------	------	------
09/27/82	43.00	------	------	------	------	------
10/05/82	55.00	------	------	------	------	------
10/13/82	48.00	------	------	------	------	------
/18/82	35.00	------	------	------	------	------
10/25/82	32.00	------	------	------	------	------
11/01/82	35.00	------	------	------	------	------
11/08/82	74.00	------	------	------	------	------
11/15/82	42.00	------	------	------	------	------
11/22/82	40.00	------	------	------	------	------
11/29/82	31.00	------	------	------	------	------
12/06/82	50.00	------	------	------	------	------
12/13/82	31.00	------	------	------	------	------
12/20/82	41.00	------	------	------	------	------
12/27/82	26.00	------	------	------	------	------
01/03/83	24.00	------	------	------	------	------
01/10/83	19.00	------	------	------	------	------
01/17/83	34.00	------	------	------	------	------

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

8/23/8

BELMONT HIGH SERVICE

PAGE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
01/24/83	17.00	------	------	------	------	------
02/03/83	21.00	------	------	------	------	------
02/07/83	26.00	------	------	------	------	------
02/15/83	14.00	------	------	------	------	------
02/23/83	25.00	------	------	------	------	------
02/28/83	24.00	------	------	------	------	------
03/10/83	23.00	------	------	------	------	------
03/15/83	27.00	------	------	------	------	------
03/21/83	36.00	------	------	------	------	------
03/28/83	21.00	------	------	------	------	------
04/04/83	31.00	------	------	------	------	------
04/11/83	32.00	------	------	------	------	------
04/18/83	34.00	------	------	------	------	------
04/25/83	26.00	------	------	------	------	------
05/02/83	31.00	------	------	------	------	------
05/09/83	42.00	------	------	------	------	------
5/16/83	42.00	------	------	------	------	------
05/23/83	40.00	------	------	------	------	------
05/31/83	55.00	------	------	------	------	------
06/06/83	40.00	------	------	------	------	------
06/13/83	52.00	------	------	------	------	------
06/20/83	68.00	------	------	------	------	------
06/27/83	69.00	------	------	------	------	------
AVERAGE	48.33					
MINIMUM	14.00					
MAXIMUM	122.00					
STD DEV	26.57					
COEFF OF VAR	.55					
# OF SAMPLES	52					
% >		0	0	0	0	0
# >						
% <						
# <						

AR301090

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

8/22/85

BELMONT INTAKE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
7/18/83	.40	55.00	------	.90	.70	1.60
9/02/83	.20	------	------	------	------	------
9/13/83	BDL	------	------	------	------	------
1/04/83	BDL	------	------	------	------	------
/01/83	BDL	------	------	------	------	------
/08/83	BDL	------	------	------	------	------
/04/84	.20	------	------	------	------	------
/08/84	.10	------	------	------	------	------
/07/84	BDL	------	------	------	------	------
'18/84	BDL	------	------	------	------	------
25/84	.40	BDL	.50	------	------	------
02/84	.30	------	------	------	------	------
09/84	.10	------	------	------	------	------
.6/84	.40	1.30	BDL	------	------	------
3/84	.10	------	------	------	------	------
0/84	.20	------	------	------	------	------
6/84	.10	------	------	------	------	------
3/84	.30	1.00	BDL	------	------	------
1/84	.30	------	------	------	------	------
/84	.20	------	------	------	------	------
GE	.18	14.45	.50	.90	.70	1.60
JM	.05	.50	.50	.90	.70	1.60
JM	.40	55.00	.50	.90	.70	1.60
U	.13	27.04				
OF VAR	.72	1.87				
AMPLES	20	4	3	1	1	1

AR301091

8/23/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

PAGE

BELMONT INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
07/03/84	.10	2.10	BDL	------	------	------
07/11/84	.30	------	------	------	------	------
07/18/84	.80	------	------	------	------	------
07/25/84	.70	------	------	------	------	------
08/01/84	.20	------	------	------	------	------
08/08/84	BDL	.50	BDL	------	------	------
08/15/84	.60	------	------	------	------	------
08/22/84	.20	------	------	------	------	------
08/29/84	.20	------	------	------	------	------
09/05/84	.20	1.90	BDL	------	------	------
09/12/84	.30	------	------	------	------	------
09/19/84	BDL	------	------	------	------	------
09/26/84	BDL	------	------	------	------	------
10/10/84	.10	2.00	BDL	------	------	------
10/17/84	.30	------	------	------	------	------
10/24/84	.20	------	------	------	------	------
10/31/84	.30	------	------	------	------	------
11/08/84	.30	------	------	------	------	------
11/14/84	BDL	.90	BDL	------	------	------
11/21/84	.40	------	------	------	------	------
11/28/84	BDL	------	------	------	------	------
12/07/84	.30	------	------	------	------	------
12/12/84	.20	1.00	BDL	------	------	------
12/19/84	.20	------	------	------	------	------
12/27/84	.10	------	------	------	------	------
01/02/85	BDL	------	------	------	------	------
01/09/85	BDL	------	------	------	------	------
01/16/85	BDL	------	------	------	------	------
01/23/85	.30	------	------	------	------	------

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
01/31/85	BDL	------	------	------	------	------
02/06/85	.30	------	BDL	------	------	------
02/13/85	BDL	------	------	------	------	------
02/20/85	BDL	------	------	------	------	------
02/27/85	BDL	------	------	------	------	------
03/06/85	BDL	------	BDL	------	------	------
03/13/85	BDL	------	------	------	------	------
03/20/85	BDL	------	------	------	------	------
03/27/85	BDL	------	------	------	------	------
04/03/85	BDL	------	------	------	------	------
04/10/85	BDL	------	------	------	------	------
04/17/85	BDL	------	------	------	------	------
04/24/85	.20	------	------	------	------	------
05/01/85	.30	------	------	------	------	------
05/08/85	BDL	------	------	------	------	------
/15/85	.10	------	------	------	------	------
/22/85	.20	------	------	------	------	------
05/29/85	.30	------	------	------	------	------
06/12/85	.20	------	------	------	------	------
06/19/85	.20	------	------	------	------	------
06/26/85	.40	------	------	------	------	------
AVERAGE	.19	1.40	.50			
MINIMUM	.05	.50	.50			
MAXIMUM	.80	2.10	.50			
STD DEV	.17	.68				
COEFF OF VAR	.90	.49				
# OF SAMPLES	50	6	8	0	0	0

% >
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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

8/22/85

BELMONT HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
07/05/83	76.00	------	------	------	------	------
07/11/83	71.00	------	------	------	------	------
07/18/83	78.00	------	------	------	------	------
07/26/83	93.00	------	------	------	------	------
08/02/83	90.00	------	------	------	------	------
08/08/83	75.00	------	------	------	------	------
08/18/83	89.00	------	------	------	------	------
08/24/83	82.00	------	------	------	------	------
08/31/83	74.00	------	------	------	------	------
09/07/83	70.00	------	------	------	------	------
09/14/83	90.00	------	------	------	------	------
09/20/83	75.00	------	------	------	------	------
09/27/83	64.00	------	------	------	------	------
10/04/83	50.00	------	------	------	------	------
10/12/83	52.00	------	------	------	------	------
10/18/83	51.00	------	------	------	------	------
10/25/83	56.00	------	------	------	------	------
11/01/83	62.00	------	------	------	------	------
11/09/83	41.00	------	------	------	------	------
11/15/83	62.00	------	------	------	------	------
11/22/83	34.00	------	------	------	------	------
11/30/83	32.00	------	------	------	------	------
12/07/83	31.00	------	------	------	------	------
12/14/83	28.00	------	------	------	------	------
12/21/83	20.00	------	------	------	------	------
12/28/83	12.00	------	------	------	------	------
01/04/84	21.00	------	------	------	------	------
01/12/84	18.00	------	------	------	------	------
01/18/84	18.00	------	------	------	------	------

8/22/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

PAGE

BELMONT HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
01/25/84	15.00	------	------	------	------	------
02/01/84	43.00	------	------	------	------	------
02/08/84	38.00	------	------	------	------	------
02/15/84	39.00	------	------	------	------	------
02/23/84	32.00	------	------	------	------	------
02/29/84	28.00	------	------	------	------	------
03/07/84	26.00	------	------	------	------	------
03/14/84	24.00	------	------	------	------	------
03/21/84	30.00	------	------	------	------	------
03/28/84	21.00	------	------	------	------	------
04/18/84	32.00	3.00	BDL	------	------	------
04/25/84	23.00	------	------	------	------	------
05/02/84	36.00	------	------	------	------	------
05/10/84	30.00	14.00	BDL	------	------	------
05/16/84	32.00	------	------	------	------	------
05/23/84	28.00	------	------	------	------	------
05/30/84	57.00	------	------	------	------	------
06/06/84	51.00	1.50	BDL	------	------	------
06/13/84	80.00	------	------	------	------	------
06/20/84	71.00	------	------	------	------	------
06/27/84	73.00	------	------	------	------	------
AVERAGE	48.48	6.17	.50			
MINIMUM	12.00	1.50	.50			
MAXIMUM	93.00	14.00	.50			
STD DEV	23.94	6.83				
COEFF OF VAR	.49	1.11				
# OF SAMPLES	50	3	3	0	0	0

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AR301095

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT! ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
07/05/84	75.00	8.20	BDL	------	------	------
07/12/84	83.00	------	------	------	------	------
07/18/84	89.00	------	------	------	------	------
07/25/84	77.00	------	------	------	------	------
08/01/84	88.00	------	------	------	------	------
08/08/84	89.00	2.30	BDL	------	------	------
08/15/84	87.00	------	------	------	------	------
08/22/84	109.00	------	------	------	------	------
08/29/84	94.00	------	------	------	------	------
09/05/84	84.00	------	BDL	------	------	------
09/12/84	80.00	------	------	------	------	------
09/19/84	92.00	------	------	------	------	------
09/26/84	79.00	------	------	------	------	------
10/03/84	59.00	------	BDL	------	------	------
10/10/84	59.00	------	------	------	------	------
10/17/84	35.00	------	------	------	------	------
10/24/84	68.00	------	------	------	------	------
10/31/84	73.00	------	------	------	------	------
11/07/84	56.00	------	------	------	------	------
11/14/84	48.00	9.00	BDL	------	------	------
11/21/84	31.00	------	------	------	------	------
11/28/84	33.00	------	------	------	------	------
12/06/84	33.00	------	------	------	------	------
12/12/84	37.00	1.60	BDL	------	------	------
12/19/84	26.00	------	------	------	------	------
12/26/84	32.00	------	------	------	------	------
01/02/85	22.00	------	------	------	------	------
01/09/85	31.00	------	------	------	------	------
01/16/85	16.00	------	------	------	------	------

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

8/23/85

BELMONT HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
01/24/85	13.00	------	------	------	------	------
01/30/85	16.00	------	------	------	------	------
02/06/85	27.00	------	------	------	------	------
02/13/85	22.00	------	BDL	------	------	------
02/21/85	25.00	------	------	------	------	------
02/27/85	31.00	------	------	------	------	------
03/06/85	22.00	------	------	------	------	------
03/13/85	26.00	------	BDL	------	------	------
03/20/85	30.00	------	------	------	------	------
03/27/85	20.00	------	------	------	------	------
04/03/85	27.00	------	------	------	------	------
04/10/85	39.00	------	------	------	------	------
04/17/85	34.00	------	------	------	------	------
04/24/85	48.00	------	------	------	------	------
05/01/85	42.00	------	------	------	------	------
08/85	75.00	------	------	------	------	------
15/85	50.00	------	------	------	------	------
05/22/85	58.00	------	------	------	------	------
05/29/85	73.00	------	------	------	------	------
06/05/85	62.00	------	------	------	------	------
06/12/85	66.00	------	------	------	------	------
06/19/85	59.00	------	------	------	------	------
06/26/85	93.00	------	------	------	------	------
AVERAGE	52.75	5.28	.50			
MINIMUM	13.00	1.60	.50			
MAXIMUM	109.00	9.00	.50			
STD DEV	26.41	3.86				
COEFF OF VAR	.50	.73				
# OF SAMPLES	52	4	8	0	0	0
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AR301097

END OF PROGRAM

9/19/05

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
07/19/83	.60	BDL		.80	BDL	BDL
08/02/83	.10					
09/13/83	.20					
10/04/83	BDL					
11/02/83	BDL					
12/08/83	.10					
01/04/84	.20					
02/08/84	.20					
03/07/84	BDL					
04/18/84	.10	.40	BDL			
04/25/84	.20					
05/02/84	.20					
10/04	.20	.70	BDL			
/16/84	.40					
05/23/84	.10					
05/30/84	.30					
06/06/84	.20	2.00	BDL			
06/13/84	.90					
06/20/84	.30					
06/27/84	.20					
AVERAGE	.23	.90	.50	.80	.25	.05
MINIMUM	.05	.40	.50	.80	.25	.05
MAXIMUM	.90	2.00	.50	.80	.25	.05
STD DEV	.20	.74				
COEFF OF VAR	.88	.83				
# OF SAMPLES	20	4	3	1	1	1

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AR301098

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
07/03/84	.30	2.40	BDL			
07/11/84	.70					
07/18/84	.30					
07/25/84	.30					
08/01/84	.30					
08/08/84	.20	.70	BDL			
08/15/84	.70					
08/22/84	.20					
08/29/84	.50					
09/05/84	.20	3.00	BDL			
09/12/84	.40					
09/19/84	BDL					
/26/84	BDL					
./03/84	.10	2.00	BDL			
10/10/84	BDL					
10/17/84	.10					
10/24/84	.20					
10/31/84	.30					
11/07/84	.20					
11/14/84	BDL	1.80	BDL			
11/21/84	BDL					
11/28/84	BDL					
12/06/84	.20					
12/12/84	.20	1.80	BDL			
12/19/84	.20					
12/28/84	.10					
01/02/85	.10					
01/09/85	BDL					
01/16/85	BDL					

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
01/23/85	.30					
01/30/85	.10					
02/06/85	.20		BDL			
02/13/85	BDL					
02/21/85	BDL					
02/28/85	.10					
03/06/85	BDL		BDL			
03/13/85	BDL					
03/20/85	.10					
03/27/85	BDL					
04/03/85	BDL					
04/10/85	.10					
04/17/85	BDL					
04/24/85	.10					
05/01/85	BDL					
05/08/85	BDL					
05/15/85	BDL					
05/22/85	.10					
05/29/85	.50					
06/05/85	.40					
06/12/85	.40					
06/19/85	.20					
06/26/85	BDL					
AVERAGE	.18	1.95	.50			
MINIMUM	.05	.70	.50			
MAXIMUM	.70	3.00	.50			
STD DEV	.16	.76				
COEFF OF VAR	.91	.39				
# OF SAMPLES	52	6	8	0	0	0

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

9/19/85

GL HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
07/07/83	49.00					
07/11/83	50.00					
07/19/83	62.00					
07/25/83	83.00					
08/02/83	60.00					
08/08/83	67.00					
08/17/83	79.00					
08/24/83	64.00					
08/31/83	65.00					
09/07/83	86.00					
09/14/83	86.00					
09/20/83	67.00					
09/27/83	63.00					
/04/83	55.00					
/12/83	53.00					
10/18/83	40.00					
10/25/83	63.00					
11/01/83	53.00					
11/09/83	33.00					
11/15/83	44.00					
11/22/83	43.00					
11/30/83	46.00					
12/07/83	35.00					
12/14/83	33.00					
12/21/83	16.00					
12/28/83	15.00					
01/04/84	16.00					
01/12/84	15.00					
01/10/84	15.00					

AR301101

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

7/19/85

QL HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
01/25/84	11.00					
02/01/84	40.00					
02/08/84	34.00					
02/15/84	34.00					
02/23/84	26.00					
02/29/84	29.00					
03/07/84	22.00					
03/14/84	23.00					
03/21/84	27.00					
03/28/84	22.00					
04/18/84	36.00	3.90	BDL			
04/25/84	27.00					
05/02/84	45.00					
05/10/84	42.00	11.00	BDL			
05/16/84	40.00					
05/23/84	38.00					
05/30/84	75.00					
06/06/84	50.00	1.60	BDL			
06/13/84	56.00					
06/20/84	55.00					
06/27/84	68.00					
AVERAGE	45.48	5.50	.50			
MINIMUM	11.00	1.60	.50			
MAXIMUM	86.00	11.00	.50			
STD DEV	20.30	4.90	.50			
COEFF OF VAR	.45	.89				
# OF SAMPLES	50	3	3	0	0	0
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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	TOTAL THM (ug/1)	ACETONE (ug/1)	DIMETHOXY METHANE (ug/1)	TETRAHYDRO FURAN (ug/1)	MEK (ug/1)	1,4DIOXANE (ug/1)
07/05/84	75.00	4.10	BDL			
07/12/84	63.00					
07/18/84	78.00					
07/25/84	72.00					
08/01/84	70.00					
08/08/84	81.00	2.30	BDL			
08/15/84	65.00					
08/22/84	53.00					
08/29/84	64.00					
09/05/84	68.00	13.00	BDL			
09/12/84	68.00					
09/19/84	57.00					
09/26/84	51.00					
10/03/84	56.00	2.00	BDL			
10/10/84	44.00					
10/17/84	50.00					
10/24/84	53.00					
10/31/84	72.00					
11/07/84	71.00					
11/14/84	29.00	7.30	BDL			
11/21/84	34.00					
11/28/84	29.00					
12/06/84	37.00					
12/12/84	32.00	6.60	BDL			
12/19/84	20.00					
12/26/84	29.00					
01/02/85	31.00					
01/09/85	28.00					
01/16/85	14.00					

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	TOTAL THM (ug/l)	ACETONE (ug/l)	DIMETHOXY METHANE (ug/l)	TETRAHYDRO FURAN (ug/l)	MEK (ug/l)	1,4DIOXANE (ug/l)
01/24/85	12.00					
01/30/85	16.00					
02/06/85	26.00		BDL			
02/13/85	25.00					
02/21/85	25.00					
02/27/85	30.00					
03/06/85	22.00		BDL			
03/13/85	25.00					
03/20/85	28.00					
03/27/85	29.00					
04/03/85	29.00					
04/10/85	37.00					
04/17/85	30.00					
04/24/85	42.00					
15/01/85	34.00					
05/08/85	55.00					
05/15/85	46.00					
05/22/85	63.00					
05/29/85	62.00					
06/05/85	59.00					
06/12/85	63.00					
06/19/85	66.00					
06/26/85	83.00					
AVERAGE	46.48	5.00	.50			
MINIMUM	12.00	2.00	.50			
MAXIMUM	83.00	13.00	.50			
STD DEV	20.02	4.11				
COEFF OF VAR	.43	.70				
# OF SAMPLES	52	6	8	0	0	0

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12/19/85

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
07/12/82	4.80	BDL	BDL	BDL	.20	BDL
08/23/82	6.50	BDL	BDL	BDL	1.80	BDL
09/03/82	4.70	BDL	BDL	BDL	.50	BDL
10/25/82	2.80	BDL	BDL	BDL	.40	BDL
11/22/82	10.00	BDL	BDL	BDL	.50	BDL
12/20/82	2.70	-BDL	BDL	BDL	.40	BDL
01/17/83	6.00	BDL	BDL	BDL	.60	BDL
02/22/83	------	BDL	BDL	BDL	.20	BDL
02/28/83	------	BDL	BDL	.10	.30	BDL
03/07/83	2.60	BDL	BDL	BDL	.10	BDL
03/14/83	1.20	BDL	BDL	BDL	.10	BDL
03/21/83	.70	BDL	BDL	BDL	.10	BDL
03/28/83	.20	BDL	BDL	BDL	.10	BDL
04/04/83	.50	BDL	BDL	BDL	.10	BDL
/11/83	.20	BDL	BDL	BDL	.10	BDL
04/18/83	.30	BDL	BDL	BDL	.10	BDL
04/26/83	.30	BDL	BDL	BDL	.10	BDL
05/02/83	1.80	BDL	BDL	BDL	.10	BDL
05/09/83	1.70	BDL	BDL	BDL	.10	BDL
05/16/83	1.30	BDL	BDL	BDL	.20	BDL
05/23/83	.50	BDL	BDL	BDL	.30	BDL
05/31/83	.90	BDL	BDL	BDL	.20	BDL
06/06/83	.70	BDL	BDL	BDL	.10	BDL
06/13/83	2.10	BDL	BDL	BDL	.30	BDL
AVERAGE	2.39	.05	.05	.05	.29	.05
MINIMUM	.20	.05	.05	.05	.10	.05
MAXIMUM	10.00	.05	.05	.10	1.80	.05
STD DEV	2.55	.00	.00	.01	.36	.00
COEFF OF VAR	1.07	.00	.00	.20	1.22	.00
# OF SAMPLES	22	24	24	24	24	24

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AR301105

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
07/06/82	3.00	BDL	BDL	BDL	108.00	BDL
07/12/82	6.20	BDL	BDL	BDL	77.00	BDL
07/19/82	5.50	BDL	BDL	BDL	58.00	BDL
07/26/82	12.00	BDL	BDL	BDL	60.00	BDL
08/04/82	11.00	BDL	BDL	BDL	59.00	BDL
08/10/82	12.00	BDL	BDL	BDL	59.00	BDL
08/16/82	6.10	BDL	BDL	BDL	71.00	BDL
08/23/82	5.30	BDL	BDL	BDL	46.00	BDL
09/01/82	3.60	BDL	BDL	BDL	52.00	BDL
09/08/82	4.90	BDL	BDL	BDL	50.00	BDL
09/14/82	5.40	BDL	BDL	BDL	47.00	BDL
09/21/82	5.90	BDL	BDL	BDL	37.00	BDL
09/27/82	6.50	BDL	BDL	BDL	30.00	BDL
10/04/82	2.40	BDL	BDL	BDL	42.00	BDL
10/12/82	3.90	BDL	BDL	BDL	32.00	BDL
10/18/82	2.50	BDL	BDL	BDL	23.00	BDL
10/25/82	2.30	BDL	BDL	BDL	23.00	BDL
11/01/82	4.50	BDL	BDL	BDL	24.00	BDL
11/08/82	2.60	BDL	BDL	BDL	47.00	BDL
11/15/82	2.10	BDL	BDL	BDL	39.00	BDL
11/22/82	5.00	BDL	BDL	BDL	29.00	BDL
11/29/82	3.20	BDL	BDL	BDL	20.00	BDL
12/06/82	1.90	BDL	BDL	BDL	40.00	BDL
12/13/82	3.60	BDL	BDL	BDL	23.00	BDL
12/20/82	2.60	BDL	BDL	BDL	42.00	BDL
12/27/82	3.50	BDL	BDL	BDL	19.00	BDL
01/03/83	5.20	BDL	BDL	BDL	16.00	BDL
01/10/83	4.20	BDL	BDL	BDL	18.00	BDL
01/17/83	2.40	BDL	BDL	BDL	30.00	BDL

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
01/24/83	4.70	BDL	BDL	BDL	13.00	BDL
01/31/83	3.40	BDL	BDL	BDL	16.00	BDL
02/08/83	1.60	BDL	BDL	BDL	19.00	BDL
02/15/83	4.00	BDL	BDL	.10	13.00	BDL
02/22/83	2.50	BDL	BDL	BDL	17.00	BDL
02/28/83	.80	BDL	BDL	BDL	16.00	BDL
03/07/83	2.50	BDL	BDL	BDL	20.00	BDL
03/14/83	1.20	BDL	BDL	BDL	22.00	BDL
03/21/83	1.30	BDL	BDL	BDL	35.00	BDL
03/28/83	------	BDL	BDL	.10	15.00	BDL
04/04/83	.80	BDL	BDL	BDL	22.00	BDL
04/11/83	1.00	BDL	BDL	BDL	25.00	BDL
04/18/83	.40	BDL	BDL	BDL	23.00	BDL
04/26/83	.70	BDL	BDL	BDL	20.00	BDL
05/02/83	1.20	BDL	BDL	BDL	17.00	BDL
05/09/83	2.10	BDL	BDL	BDL	14.00	BDL
05/16/83	2.00	BDL	BDL	BDL	16.00	BDL
05/23/83	1.00	BDL	BDL	BDL	29.00	BDL
05/31/83	.90	BDL	BDL	BDL	43.00	BDL
06/06/83	1.10	BDL	BDL	BDL	30.00	BDL
06/13/83	1.60	BDL	BDL	BDL	25.00	BDL
06/20/83	2.10	BDL	BDL	BDL	26.00	BDL
06/29/83	------	BDL	BDL	BDL	36.00	BDL
AVERAGE	3.52	.05	.05	.05	33.33	.05
MINIMUM	.40	.05	.05	.05	13.00	.05
MAXIMUM	12.00	.05	.05	.10	108.00	.05
STD DEV	2.67	.00	.00	.01	19.06	.00
COEFF OF VAR	.76	.00	.00	.19	.57	.00
# OF SAMPLES	50	52	52	52	52	52

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
07/12/82	6.70	BDL	BDL	BDL	.30	BDL
08/23/82	5.10	BDL	BDL	BDL	1.00	BDL
09/03/82	6.10	BDL	BDL	BDL	.60	BDL
10/26/82	1.20	BDL	BDL	BDL	.20	BDL
11/22/82	7.80	BDL	BDL	BDL	.30	BDL
12/20/82	2.10	BDL	BDL	BDL	.40	BDL
01/17/83	3.30	BDL	BDL	BDL	.20	BDL
02/28/83	------	BDL	BDL	.10	.10	BDL
03/07/83	2.10	BDL	BDL	BDL	.10	BDL
03/14/83	1.30	BDL	BDL	BDL	.10	BDL
03/21/83	.50	BDL	BDL	BDL	.10	BDL
03/28/83	.40	BDL	BDL	BDL	.10	BDL
04/04/83	.30	BDL	BDL	BDL	BDL	BDL
04/12/83	.20	BDL	BDL	BDL	BDL	BDL
04/18/83	.40	BDL	BDL	BDL	BDL	BDL
04/25/83	.50	BDL	BDL	BDL	BDL	BDL
05/02/83	2.20	BDL	BDL	BDL	.10	BDL
05/10/83	1.30	BDL	BDL	BDL	.30	BDL
05/16/83	1.30	BDL	BDL	BDL	.20	BDL
05/23/83	1.90	BDL	BDL	BDL	.30	BDL
05/31/83	.60	BDL	BDL	BDL	.10	BDL
06/07/83	.80	BDL	BDL	BDL	.80	BDL
06/13/83	1.50	BDL	BDL	BDL	.10	BDL
AVERAGE	2.16	.05	.05	.05	.24	.05
MINIMUM	.20	.05	.05	.05	.05	.05
MAXIMUM	7.80	.05	.05	.10	1.00	.05
STD DEV	2.23	.00	.00	.01	.25	.00
COEFF OF VAR	1.03	.00	.00	.20	1.02	.00
# OF SAMPLES	22	23	23	23	23	23

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
07/06/82	4.30	BDL	BDL	BDL	82.00	BDL
07/12/82	5.70	BDL	BDL	BDL	91.00	BDL
07/19/82	6.10	BDL	BDL	BDL	68.00	BDL
07/26/82	13.00	BDL	BDL	BDL	70.00	BDL
08/04/82	14.00	BDL	BDL	BDL	61.00	BDL
08/12/82	13.00	BDL	BDL	BDL	57.00	BDL
08/16/82	7.00	BDL	BDL	BDL	74.00	BDL
08/23/82	5.00	BDL	BDL	BDL	46.00	BDL
09/01/82	3.10	BDL	BDL	BDL	46.00	BDL
09/03/82	6.50	BDL	BDL	BDL	51.00	BDL
09/07/82	5.50	BDL	BDL	BDL	40.00	BDL
09/20/82	4.10	BDL	BDL	BDL	34.00	BDL
09/27/82	5.50	BDL	BDL	BDL	23.00	BDL
10/05/82	2.50	BDL	BDL	BDL	32.00	BDL
10/13/82	5.40	BDL	BDL	BDL	30.00	BDL
10/18/82	2.80	BDL	BDL	BDL	20.00	BDL
10/25/82	3.70	BDL	BDL	BDL	18.00	BDL
11/01/82	4.40	BDL	BDL	BDL	19.00	BDL
11/08/82	2.20	BDL	BDL	BDL	46.00	BDL
11/15/82	3.10	BDL	BDL	BDL	30.00	BDL
11/22/82	4.80	BDL	BDL	BDL	27.00	BDL
11/29/82	3.00	BDL	BDL	BDL	18.00	BDL
12/06/82	2.30	BDL	BDL	BDL	37.00	BDL
12/13/82	4.20	BDL	BDL	BDL	20.00	BDL
12/20/82	2.50	BDL	BDL	.10	31.00	BDL
12/27/82	4.10	BDL	BDL	BDL	17.00	BDL
01/03/83	5.00	BDL	BDL	BDL	14.00	BDL
01/10/83	5.30	BDL	BDL	BDL	12.00	BDL
01/17/83	7.00	BDL	BDL	BDL	26.00	BDL

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
01/24/83	6.30	BDL	BDL	BDL	11.00	BDL
02/03/83	3.40	BDL	BDL	BDL	15.00	BDL
02/07/83	2.10	BDL	BDL	BDL	21.00	BDL
02/15/83	6.00	BDL	BDL	.10	10.00	BDL
02/23/83	2.40	BDL	BDL	BDL	18.00	BDL
02/28/83	1.20	BDL	BDL	BDL	17.00	BDL
03/10/83	2.50	BDL	BDL	BDL	15.00	BDL
03/15/83	1.40	BDL	BDL	BDL	20.00	BDL
03/21/83	1.70	BDL	BDL	BDL	27.00	BDL
03/28/83	------	BDL	BDL	.10	14.00	BDL
04/04/83	.80	BDL	BDL	BDL	21.00	BDL
04/11/83	.80	BDL	BDL	BDL	25.00	BDL
04/18/83	.80	BDL	BDL	BDL	29.00	BDL
04/25/83	1.10	BDL	BDL	BDL	18.00	BDL
/02/83	1.60	BDL	BDL	BDL	21.00	BDL
/09/83	2.10	BDL	BDL	BDL	26.00	BDL
05/16/83	3.10	BDL	BDL	BDL	23.00	BDL
05/23/83	.70	BDL	BDL	BDL	22.00	BDL
05/31/83	.80	BDL	BDL	BDL	40.00	BDL
06/06/83	1.50	BDL	BDL	BDL	26.00	BDL
06/13/83	1.60	BDL	BDL	BDL	31.00	BDL
06/20/83	2.40	BDL	BDL	BDL	37.00	BDL
06/27/83	1.50	BDL	BDL	BDL	47.00	BDL
AVERAGE	3.94	.05	.05	.05	32.19	.05
MINIMUM	.70	.05	.05	.05	10.00	.05
MAXIMUM	14.00	.05	.05	.10	91.00	.05
STD DEV	2.99	.00	.00	.01	19.07	.00
COEFF OF VAR	.76	.00	.00	.22	.59	.00
# OF SAMPLES	51	52	52	52	52	52

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
07/19/83	-------	BDL	BDL	BDL	.60	BDL
08/02/83	-------	BDL	BDL	BDL	.10	BDL
09/13/83	1.90	BDL	BDL	BDL	.10	BDL
10/04/83	2.80	BDL	BDL	BDL	BDL	BDL
11/02/83	4.20	BDL	BDL	BDL	BDL	BDL
12/08/83	.50	BDL	BDL	BDL	.10	BDL
01/04/84	1.00	BDL	BDL	.20	.20	BDL
02/08/84	1.20	BDL	BDL	BDL	.20	BDL
03/07/84	.50	BDL	BDL	BDL	BDL	BDL
04/10/84	.80	BDL	BDL	BDL	.10	BDL
04/25/84	1.10	BDL	BDL	BDL	.20	BDL
05/02/84	.50	BDL	BDL	BDL	.20	BDL
5/10/84	-------	BDL	BDL	BDL	.20	BDL
05/16/84	.40	BDL	BDL	BDL	.40	BDL
05/23/84	.20	BDL	BDL	BDL	.10	BDL
05/30/84	BDL	BDL	BDL	BDL	.30	BDL
06/06/84	1.00	BDL	BDL	BDL	.20	BDL
06/13/84	.80	BDL	BDL	BDL	.90	BDL
06/20/84	-------	BDL	BDL	BDL	.30	BDL
06/27/84	BDL	BDL	BDL	BDL	.20	BDL
AVERAGE	1.06	.05	.05	.06	.23	.05
MINIMUM	.05	.05	.05	.05	.05	.05
MAXIMUM	4.20	.05	.05	.20	.90	.05
STD DEV	1.09	.00	.00	.03	.21	.00
COEFF OF VAR	1.03	.00	.00	.50	.91	.00
# OF SAMPLES	16	20	20	20	20	20

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
07/03/84	.40	BDL	BDL	BDL	.30	BDL
07/11/84	.50	BDL	BDL	BDL	.70	BDL
07/18/84	1.40	BDL	BDL	BDL	.30	BDL
07/25/84	.70	BDL	BDL	BDL	.30	BDL
08/01/84	.80	BDL	BDL	BDL	.30	BDL
08/08/84	1.60	BDL	BDL	BDL	.20	BDL
08/15/84	.60	BDL	BDL	BDL	.70	BDL
08/22/84	.60	BDL	BDL	BDL	.20	BDL
08/29/84	.30	BDL	BDL	BDL	.50	BDL
09/05/84	.60	BDL	BDL	BDL	.20	BDL
09/12/84	1.20	BDL	BDL	BDL	.40	BDL
09/19/84	.70	BDL	BDL	BDL	BDL	BDL
09/26/84	.30	BDL	BDL	BDL	BDL	BDL
10/03/84	.50	BDL	BDL	BDL	.10	BDL
10/10/84	.80	BDL	BDL	BDL	BDL	BDL
10/17/84	.40	BDL	BDL	BDL	.10	BDL
10/24/84	.50	BDL	BDL	BDL	.20	BDL
10/31/84	.30	BDL	BDL	BDL	.30	BDL
11/07/84	.50	BDL	BDL	BDL	.20	BDL
11/14/84	.60	BDL	BDL	BDL	BDL	BDL
11/21/84	.90	BDL	BDL	BDL	BDL	BDL
11/28/84	.40	BDL	BDL	BDL	BDL	BDL
12/06/84	.40	BDL	BDL	BDL	.20	BDL
12/12/84	.40	BDL	BDL	BDL	.20	BDL
12/19/84	.40	BDL	BDL	BDL	.20	BDL
12/28/84	.30	BDL	BDL	BDL	.10	BDL
01/02/85	.30	BDL	BDL	BDL	.10	BDL
01/09/85	.10	BDL	BDL	BDL	BDL	BDL
01/16/85	.20	BDL	BDL	BDL	BDL	BDL

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	1 DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
01/23/85	------	BDL	BDL	BDL	.30	BDL
01/30/85	1.60	BDL	BDL	.10	.10	BDL
02/06/85	.60	BDL	BDL	BDL	.20	BDL
02/13/85	.20	BDL	BDL	BDL	BDL	BDL
02/21/85	.40	BDL	BDL	BDL	BDL	BDL
02/28/85	.20	BDL	BDL	BDL	.10	BDL
03/06/85	.20	BDL	BDL	BDL	BDL	BDL
03/13/85	.10	BDL	BDL	BDL	BDL	BDL
03/20/85	.20	BDL	BDL	BDL	.10	BDL
03/27/85	.20	BDL	BDL	BDL	BDL	BDL
04/03/85	.20	BDL	BDL	BDL	BDL	BDL
04/10/85	.90	BDL	BDL	BDL	.10	BDL
04/17/85	.20	BDL	BDL	BDL	BDL	BDL
04/24/85	.30	BDL	BDL	BDL	.10	BDL
05/01/85	.30	BDL	BDL	BDL	BDL	BDL
05/08/85	.20	BDL	BDL	BDL	BDL	BDL
05/15/85	.20	BDL	BDL	BDL	BDL	BDL
05/22/85	.10	BDL	BDL	BDL	.10	BDL
05/29/85	.10	BDL	BDL	BDL	.50	BDL
06/05/85	.30	BDL	BDL	BDL	.40	BDL
06/12/85	.60	BDL	BDL	BDL	.40	BDL
06/19/85	.50	BDL	BDL	BDL	.20	BDL
06/26/85	.40	BDL	BDL	BDL	BDL	BDL
AVERAGE	.48	.05	.05	.05	.10	.05
MINIMUM	.10	.05	.05	.05	.05	.05
MAXIMUM	1.60	.05	.05	.10	.70	.05
STD DEV	.35	.00	.00	.01	.16	.00
COEFF OF VAR	.73	.00	.00	.14	.91	.00
# OF SAMPLES	51	52	52	52	52	52

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END OF PROGRAM

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
07/07/83	------	BDL	BDL	BDL	29.00	BDL
07/11/83	------	BDL	BDL	BDL	34.00	BDL
07/19/83	1.90	BDL	BDL	BDL	35.00	BDL
07/25/83	1.80	BDL	BDL	BDL	51.00	BDL
08/02/83	------	BDL	BDL	BDL	32.00	BDL
08/08/83	------	BDL	BDL	BDL	36.00	BDL
08/17/83	1.00	BDL	BDL	BDL	40.00	BDL
08/24/83	1.20	BDL	BDL	BDL	35.00	BDL
08/31/83	1.00	BDL	BDL	BDL	28.00	BDL
09/07/83	1.50	BDL	BDL	BDL	36.00	BDL
09/14/83	1.40	BDL	BDL	BDL	34.00	BDL
09/20/83	1.70	BDL	BDL	BDL	35.00	BDL
09/27/83	2.20	BDL	BDL	BDL	34.00	BDL
10/04/83	2.70	BDL	BDL	BDL	25.00	BDL
10/12/83	1.90	BDL	BDL	BDL	20.00	BDL
10/18/83	1.70	BDL	BDL	BDL	27.00	BDL
10/25/83	1.50	BDL	BDL	BDL	39.00	BDL
11/01/83	2.70	BDL	BDL	BDL	33.00	BDL
11/09/83	3.40	BDL	BDL	BDL	18.00	BDL
11/15/83	1.20	BDL	BDL	BDL	31.00	BDL
11/22/83	.70	BDL	BDL	BDL	34.00	BDL
11/30/83	.30	BDL	BDL	BDL	38.00	BDL
12/07/83	.40	BDL	BDL	BDL	29.00	BDL
12/14/83	.40	BDL	BDL	BDL	26.00	BDL
12/21/83	.60	BDL	BDL	BDL	12.00	BDL
12/28/83	1.10	BDL	BDL	BDL	12.00	BDL
01/04/84	.60	BDL	BDL	.10	11.00	BDL
01/12/84	.70	BDL	BDL	BDL	11.00	BDL
01/18/84	------	BDL	BDL	BDL	11.00	BDL

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
01/25/84	2.30	BDL	BDL	.10	8.20	BDL
02/01/84	1.30	BDL	BDL	.10	31.00	BDL
02/08/84	.80	BDL	BDL	BDL	28.00	BDL
02/15/84	.90	BDL	BDL	BDL	25.00	BDL
02/23/84	.60	BDL	BDL	BDL	19.00	BDL
02/29/84	.40	BDL	BDL	BDL	22.00	BDL
03/07/84	1.00	BDL	BDL	BDL	15.00	BDL
03/14/84	1.30	BDL	BDL	BDL	17.00	BDL
03/21/84	1.00	BDL	BDL	BDL	18.00	BDL
03/28/84	.80	BDL	BDL	BDL	14.00	BDL
04/18/84	.60	BDL	BDL	BDL	26.00	BDL
04/25/84	.90	BDL	BDL	BDL	17.00	BDL
05/02/84	------	BDL	BDL	BDL	29.00	BDL
05/10/84	------	BDL	BDL	BDL	32.00	BDL
/16/84	.30	BDL	BDL	BDL	26.00	BDL
/23/84	.30	BDL	BDL	BDL	20.00	BDL
05/30/84	.20	BDL	BDL	BDL	59.00	BDL
06/06/84	.50	BDL	BDL	BDL	36.00	BDL
06/13/84	.70	BDL	BDL	BDL	36.00	BDL
06/20/84	------	BDL	BDL	BDL	36.00	BDL
06/27/84	1.20	BDL	BDL	BDL	52.00	BDL
AVERAGE	1.16	.05	.05	.05	28.20	.05
MINIMUM	.20	.05	.05	.05	8.20	.05
MAXIMUM	3.40	.05	.05	.10	59.00	.05
STD DEV	.74	.00	.00	.01	11.27	.00
COEFF OF VAR	.64	.00	.00	.23	.40	.00
# OF SAMPLES	42	50	50	50	50	50

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
07/05/84	.20	BDL	BDL	BDL	59.00	BDL
07/12/84	.60	BDL	BDL	BDL	49.00	BDL
07/18/84	1.50	BDL	BDL	BDL	54.00	BDL
07/25/84	1.00	BDL	BDL	BDL	50.00	.20
08/01/84	.60	BDL	BDL	BDL	57.00	BDL
08/08/84	1.40	BDL	BDL	BDL	56.00	BDL
08/15/84	.50	BDL	BDL	BDL	45.00	BDL
08/22/84	1.20	BDL	BDL	BDL	35.00	BDL
08/29/84	.40	BDL	BDL	BDL	44.00	BDL
09/05/84	.90	BDL	BDL	BDL	46.00	BDL
09/12/84	.80	BDL	BDL	BDL	42.00	BDL
09/19/84	.40	BDL	BDL	BDL	29.00	BDL
09/26/84	.40	BDL	BDL	BDL	23.00	BDL
10/03/84	.70	BDL	BDL	BDL	32.00	BDL
10/10/84	.90	BDL	BDL	BDL	24.00	BDL
10/17/84	.40	BDL	BDL	BDL	21.00	BDL
10/24/84	.30	BDL	BDL	BDL	24.00	BDL
10/31/84	.50	BDL	BDL	BDL	44.00	BDL
11/07/84	.40	BDL	BDL	BDL	51.00	BDL
11/14/84	1.70	BDL	BDL	BDL	17.00	BDL
11/21/84	.50	BDL	BDL	BDL	21.00	BDL
11/28/84	.50	BDL	BDL	BDL	17.00	BDL
12/06/84	.40	BDL	BDL	BDL	24.00	BDL
12/12/84	.30	BDL	BDL	BDL	23.00	BDL
12/19/84	.50	BDL	BDL	BDL	17.00	BDL
12/26/84	.30	BDL	BDL	BDL	18.00	BDL
01/02/85	.40	BDL	BDL	BDL	20.00	BDL
01/09/85	.20	BDL	BDL	BDL	19.00	BDL
01/16/85	.10	BDL	BDL	BDL	11.00	BDL

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

GL HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
01/24/85	1.60	BDL	BDL	BDL	8.50	BDL
01/30/85	.90	BDL	BDL	BDL	12.00	BDL
02/06/85	.30	BDL	BDL	BDL	18.00	BDL
02/13/85	.30	BDL	BDL	BDL	20.00	BDL
02/21/85	.30	BDL	BDL	BDL	19.00	BDL
02/27/85	.30	BDL	BDL	BDL	20.00	BDL
03/06/85	.10	BDL	BDL	BDL	14.00	BDL
03/13/85	.20	BDL	BDL	BDL	13.00	BDL
03/20/85	.20	BDL	BDL	BDL	17.00	BDL
03/27/85	.50	BDL	BDL	BDL	16.00	BDL
04/03/85	.30	BDL	BDL	BDL	16.00	BDL
04/10/85	.40	BDL	BDL	BDL	17.00	BDL
04/17/85	.70	BDL	BDL	BDL	15.00	BDL
04/24/85	.30	BDL	BDL	BDL	21.00	BDL
05/01/85	.50	BDL	BDL	BDL	17.00	BDL
05/08/85	.70	BDL	BDL	BDL	42.00	BDL
05/15/85	BDL	BDL	BDL	BDL	27.00	BDL
05/22/85	.50	BDL	BDL	BDL	40.00	BDL
05/29/85	.60	BDL	BDL	BDL	31.00	BDL
06/05/85	.20	BDL	BDL	BDL	28.00	BDL
06/12/85	.40	BDL	BDL	BDL	31.00	BDL
06/19/85	.40	BDL	BDL	BDL	38.00	BDL
06/26/85	.60	BDL	BDL	BDL	52.00	BDL
AVERAGE	.55	.05	.05	.05	28.93	.05
MINIMUM	.05	.05	.05	.05	8.50	.05
MAXIMUM	1.70	.05	.05	.05	59.00	.20
STD DEV	.38	.00	.00	.00	14.29	.02
COEFF OF VAR	.69	.00	.00	.00	.49	.39
# OF SAMPLES	52	52	52	52	52	52

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
07/18/83	1.20	BDL	BDL	BDL	.40	BDL
08/02/83	------	BDL	BDL	BDL	.20	BDL
09/13/83	.90	BDL	BDL	BDL	BDL	BDL
10/04/83	.70	BDL	BDL	BDL	BDL	BDL
11/01/83	2.80	BDL	BDL	BDL	BDL	BDL
12/08/83	.60	BDL	BDL	BDL	BDL	BDL
01/04/84	.80	BDL	BDL	.10	.20	BDL
02/08/84	.90	BDL	BDL	BDL	.10	BDL
03/07/84	2.00	BDL	BDL	BDL	BDL	BDL
04/18/84	.60	BDL	BDL	BDL	BDL	BDL
04/25/84	.80	BDL	BDL	BDL	.40	BDL
05/02/84	.30	BDL	BDL	BDL	.30	BDL
05/09/84	------	BDL	BDL	BDL	.10	BDL
05/16/84	.30	BDL	BDL	BDL	.40	BDL
05/23/84	.20	BDL	BDL	BDL	.10	BDL
05/30/84	BDL	BDL	BDL	BDL	.20	BDL
06/06/84	.80	BDL	BDL	BDL	.10	BDL
06/13/84	.30	BDL	BDL	BDL	.30	BDL
06/20/84	------	BDL	BDL	BDL	.30	BDL
06/27/84	BDL H.S = 1.00	BDL	BDL	BDL	.20	BDL
AVERAGE	.78	.05	.05	.05	.18	.05
MINIMUM	.05	.05	.05	.05	.05	.05
MAXIMUM	2.80	.05	.05	.10	.40	.05
STD DEV	.70	.00	.00	.01	.13	.00
COEFF OF VAR	.90	.00	.00	.21	.72	.00
# OF SAMPLES	17	20	20	20	20	20

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
07/03/84	BDL	BDL	BDL	BDL	.10	BDL
07/11/84	.40	BDL	BDL	BDL	.30	BDL
07/18/84	1.20	BDL	BDL	BDL	.80	BDL
07/25/84	.70	BDL	BDL	BDL	.70	BDL
08/01/84	.80	BDL	BDL	BDL	.20	BDL
08/08/84	.70	BDL	BDL	BDL	BDL	BDL
08/15/84	.30	BDL	BDL	BDL	.60	BDL
08/22/84	.30	BDL	BDL	BDL	.20	BDL
08/29/84	.20	BDL	BDL	BDL	.20	BDL
09/05/84	.50	BDL	BDL	BDL	.20	BDL
09/12/84	.40	BDL	BDL	BDL	.30	BDL
09/19/84	.30	BDL	BDL	BDL	BDL	BDL
09/26/84	.10	BDL	BDL	BDL	BDL	BDL
10/10/84	1.00	BDL	BDL	BDL	.10	BDL
10/17/84	.40	BDL	BDL	BDL	.30	BDL
10/24/84	.40	BDL	BDL	BDL	.20	BDL
10/31/84	.40	BDL	BDL	BDL	.30	BDL
11/08/84	.30	BDL	BDL	BDL	.30	BDL
11/14/84	.40	BDL	BDL	BDL	BDL	BDL
11/21/84	.80	BDL	BDL	BDL	.40	BDL
11/28/84	.50	BDL	BDL	BDL	BDL	BDL
12/07/84	.20	BDL	BDL	BDL	.30	BDL
12/12/84	.40	BDL	BDL	BDL	.20	BDL
12/19/84	.30	BDL	BDL	BDL	.20	BDL
12/27/84	.10	BDL	BDL	BDL	.10	BDL
01/02/85	.10	BDL	BDL	BDL	BDL	BDL
01/09/85	BDL	BDL	BDL	BDL	BDL	BDL
01/16/85	.20	BDL	BDL	BDL	BDL	BDL
01/23/85	.20	BDL	BDL	BDL	.30	BDL

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
01/31/85	.40	BDL	BDL	BDL	BDL	BDL
02/06/85	.40	BDL	BDL	BDL	.30	BDL
02/13/85	BDL	BDL	BDL	BDL	BDL	BDL
02/20/85	.10	BDL	BDL	BDL	BDL	BDL
02/27/85	.20	BDL	BDL	BDL	BDL	BDL
03/06/85	BDL	BDL	BDL	BDL	BDL	BDL
03/13/85	BDL	BDL	BDL	BDL	BDL	BDL
03/20/85	.10	BDL	BDL	BDL	BDL	BDL
03/27/85	.30	BDL	BDL	BDL	BDL	BDL
04/03/85	.20	BDL	BDL	BDL	BDL	BDL
04/10/85	.50	BDL	BDL	BDL	.10	BDL
04/17/85	.20	BDL	BDL	BDL	BDL	BDL
04/24/85	.20	BDL	BDL	BDL	BDL	BDL
05/01/85	.40	BDL	BDL	BDL	.20	BDL
05/08/85	.30	BDL	BDL	BDL	.30	BDL
05/15/85	.20	BDL	BDL	BDL	BDL	BDL
05/22/85	.20	BDL	BDL	BDL	BDL	.10
05/29/85	.20	BDL	BDL	BDL	.20	BDL
06/12/85	.30	BDL	BDL	BDL	.30	BDL
06/19/85	.10	BDL	BDL	BDL	.20	BDL
06/26/85	3.60	BDL	BDL	BDL	.20	BDL
					.40	BDL
AVERAGE	.39	.05	.05	.05	.19	.05
MINIMUM	.05	.05	.05	.05	.05	.05
MAXIMUM	3.60	.05	.05	.05	.80	.10
STD DEV	.52	.00	.00	.00	.17	.01
COEFF OF VAR	1.33	.00	.00	.00	.90	.14
# OF SAMPLES	50	50	50	50	50	50

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
07/05/83	1.50	BDL	BDL	BDL	54.00	BDL
07/11/83	------	BDL	BDL	BDL	46.00	BDL
07/18/83	2.00	BDL	BDL	BDL	50.00	BDL
07/26/83	2.30	BDL	BDL	BDL	57.00	BDL
08/02/83	------	BDL	BDL	BDL	55.00	BDL
08/08/83	------	BDL	BDL	BDL	42.00	BDL
08/18/83	1.30	BDL	BDL	BDL	57.00	BDL
08/24/83	1.40	BDL	BDL	BDL	44.00	BDL
08/31/83	1.00	BDL	BDL	BDL	35.00	BDL
09/07/83	1.40	BDL	BDL	BDL	24.00	BDL
09/14/83	1.10	BDL	BDL	BDL	37.00	BDL
09/20/83	1.60	BDL	BDL	BDL	38.00	BDL
09/27/83	2.00	BDL	BDL	BDL	30.00	BDL
10/04/83	2.20	BDL	BDL	BDL	22.00	BDL
10/12/83	1.50	BDL	BDL	BDL	18.00	BDL
10/18/83	1.60	BDL	BDL	BDL	24.00	BDL
10/25/83	1.40	BDL	BDL	BDL	28.00	BDL
11/01/83	2.90	BDL	BDL	BDL	37.00	BDL
11/09/83	4.00	BDL	BDL	BDL	21.00	BDL
11/15/83	3.20	BDL	BDL	BDL	38.00	BDL
11/22/83	.50	BDL	BDL	BDL	26.00	BDL
11/30/83	.30	BDL	BDL	BDL	25.00	BDL
12/07/83	.20	BDL	BDL	BDL	24.00	BDL
12/14/83	.50	BDL	BDL	BDL	22.00	BDL
12/21/83	.60	BDL	BDL	BDL	16.00	BDL
12/28/83	.70	BDL	BDL	BDL	10.00	BDL
01/04/84	.80	BDL	BDL	.10	14.00	BDL
01/12/84	.90	BDL	BDL	.10	11.00	BDL
01/18/84	1.70	BDL	BDL	.10	12.00	BDL

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
01/25/84	3.60	BDL	BDL	.10	10.00	BDL
02/01/84	1.20	BDL	BDL	.10	36.00	BDL
02/08/84	.90	BDL	BDL	BDL	32.00	BDL
02/15/84	1.70	BDL	BDL	BDL	31.00	BDL
02/23/84	.70	BDL	BDL	BDL	24.00	BDL
02/29/84	.50	BDL	BDL	BDL	22.00	BDL
03/07/84	1.20	BDL	BDL	BDL	14.00	BDL
03/14/84	1.40	BDL	BDL	BDL	16.00	BDL
03/21/84	1.00	BDL	BDL	BDL	22.00	BDL
03/28/84	.90	BDL	BDL	BDL	14.00	BDL
04/18/84	.60	BDL	BDL	BDL	22.00	BDL
04/25/84	.90	BDL	BDL	BDL	14.00	BDL
05/02/84	------	BDL	BDL	BDL	24.00	BDL
05/10/84	------	BDL	BDL	BDL	22.00	BDL
05/16/84	.40	BDL	BDL	BDL	22.00	BDL
05/23/84	.20	BDL	BDL	BDL	16.00	BDL
05/30/84	.20	BDL	BDL	BDL	44.00	BDL
06/06/84	.60	BDL	BDL	BDL	37.00	BDL
06/13/84	1.00	BDL	BDL	BDL	51.00	BDL
06/20/84	------	BDL	BDL	BDL	47.00	BDL
06/27/84	1.40	BDL	BDL	BDL	57.00	BDL
AVERAGE	1.30	.05	.05	.06	29.88	.05
MINIMUM	.20	.05	.05	.05	10.00	.05
MAXIMUM	4.00	.05	.05	.10	57.00	.05
STD DEV	.88	.00	.00	.02	14.03	.00
COEFF OF VAR	.68	.00	.00	.28	.47	.00
# OF SAMPLES	44	50	50	50	50	50

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
07/05/84	.30	BDL	BDL	BDL	61.00	BDL
07/12/84	1.00	BDL	BDL	BDL	67.00	BDL
07/18/84	1.30	BDL	BDL	BDL	67.00	BDL
07/25/84	1.40	BDL	BDL	BDL	54.00	.30
08/01/84	.60	BDL	BDL	BDL	67.00	BDL
08/08/84	1.00	BDL	BDL	BDL	62.00	BDL
08/15/84	.50	BDL	BDL	BDL	67.00	BDL
08/22/84	------	BDL	BDL	BDL	84.00	BDL
08/29/84	.70	BDL	BDL	BDL	74.00	BDL
09/05/84	4.40	BDL	BDL	BDL	59.00	BDL
09/12/84	.60	BDL	BDL	BDL	56.00	BDL
09/19/84	.60	BDL	BDL	BDL	44.00	BDL
09/26/84	.40	BDL	BDL	BDL	38.00	BDL
10/03/84	.70	BDL	BDL	BDL	31.00	BDL
10/10/84	.90	BDL	BDL	BDL	33.00	BDL
10/17/84	.40	BDL	BDL	BDL	13.00	BDL
10/24/84	.40	BDL	BDL	BDL	31.00	BDL
10/31/84	.50	BDL	BDL	BDL	45.00	BDL
11/07/84	.40	BDL	BDL	BDL	39.00	BDL
11/14/84	.50	BDL	BDL	BDL	31.00	BDL
11/21/84	.60	BDL	BDL	BDL	19.00	BDL
11/28/84	.70	BDL	BDL	BDL	17.00	BDL
12/06/84	.30	BDL	BDL	BDL	22.00	BDL
12/12/84	.30	BDL	BDL	BDL	26.00	BDL
12/19/84	.40	BDL	BDL	BDL	15.00	BDL
12/26/84	.40	BDL	BDL	BDL	21.00	BDL
01/02/85	.50	BDL	BDL	BDL	14.00	BDL
01/09/85	.10	BDL	BDL	BDL	21.00	BDL
01/16/85	.20	BDL	BDL	BDL	11.00	BDL

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	METHYLENE CHLORIDE (ug/l)	11DICHLORO ETHYLENE (ug/l)	11DICHLORO ETHANE (ug/l)	t DICHLORO ETHYLENE (ug/l)	CHLOROFORM (ug/l)	12DICHLORO ETHANE (ug/l)
01/24/85	1.50	BDL	BDL	BDL	8.40	BDL
01/30/85	1.50	BDL	BDL	BDL	11.00	BDL
02/06/85	.30	BDL	BDL	BDL	14.00	BDL
02/13/85	.30	BDL	BDL	BDL	12.00	BDL
02/21/85	.10	BDL	BDL	BDL	18.00	BDL
02/27/85	.20	BDL	BDL	BDL	20.00	BDL
03/06/85	.20	BDL	BDL	BDL	14.00	BDL
03/13/85	.30	BDL	BDL	BDL	14.00	BDL
03/20/85	.20	BDL	BDL	BDL	18.00	BDL
03/27/85	.50	BDL	BDL	BDL	10.00	BDL
04/03/85	.40	BDL	BDL	BDL	14.00	BDL
04/10/85	.70	BDL	BDL	BDL	16.00	BDL
04/17/85	.40	BDL	BDL	BDL	16.00	BDL
04/24/85	.80	BDL	BDL	BDL	27.00	BDL
05/01/85	.30	BDL	BDL	BDL	21.00	BDL
05/08/85	.80	BDL	BDL	BDL	57.00	BDL
05/15/85	.40	BDL	BDL	BDL	28.00	BDL
05/22/85	.40	BDL	BDL	BDL	31.00	BDL
05/29/85	.30	BDL	BDL	BDL	40.00	BDL
06/05/85	.40	BDL	BDL	BDL	25.00	BDL
06/12/85	.80	BDL	BDL	BDL	33.00	BDL
06/19/85	.50	BDL	BDL	BDL	32.00	BDL
06/26/85	.40	BDL	BDL	BDL	59.00	BDL
AVERAGE	.62	.05	.05	.05	33.22	.05
MINIMUM	.10	.05	.05	.05	8.40	.05
MAXIMUM	4.40	.05	.05	.05	84.00	.30
STD DEV	.63	.00	.00	.00	20.42	.03
COEFF OF VAR	1.02	.00	.00	.00	.61	.63
# OF SAMPLES	51	52	52	52	52	52

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	DICLORBROM METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
07/12/82	BDL	BDL	BDL	BDL	BDL	BDL
08/23/82	BDL	BDL	.10	BDL	BDL	BDL
09/03/82	.10	BDL	.10	BDL	BDL	BDL
10/25/82	.10	BDL	.10	BDL	.10	BDL
11/22/82	.20	BDL	.10	BDL	.10	BDL
12/20/82	.10	BDL	.10	BDL	.10	BDL
01/17/83	.10	BDL	.10	BDL	.10	BDL
02/22/83	.10	BDL	BDL	BDL	.10	BDL
02/28/83	.10	BDL	BDL	BDL	.10	BDL
03/07/83	.10	BDL	BDL	BDL	.10	BDL
03/14/83	BDL	BDL	BDL	BDL	BDL	BDL
03/21/83	BDL	BDL	BDL	BDL	.40	BDL
03/28/83	BDL	BDL	BDL	BDL	BDL	BDL
04/04/83	BDL	BDL	BDL	BDL	BDL	BDL
04/11/83	.10	BDL	BDL	BDL	.10	BDL
04/18/83	.10	BDL	BDL	BDL	BDL	BDL
04/26/83	.10	BDL	BDL	BDL	BDL	BDL
05/02/83	.10	BDL	BDL	BDL	BDL	BDL
05/09/83	.10	BDL	BDL	BDL	BDL	BDL
05/16/83	.10	BDL	BDL	BDL	BDL	BDL
05/23/83	BDL	BDL	BDL	BDL	BDL	BDL
05/31/83	BDL	BDL	BDL	BDL	BDL	BDL
06/06/83	.10	BDL	BDL	BDL	BDL	BDL
06/13/83	.10	BDL	BDL	BDL	BDL	BDL
AVERAGE	.09	.05	.06	.05	.08	.05
MINIMUM	.05	.05	.05	.05	.05	.05
MAXIMUM	.20	.05	.10	.05	.40	.05
STD DEV	.03	.00	.02	.00	.07	.00
COEFF OF VAR	.39	.00	.35	.00	.89	.00
# OF SAMPLES	24	24	24	24	24	24

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	DICLORBROM METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
07/06/82	BDL	BDL	29.00	BDL	.60	5.50
07/12/82	BDL	BDL	26.00	BDL	.50	7.30
07/19/82	.10	.10	24.00	BDL	.20	7.90
07/26/82	.10	.10	27.00	BDL	.30	12.00
08/04/82	BDL	.30	27.00	BDL	.30	7.30
08/10/82	BDL	.20	23.00	BDL	.40	8.00
08/16/82	BDL	.10	23.00	BDL	.40	5.30
08/23/82	BDL	.10	19.00	BDL	.20	7.40
09/01/82	.10	.10	23.00	BDL	.20	7.30
09/08/82	.10	.10	23.00	BDL	.20	7.10
9/14/82	.10	.10	24.00	BDL	.20	9.20
09/21/82	.10	.10	23.00	BDL	.20	9.70
09/27/82	BDL	.10	22.00	BDL	.20	11.00
10/04/82	.10	.10	23.00	BDL	.30	9.10
10/12/82	.10	.10	16.00	BDL	.20	6.30
10/18/82	.10	.10	13.00	BDL	.20	4.50
10/25/82	.20	.10	13.00	BDL	.30	4.30
11/01/82	.20	.10	13.00	BDL	.30	6.30
11/08/82	.10	.10	20.00	BDL	.30	6.00
11/15/82	.10	BDL	12.00	BDL	.30	2.70
11/22/82	.10	.10	12.00	BDL	.30	3.60
11/29/82	.10	.10	10.00	BDL	.20	3.20
12/06/82	.10	.10	12.00	BDL	.30	2.20
12/13/82	.10	.10	10.00	BDL	.20	3.40
12/20/82	.20	.10	11.00	BDL	.30	2.60
12/27/82	.10	.10	8.70	BDL	.20	2.50
01/03/83	.10	.10	7.50	BDL	.20	2.20
01/10/83	.10	BDL	7.70	BDL	.30	1.30
01/17/83	.10	BDL	9.00	BDL	.30	2.00

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	DICLORBROM METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
01/24/83	.10	.10	4.40	BDL	.30	1.80
01/31/83	.10	BDL	5.60	BDL	.20	1.40
02/08/83	.10	BDL	6.40	BDL	.20	1.50
02/15/83	.20	.10	4.10	BDL	.20	1.20
02/22/83	.10	BDL	5.00	BDL	.20	2.40
02/28/83	.10	BDL	5.80	BDL	.10	1.60
03/07/83	.10	BDL	7.60	BDL	.20	2.50
03/14/83	BDL	BDL	7.50	BDL	.30	2.40
03/21/83	.10	BDL	9.80	BDL	.40	2.20
03/28/83	.30	.10	7.50	BDL	.20	2.60
04/04/83	.10	BDL	8.00	BDL	.10	2.50
04/11/83	BDL	BDL	7.40	BDL	.20	1.80
04/18/83	.10	BDL	5.50	BDL	.10	1.10
04/26/83	.10	BDL	5.80	BDL	.20	1.60
05/02/83	.20	BDL	8.90	BDL	.10	5.70
05/09/83	BDL	BDL	9.60	BDL	.10	4.50
05/16/83	.40	BDL	10.00	BDL	.30	4.40
05/23/83	.10	BDL	15.00	BDL	.20	4.40
05/31/83	BDL	BDL	12.00	BDL	.20	2.10
06/06/83	BDL	BDL	13.00	BDL	.20	3.20
06/13/83	BDL	BDL	14.00	BDL	.20	4.30
06/20/83	.10	BDL	15.00	BDL	.10	7.10
06/29/83	BDL	BDL	15.00	BDL	.20	5.20
AVERAGE	.11	.08	13.73	.05	.24	4.48
MINIMUM	.05	.05	4.10	.05	.10	1.10
MAXIMUM	.40	.30	29.00	.05	.60	12.00
STD DEV	.06	.04	7.15	.00	.10	2.79
COEFF OF VAR	.61	.53	.52	.00	.40	.62
# OF SAMPLES	52	52	52	52	52	52

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	DICLORBROM METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
07/12/82	BDL	BDL	BDL	BDL	BDL	BDL
08/23/82	BDL	BDL	BDL	BDL	BDL	BDL
09/03/82	.10	BDL	.10	BDL	BDL	BDL
10/26/82	BDL	BDL	.10	BDL	BDL	BDL
11/22/82	.10	BDL	BDL	BDL	.10	BDL
12/20/82	.10	BDL	.10	BDL	BDL	BDL
01/17/83	.10	BDL	BDL	BDL	.10	BDL
02/28/83	.10	BDL	BDL	BDL	.10	BDL
03/07/83	.10	BDL	BDL	BDL	.10	BDL
03/14/83	BDL	BDL	BDL	BDL	BDL	BDL
03/21/83	BDL	BDL	BDL	BDL	.60	BDL
03/28/83	.10	BDL	BDL	BDL	BDL	BDL
04/04/83	BDL	BDL	BDL	BDL	BDL	BDL
04/12/83	BDL	BDL	BDL	BDL	BDL	BDL
04/18/83	.10	BDL	BDL	BDL	BDL	BDL
04/25/83	BDL	BDL	BDL	BDL	BDL	BDL
05/02/83	.10	BDL	BDL	BDL	.10	BDL
05/10/83	BDL	BDL	BDL	BDL	BDL	BDL
05/16/83	BDL	BDL	BDL	BDL	BDL	BDL
05/23/83	.10	BDL	BDL	BDL	BDL	BDL
05/31/83	BDL	BDL	BDL	BDL	BDL	BDL
06/07/83	.10	BDL	BDL	BDL	.10	BDL
06/13/83	.20	BDL	BDL	BDL	BDL	BDL
AVERAGE	.08	.05	.06	.05	.09	.05
MINIMUM	.05	.05	.05	.05	.05	.05
MAXIMUM	.20	.05	.10	.05	.60	.05
STD DEV	.04	.00	.02	.00	.11	.00
COEFF OF VAR	.45	.00	.30	.00	1.31	.00
# OF SAMPLES	23	23	23	23	23	23

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	DICLORBROM METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
07/06/82	.10	.10	19.00	BDL	.30	4.00
07/12/82	BDL	.10	24.00	BDL	.30	6.80
07/19/82	.10	.10	22.00	BDL	.20	7.50
07/26/82	BDL	.20	24.00	BDL	.30	7.60
08/04/82	.10	.10	25.00	BDL	.30	7.10
08/12/82	.10	.20	21.00	BDL	.40	6.90
08/16/82	BDL	.30	20.00	BDL	.30	4.00
08/23/82	BDL	.20	18.00	BDL	.20	6.50
09/01/82	.10	BDL	18.00	BDL	.20	6.20
09/03/82	.10	.20	22.00	BDL	.10	8.20
09/07/82	.10	.10	21.00	BDL	.20	6.50
09/20/82	BDL	.10	19.00	BDL	.10	7.70
09/27/82	.10	.20	14.00	BDL	.40	5.80
10/05/82	.10	.10	16.00	BDL	.30	6.60
10/13/82	.10	.10	13.00	BDL	.20	5.10
10/18/82	.10	.10	11.00	BDL	.20	4.00
10/25/82	.20	.10	11.00	BDL	.40	3.40
11/01/82	.20	.10	10.00	BDL	.20	5.10
11/08/82	.10	.10	21.00	BDL	.30	6.40
11/15/82	.10	BDL	9.90	BDL	.30	2.40
11/22/82	.10	.10	10.00	BDL	.30	3.20
11/29/82	.10	.10	9.50	BDL	.20	3.30
12/06/82	.20	.10	11.00	BDL	.30	1.90
12/13/82	.10	BDL	8.20	BDL	.20	2.60
12/20/82	.30	.10	8.20	BDL	.30	2.20
12/27/82	.10	BDL	6.80	BDL	.20	2.40
01/03/83	.10	.10	7.00	BDL	.20	2.60
01/10/83	.10	BDL	5.20	BDL	.20	2.20
01/17/83	.10	.10	6.80	BDL	.30	1.60

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/82 TO 6/30/83

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	DICLORBROM METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
01/24/83	.20	.10	4.00	BDL	.30	1.70
02/03/83	.20	.10	4.80	BDL	.20	1.30
02/07/83	.10	BDL	4.40	BDL	.10	.70
02/15/83	.30	.20	3.40	BDL	.20	1.00
02/23/83	.20	BDL	4.30	BDL	.20	2.10
02/28/83	.20	BDL	5.20	BDL	.20	1.40
03/10/83	.10	BDL	6.10	BDL	.20	2.20
03/15/83	BDL	BDL	5.60	BDL	.20	1.50
03/21/83	.10	BDL	7.20	BDL	.20	1.40
03/28/83	.10	BDL	5.30	BDL	.20	1.90
04/04/83	.10	BDL	7.60	BDL	.20	2.40
04/11/83	.20	BDL	6.20	BDL	.20	1.00
04/18/83	.10	BDL	4.30	BDL	.10	.40
04/25/83	.30	BDL	5.80	BDL	.20	1.90
05/02/83	.20	BDL	7.40	BDL	.20	2.50
05/09/83	.10	BDL	12.00	BDL	.10	4.40
05/16/83	.40	BDL	13.00	BDL	.20	5.60
05/23/83	.10	BDL	13.00	BDL	.10	4.50
05/31/83	.10	BDL	12.00	BDL	.20	3.00
06/06/83	.10	BDL	11.00	BDL	.20	3.00
06/13/83	BDL	BDL	16.00	BDL	.10	5.30
06/20/83	BDL	BDL	20.00	BDL	.10	9.80
06/27/83	BDL	BDL	17.00	BDL	.20	4.90
AVERAGE	.13	.09	12.06	.05	.22	3.92
MINIMUM	.05	.05	3.40	.05	.10	.40
MAXIMUM	.40	.30	25.00	.05	.40	9.80
STD DEV	.08	.06	6.43	.00	.08	2.35
COEFF OF VAR	.60	.61	.53	.00	.35	.60
# OF SAMPLES	52	52	52	52	52	52

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	DICLORBROM METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
07/18/83	BDL	BDL	BDL	BDL	BDL	BDL
08/02/83	BDL	BDL	BDL	BDL	BDL	BDL
09/13/83	.30	BDL	BDL	BDL	.10	BDL
10/04/83	BDL	BDL	BDL	BDL	BDL	BDL
11/01/83	BDL	BDL	BDL	------	BDL	BDL
12/08/83	BDL	BDL	BDL	BDL	BDL	BDL
01/04/84	.10	BDL	BDL	BDL	.40	BDL
02/08/84	BDL	BDL	BDL	BDL	BDL	BDL
03/07/84	BDL	BDL	BDL	BDL	BDL	BDL
04/18/84	BDL	BDL	BDL	BDL	BDL	BDL
04/25/84	BDL	BDL	BDL	BDL	BDL	BDL
05/02/84	BDL	BDL	BDL	BDL	BDL	BDL
05/09/84	BDL	BDL	BDL	BDL	BDL	BDL
05/16/84	BDL	BDL	BDL	BDL	BDL	BDL
05/23/84	BDL	BDL	BDL	BDL	BDL	BDL
05/30/84	BDL	BDL	BDL	BDL	BDL	BDL
06/06/84	BDL	BDL	BDL	BDL	BDL	BDL
06/13/84	BDL	BDL	BDL	BDL	BDL	BDL
06/20/84	BDL	BDL	BDL	BDL	BDL	BDL
06/27/84	BDL	BDL	BDL	BDL	BDL	BDL
AVERAGE	.06	.05	.05	.05	.07	.05
MINIMUM	.05	.05	.05	.05	.05	.05
MAXIMUM	.30	.05	.05	.05	.40	.05
STD DEV	.06	.00	.00	.00	.08	.00
COEFF OF VAR	.87	.00	.00	.00	1.12	.00
# OF SAMPLES	20	20	20	19	20	20

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	DICLORBROM METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
07/03/84	BDL	BDL	BDL	BDL	BDL	BDL
07/11/84	BDL	BDL	BDL	BDL	BDL	BDL
07/18/84	BDL	BDL	BDL	BDL	BDL	BDL
07/25/84	BDL	BDL	BDL	BDL	BDL	BDL
08/01/84	BDL	BDL	BDL	BDL	BDL	BDL
08/08/84	BDL	BDL	BDL	BDL	BDL	BDL
08/15/84	BDL	BDL	BDL	BDL	BDL	BDL
08/22/84	BDL	BDL	BDL	BDL	BDL	BDL
08/29/84	BDL	BDL	BDL	BDL	BDL	BDL
09/05/84	.20	BDL	BDL	BDL	BDL	BDL
09/12/84	BDL	BDL	BDL	BDL	BDL	BDL
09/19/84	BDL	BDL	BDL	BDL	BDL	BDL
09/26/84	BDL	BDL	BDL	BDL	BDL	BDL
10/10/84	BDL	BDL	BDL	BDL	BDL	BDL
10/17/84	BDL	BDL	BDL	BDL	BDL	BDL
10/24/84	BDL	BDL	BDL	BDL	BDL	BDL
/31/84	BDL	BDL	BDL	BDL	BDL	BDL
11/08/84	BDL	BDL	BDL	BDL	BDL	BDL
11/14/84	BDL	BDL	BDL	BDL	BDL	BDL
11/21/84	BDL	BDL	BDL	BDL	BDL	BDL
11/28/84	BDL	BDL	BDL	BDL	BDL	BDL
12/07/84	BDL	BDL	BDL	BDL	BDL	BDL
12/12/84	BDL	BDL	BDL	BDL	BDL	BDL
12/19/84	.20	BDL	BDL	BDL	BDL	BDL
12/27/84	.10	BDL	BDL	BDL	BDL	BDL
01/02/85	.10	BDL	BDL	BDL	BDL	BDL
01/09/85	BDL	BDL	BDL	BDL	BDL	BDL
01/16/85	BDL	BDL	BDL	BDL	BDL	BDL
01/23/85	BDL	BDL	BDL	BDL	BDL	BDL

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	DICLORBROM METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
01/31/85	BDL	BDL	BDL	BDL	BDL	BDL
02/06/85	.10	BDL	BDL	BDL	BDL	BDL
02/13/85	BDL	BDL	BDL	BDL	BDL	BDL
02/20/85	BDL	BDL	BDL	BDL	BDL	BDL
02/27/85	BDL	BDL	BDL	BDL	BDL	BDL
03/06/85	BDL	BDL	BDL	BDL	BDL	BDL
03/13/85	BDL	BDL	BDL	BDL	BDL	BDL
03/20/85	BDL	BDL	BDL	BDL	BDL	BDL
03/27/85	BDL	BDL	BDL	BDL	BDL	BDL
04/03/85	BDL	BDL	BDL	BDL	BDL	BDL
04/10/85	BDL	BDL	BDL	BDL	BDL	BDL
04/17/85	BDL	BDL	BDL	BDL	BDL	BDL
04/24/85	BDL	BDL	BDL	BDL	BDL	BDL
05/01/85	BDL	BDL	BDL	BDL	BDL	BDL
05/08/85	BDL	BDL	BDL	BDL	BDL	BDL
05/15/85	BDL	BDL	BDL	BDL	BDL	BDL
05/22/85	BDL	BDL	BDL	BDL	BDL	BDL
05/29/85	BDL	BDL	BDL	BDL	BDL	BDL
06/12/85	BDL	BDL	BDL	BDL	BDL	BDL
06/19/85	BDL	BDL	BDL	BDL	BDL	BDL
06/26/85	BDL	BDL	BDL	BDL	BDL	BDL
AVERAGE	.06	.05	.05	.05	.05	.05
MINIMUM	.05	.05	.05	.05	.05	.05
MAXIMUM	.20	.05	.05	.05	.05	.05
STD DEV	.03	.00	.00	.00	.00	.00
COEFF OF VAR	.53	.00	.00	.00	.00	.00
# OF SAMPLES	50	50	50	50	50	50

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	DICLORBROM METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
07/05/83	BDL	BDL	18.00	BDL	.10	4.00
07/11/83	BDL	.10	18.00	BDL	.10	6.60
07/18/83	BDL	BDL	19.00	BDL	.10	8.30
07/26/83	BDL	BDL	26.00	BDL	BDL	9.40
08/02/83	BDL	BDL	24.00	BDL	BDL	10.00
08/08/83	BDL	BDL	23.00	BDL	.30	9.30
08/18/83	BDL	BDL	24.00	BDL	BDL	7.80
08/24/83	BDL	BDL	25.00	BDL	.10	12.00
08/31/83	BDL	BDL	24.00	BDL	.10	13.00
09/07/83	BDL	BDL	24.00	BDL	BDL	19.00
09/14/83	BDL	BDL	33.00	BDL	.20	18.00
09/20/83	BDL	BDL	24.00	BDL	.20	12.00
09/27/83	BDL	BDL	22.00	BDL	.10	11.00
10/04/83	BDL	BDL	17.00	BDL	.10	9.60
10/12/83	BDL	BDL	19.00	BDL	BDL	13.00
10/18/83	BDL	BDL	18.00	BDL	.10	7.80
10/25/83	BDL	BDL	17.00	BDL	.90	9.30
11/01/83	BDL	BDL	18.00	------	.10	6.20
11/09/83	BDL	BDL	13.00	BDL	.10	6.10
11/15/83	.10	BDL	18.00	BDL	.10	5.30
11/22/83	BDL	BDL	7.50	BDL	BDL	.60
11/30/83	BDL	BDL	6.20	BDL	.30	.50
12/07/83	BDL	BDL	6.80	BDL	.20	.40
12/14/83	BDL	BDL	5.60	BDL	.20	.80
12/21/83	BDL	BDL	3.60	BDL	BDL	.40
12/28/83	BDL	BDL	1.80	BDL	.10	.40
01/04/84	.20	BDL	5.50	BDL	.20	1.20
01/12/84	.20	BDL	5.10	BDL	.20	1.50
01/18/84	.20	BDL	4.30	BDL	.30	1.80

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	DICLORBROM METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCI METHANI (ug/
01/25/84	.30	BDL	3.80	BDL	.40	1.40
02/01/84	.20	.40	6.60	BDL	(90)	.80
02/08/84	.20	.20	5.50	BDL	.40	.40
02/15/84	.20	.20	7.50	BDL	.20	.90
02/23/84	BDL	BDL	6.90	BDL	.10	.90
02/29/84	BDL	BDL	5.30	BDL	.10	.60
03/07/84	BDL	BDL	8.30	BDL	.20	3.30
03/14/84	BDL	BDL	6.00	BDL	.20	1.80
03/21/84	BDL	BDL	6.80	BDL	.20	1.20
03/28/84	.20	.20	6.00	BDL	.20	1.40
04/18/84	BDL	BDL	8.10	BDL	.20	1.60
04/25/84	BDL	BDL	7.30	BDL	.20	1.90
05/02/84	BDL	BDL	10.00	BDL	.20	2.30
05/10/84	BDL	BDL	7.20	BDL	.20	1.20
05/16/84	BDL	BDL	8.70	BDL	.10	1.70
05/23/84	BDL	BDL	9.20	BDL	.20	2.50
05/30/84	BDL	BDL	12.00	BDL	BDL	1.40
06/06/84	BDL	BDL	12.00	BDL	.20	2.30
06/13/84	BDL	BDL	21.00	BDL	BDL	7.80
06/20/84	BDL	BDL	18.00	BDL	.20	5.50
06/27/84	BDL	BDL	14.00	BDL	.10	2.00
AVERAGE	.08	.07	13.21	.05	.18	4.96
MINIMUM	.05	.05	1.80	.05	.05	.40
MAXIMUM	.30	.40	33.00	.05	.90	19.00
STD DEV	.06	.06	7.82	.00	.17	4.87
COEFF OF VAR	.80	.90	.59	.00	.94	.98
# OF SAMPLES	50	50	50	49	50	50

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	DICLORBROM METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
07/05/84	BDL	BDL	13.00	BDL	.10	1.30
07/12/84	BDL	BDL	14.00	BDL	.20	1.50
07/18/84	BDL	BDL	18.00	BDL	.10	4.30
07/25/84	BDL	BDL	19.00	BDL	.20	4.40
08/01/84	BDL	BDL	18.00	BDL	.30	2.90
08/08/84	BDL	BDL	21.00	BDL	BDL	6.00
08/15/84	BDL	BDL	17.00	BDL	.10	2.70
08/22/84	BDL	.20	20.00	BDL	.20	5.00
08/29/84	BDL	.20	16.00	BDL	.20	4.20
09/05/84	BDL	.10	19.00	BDL	.20	5.60
09/12/84	BDL	.10	19.00	BDL	.20	5.00
09/19/84	BDL	BDL	30.00	BDL	BDL	16.00
09/26/84	BDL	BDL	24.00	BDL	BDL	15.00
10/03/84	BDL	BDL	19.00	BDL	BDL	8.30
10/10/84	BDL	BDL	19.00	BDL	.20	7.00
10/17/84	BDL	BDL	13.00	BDL	.20	7.80
10/24/84	BDL	BDL	23.00	BDL	BDL	12.00
10/31/84	.20	BDL	22.00	BDL	.30	5.50
11/07/84	BDL	BDL	14.00	BDL	.20	2.80
11/14/84	BDL	BDL	14.00	BDL	BDL	2.90
11/21/84	BDL	BDL	9.00	BDL	BDL	2.90
11/28/84	BDL	BDL	11.00	BDL	BDL	4.60
12/06/84	BDL	BDL	9.10	BDL	BDL	1.80
12/12/84	.20	BDL	9.50	BDL	.20	1.60
12/19/84	.10	BDL	8.60	BDL	.10	2.30
12/26/84	.10	BDL	8.80	BDL	.20	1.90
01/02/85	.20	BDL	6.70	BDL	.20	1.60
01/09/85	BDL	BDL	8.30	BDL	.20	1.60
01/16/85	BDL	BDL	4.00	BDL	.10	1.00

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

BELMONT HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	DICLORBROM METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCL(METHANE (ug/l)
01/24/85	.20	.10	3.50	BDL	.20	1.00
01/30/85	.30	.10	3.70	BDL	.30	1.10
02/06/85	.20	.10	8.90	BDL	.30	3.80
02/13/85	BDL	BDL	6.80	BDL	.30	2.50
02/21/85	BDL	BDL	6.20	BDL	.20	.90
02/27/85	BDL	BDL	8.80	BDL	.20	2.00
03/06/85	BDL	BDL	6.10	BDL	.10	1.70
03/13/85	BDL	BDL	8.90	BDL	.10	3.10
03/20/85	.10	BDL	9.10	BDL	.10	2.70
03/27/85	BDL	BDL	7.20	BDL	BDL	3.20
04/03/85	BDL	BDL	9.60	BDL	.10	3.40
04/10/85	BDL	BDL	14.00	BDL	.10	7.60
04/17/85	BDL	BDL	12.00	BDL	.20	5.40
04/24/85	BDL	BDL	14.00	BDL	.40	5.90
05/01/85	BDL	BDL	15.00	BDL	BDL	6.10
05/08/85	BDL	BDL	16.00	BDL	BDL	2.30
05/15/85	BDL	BDL	16.00	BDL	BDL	5.50
05/22/85	BDL	BDL	20.00	BDL	BDL	6.60
05/29/85	BDL	BDL	23.00	BDL	BDL	9.20
06/05/85	BDL	BDL	22.00	BDL	BDL	13.00
06/12/85	BDL	BDL	21.00	BDL	BDL	11.00
06/19/85	.10	BDL	19.00	BDL	BDL	7.10
06/26/85	BDL	BDL	25.00	BDL	.10	8.10
AVERAGE	.07	.06	14.28	.05	.14	4.86
MINIMUM	.05	.05	3.50	.05	.05	.90
MAXIMUM	.30	.20	30.00	.05	.40	16.00
STD DEV	.06	.03	6.30	.00	.09	3.61
COEFF OF VAR	.76	.53	.44	.00	.65	.74
# OF SAMPLES	52	52	52	52	52	52

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	DICLORBROM METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
07/19/83	BDL	BDL	BDL	BDL	BDL	BDL
08/02/83	BDL	BDL	BDL	BDL	BDL	BDL
09/13/83	BDL	BDL	.10	BDL	2.70	BDL
10/04/83	BDL	BDL	BDL	BDL	BDL	BDL
11/02/83	BDL	BDL	BDL	------	BDL	BDL
12/08/83	BDL	BDL	BDL	BDL	BDL	BDL
01/04/84	.20	BDL	BDL	BDL	.40	BDL
02/08/84	BDL	BDL	BDL	BDL	BDL	BDL
03/07/84	BDL	BDL	BDL	BDL	BDL	BDL
04/18/84	BDL	BDL	BDL	BDL	BDL	BDL
04/25/84	BDL	BDL	BDL	BDL	BDL	BDL
05/02/84	BDL	BDL	BDL	BDL	BDL	BDL
05/10/84	BDL	BDL	BDL	BDL	BDL	BDL
05/16/84	BDL	BDL	BDL	BDL	BDL	BDL
5/23/84	BDL	BDL	BDL	BDL	BDL	BDL
/30/84	BDL	BDL	BDL	BDL	BDL	BDL
06/06/84	BDL	BDL	BDL	BDL	BDL	BDL
06/13/84	BDL	BDL	BDL	BDL	BDL	BDL
06/20/84	BDL	BDL	BDL	BDL	BDL	BDL
06/27/84	BDL	BDL	BDL	BDL	BDL	BDL
AVERAGE	.06	.05	.05	.05	.20	.05
MINIMUM	.05	.05	.05	.05	.05	.05
MAXIMUM	.20	.05	.10	.05	2.70	.05
STD DEV	.03	.00	.01	.00	.59	.00
COEFF OF VAR	.58	.00	.21	.00	2.97	.00
# OF SAMPLES	20	20	20	19	20	20

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

GL HIGH SERVICE

PERIOD FROM 07/01/83 TO 6/30/84

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	DICLORBROM METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
07/07/83	BDL	BDL	15.00	BDL	.10	4.80
07/11/83	BDL	BDL	18.00	BDL	.20	6.00
07/19/83	BDL	BDL	18.00	BDL	.10	7.90
07/25/83	BDL	BDL	24.00	BDL	.10	7.80
08/02/83	BDL	BDL	18.00	BDL	BDL	8.10
08/08/83	BDL	BDL	21.00	BDL	.50	8.90
08/17/83	BDL	BDL	23.00	BDL	.10	7.60
08/24/83	BDL	BDL	20.00	BDL	BDL	8.10
08/31/83	BDL	BDL	22.00	BDL	.20	13.00
09/07/83	BDL	BDL	28.00	BDL	BDL	19.00
09/14/83	BDL	BDL	32.00	BDL	.50	18.00
09/20/83	BDL	BDL	22.00	BDL	.30	11.00
09/27/83	BDL	BDL	20.00	BDL	.30	8.40
10/04/83	BDL	BDL	19.00	BDL	.20	9.50
10/12/83	BDL	BDL	19.00	BDL	.10	12.00
10/18/83	BDL	BDL	15.00	BDL	.10	5.50
10/25/83	BDL	BDL	17.00	BDL	.90	7.20
11/01/83	BDL	BDL	15.00	-------	.30	4.60
11/09/83	BDL	BDL	11.00	BDL	BDL	3.90
11/15/83	BDL	BDL	11.00	BDL	BDL	2.00
11/22/83	BDL	BDL	8.00	BDL	.10	.70
11/30/83	BDL	BDL	7.70	BDL	.20	.60
12/07/83	BDL	BDL	5.60	BDL	.20	.40
12/14/83	BDL	BDL	6.10	BDL	.20	.80
12/21/83	BDL	BDL	3.30	BDL	BDL	.50
12/28/83	BDL	BDL	2.40	BDL	BDL	.30
01/04/84	.20	BDL	4.20	BDL	.30	.80
01/12/84	.10	BDL	2.90	BDL	.20	.70
01/18/84	.20	.30	3.20	BDL	.30	1.00

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QL HIGH SERVICE

PERIOD FROM 07/01/03 TO 6/30/04

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	DICLORBROM METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
01/25/84	.10	.10	2.40	BDL	.30	.70
02/01/84	.20	.20	7.40	BDL	.80	1.40
02/08/84	BDL	.30	5.20	BDL	.30	.60
02/15/84	BDL	.10	7.80	BDL	.10	1.40
02/23/84	BDL	BDL	6.00	BDL	.10	.80
02/29/84	BDL	BDL	6.50	BDL	BDL	.80
03/07/84	BDL	BDL	5.50	BDL	.20	1.10
03/14/84	BDL	BDL	5.20	BDL	.20	1.20
03/21/84	BDL	BDL	7.20	BDL	.20	1.60
03/28/84	BDL	BDL	6.30	BDL	.10	1.50
04/10/84	BDL	BDL	8.80	BDL	.20	1.60
04/25/84	.20	BDL	7.80	BDL	.20	2.00
05/02/84	BDL	BDL	13.00	BDL	.20	2.80
05/10/84	BDL	BDL	9.00	BDL	.20	1.20
05/16/84	BDL	BDL	11.00	BDL	.20	2.50
05/23/84	BDL	BDL	13.00	BDL	.10	4.40
05/30/84	BDL	BDL	14.00	BDL	BDL	2.00
06/06/84	BDL	BDL	12.00	BDL	.20	2.30
06/13/84	BDL	BDL	15.00	BDL	BDL	5.20
06/20/84	BDL	BDL	15.00	BDL	.20	4.30
06/27/84	BDL	BDL	14.00	BDL	.10	1.90
AVERAGE	.06	.07	12.47	.05	.20	4.41
MINIMUM	.05	.05	2.40	.05	.05	.30
MAXIMUM	.20	.30	32.00	.05	.90	19.00
STD DEV	.04	.05	7.19	.00	.17	4.51
COEFF OF VAR	.65	.83	.58	.00	.87	1.02
# OF SAMPLES	50	50	50	49	50	50

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	DICLORBROM METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
07/03/84	BDL	BDL	BDL	BDL	BDL	BDL
07/11/84	BDL	BDL	BDL	BDL	BDL	BDL
07/18/84	BDL	BDL	BDL	BDL	BDL	BDL
07/25/84	BDL	BDL	BDL	BDL	BDL	BDL
08/01/84	BDL	BDL	BDL	BDL	BDL	BDL
08/08/84	BDL	BDL	BDL	BDL	BDL	BDL
08/15/84	BDL	BDL	BDL	BDL	BDL	BDL
08/22/84	BDL	BDL	BDL	BDL	BDL	BDL
08/29/84	BDL	BDL	BDL	BDL	BDL	BDL
09/05/84	BDL	BDL	BDL	BDL	BDL	BDL
09/12/84	BDL	BDL	BDL	BDL	BDL	BDL
09/19/84	BDL	BDL	BDL	BDL	BDL	BDL
09/26/84	BDL	BDL	BDL	BDL	BDL	BDL
10/03/84	BDL	BDL	BDL	BDL	BDL	BDL
1[illegible]0/84	BDL	BDL	BDL	BDL	BDL	BDL
1[illegible].7/84	BDL	BDL	BDL	BDL	BDL	BDL
10/24/84	BDL	BDL	BDL	BDL	BDL	BDL
10/31/84	BDL	BDL	BDL	BDL	BDL	BDL
11/07/84	BDL	BDL	BDL	BDL	BDL	BDL
11/14/84	BDL	BDL	BDL	BDL	BDL	BDL
11/21/84	BDL	BDL	BDL	BDL	BDL	BDL
11/28/84	BDL	BDL	BDL	BDL	BDL	BDL
12/06/84	BDL	BDL	BDL	BDL	BDL	BDL
12/12/84	.10	BDL	BDL	BDL	BDL	BDL
12/19/84	.10	BDL	BDL	BDL	BDL	BDL
12/28/84	.20	BDL	BDL	BDL	BDL	BDL
01/02/85	.10	BDL	BDL	BDL	BDL	BDL
01/09/85	BDL	BDL	BDL	BDL	BDL	BDL
01/16/85	BDL	BDL	BDL	BDL	BDL	BDL

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

QUEEN LANE INTAKE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	DICLORBROM METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
01/23/85	BDL	BDL	BDL	BDL	BDL	BDL
01/30/85	.40	BDL	BDL	BDL	.10	BDL
02/06/85	.10	BDL	BDL	BDL	BDL	BDL
02/13/85	BDL	BDL	BDL	BDL	BDL	BDL
02/21/85	BDL	BDL	BDL	BDL	BDL	BDL
02/28/85	BDL	BDL	BDL	BDL	BDL	BDL
03/06/85	BDL	BDL	BDL	BDL	BDL	BDL
03/13/85	BDL	BDL	BDL	BDL	BDL	BDL
03/20/85	BDL	BDL	BDL	BDL	BDL	BDL
03/27/85	BDL	BDL	BDL	BDL	BDL	BDL
04/03/85	BDL	BDL	BDL	BDL	BDL	BDL
04/10/85	BDL	BDL	BDL	BDL	BDL	BDL
04/17/85	BDL	BDL	BDL	BDL	BDL	BDL
'24/85	.10	BDL	BDL	BDL	BDL	BDL
/01/85	BDL	BDL	BDL	BDL	BDL	BDL
05/08/85	BDL	BDL	BDL	BDL	BDL	BDL
05/15/85	BDL	BDL	BDL	BDL	BDL	BDL
05/22/85	BDL	BDL	BDL	BDL	BDL	BDL
05/29/85	BDL	BDL	BDL	BDL	BDL	BDL
06/05/85	BDL	BDL	BDL	BDL	BDL	BDL
06/12/85	BDL	BDL	BDL	BDL	BDL	BDL
06/19/85	BDL	BDL	BDL	BDL	BDL	BDL
06/26/85	BDL	BDL	BDL	BDL	BDL	BDL
AVERAGE	.06	.05	.05	.05	.05	.05
MINIMUM	.05	.05	.05	.05	.05	.05
MAXIMUM	.40	.05	.05	.05	.10	.05
STD DEV	.05	.00	.00	.00	.01	.00
COEFF OF VAR	.83	.00	.00	.00	.14	.00
# OF SAMPLES	52	52	52	52	52	52

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PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

OL HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	DICLORBROM METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
07/05/84	BDL	BDL	14.00	BDL	.20	2.40
07/12/84	BDL	BDL	12.00	BDL	.10	1.50
07/18/84	BDL	BDL	19.00	BDL	.20	5.30
07/25/84	BDL	.20	18.00	BDL	.20	4.40
08/01/84	BDL	BDL	18.00	BDL	.40	3.30
08/08/84	BDL	BDL	20.00	BDL	BDL	5.20
08/15/84	BDL	BDL	16.00	BDL	.20	4.10
08/22/84	BDL	BDL	14.00	BDL	BDL	4.20
08/29/84	BDL	.20	15.00	BDL	.10	5.10
09/05/84	BDL	BDL	17.00	BDL	BDL	4.90
09/12/84	BDL	.10	19.00	BDL	.20	6.40
09/19/84	BDL	BDL	18.00	BDL	BDL	8.80
09/26/84	BDL	BDL	17.00	BDL	BDL	9.60
10/03/84	BDL	BDL	17.00	BDL	BDL	7.20
10/10/84	BDL	BDL	14.00	BDL	.20	5.50
10/17/84	BDL	.10	18.00	BDL	.20	9.90
10/24/84	BDL	BDL	19.00	BDL	BDL	8.80
10/31/84	.10	BDL	22.00	BDL	.40	5.70
11/07/84	BDL	BDL	17.00	BDL	.10	3.20
11/14/84	BDL	BDL	9.20	BDL	.10	2.40
11/21/84	BDL	BDL	9.50	BDL	BDL	3.40
11/28/84	BDL	BDL	8.70	BDL	.10	3.00
12/06/84	BDL	BDL	10.00	BDL	BDL	2.70
12/12/84	.20	BDL	7.30	BDL	.20	1.30
12/19/84	.20	BDL	8.10	BDL	.20	2.90
12/26/84	.10	BDL	8.00	BDL	.10	2.40
1/02/85	.20	BDL	8.40	BDL	.20	2.40
1/09/85	BDL	BDL	7.40	BDL	.10	1.90
1/16/85	BDL	.10	3.10	BDL	BDL	.40

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT1 ***

OL HIGH SERVICE

PERIOD FROM 07/01/84 TO 6/30/85

DATE	111TRICLOR ETHANE (ug/l)	CARBON TET (ug/l)	DICLORBROM METHANE (ug/l)	12DICHLORO PROPANE (ug/l)	112TRICLOR ETHYLENE (ug/l)	DIBROMCLOR METHANE (ug/l)
01/24/85	BDL	BDL	2.60	BDL	.20	.60
01/30/85	.20	BDL	3.30	BDL	.30	.80
02/06/85	.20	.10	6.10	BDL	.50	1.80
02/13/85	.10	.10	4.20	BDL	.50	1.00
02/21/85	BDL	BDL	5.10	BDL	.20	.70
02/27/85	BDL	BDL	8.90	BDL	.20	1.60
03/06/85	BDL	BDL	6.30	BDL	.10	1.40
03/13/85	BDL	BDL	8.20	BDL	.20	3.30
03/20/85	BDL	BDL	8.20	BDL	.10	2.80
03/27/85	BDL	BDL	9.40	BDL	.10	3.30
04/03/85	BDL	BDL	9.40	BDL	.10	3.10
04/10/85	BDL	BDL	13.00	BDL	BDL	6.50
04/17/85	BDL	BDL	11.00	BDL	.20	4.10
04/24/85	BDL	BDL	14.00	BDL	.20	6.00
05/01/85	BDL	BDL	12.00	BDL	BDL	4.80
05/08/85	BDL	BDL	12.00	BDL	BDL	1.10
05/15/85	BDL	BDL	14.00	BDL	BDL	5.40
05/22/85	BDL	BDL	18.00	BDL	BDL	5.20
05/29/85	BDL	BDL	20.00	BDL	BDL	9.70
06/05/85	BDL	BDL	20.00	BDL	BDL	9.70
6/12/85	BDL	BDL	21.00	BDL	BDL	9.30
6/19/85	BDL	BDL	20.00	BDL	.10	7.20
6/26/85	BDL	BDL	23.00	BDL	BDL	7.10
VERAGE	.07	.06	12.97	.05	.14	4.32
INIMUM	.05	.05	2.60	.05	.05	.40
AXIMUM	.20	.20	23.00	.05	.50	9.90
TD DEV	.05	.03	5.54	.00	.11	2.72
OEFF OF VAR	.67	.53	.43	.00	.79	.63
OF SAMPLES	52	52	52	52	52	52

% >
# >

AR301145

P

APPENDIX P

WATER TREATMENT PLANT DESCRIPTIONS

ERM Environmental Resources Management

Interoffice Correspondence

From: Raymond Lees

Date: 7 July 1987

To: CIBA-GEIGY - Tysons File
W.O. #272-13

Subject: Norristown Water Treatment Plant Field Trip

The plant layout consists of the old and new plant facilities. Major chemical additions to the influent water consists of

- o Ferric chloride for coagulation
- o Lime for pH control
- o Chlorine as disinfectant

There are two influent water intakes on the Schuylkill River:

(1) The intake flume located on the northern bank of the Schuylkill River

(2) The intake crib located in the middle of the Schuylkill River, upstream of the flume intake

Both intake points are used regularly. However, during a rainfall the intake crib is utilized more than the intake flume. The reason is due to Stoney Creek (upstream on the northside) which contributes high turbidity to the intake flume.

The total average influent flow is 12 to 13 million gallons per day. Powder activated carbon (PAC) is added in the influent at location "B" in the process flow scheme (see attachment). The PAC is added before the flocculator which divides the flow to the old and new plant. PAC dosage concentrations will be supplied by the plant engineer.

The new plant flow scheme consist of a flocculating unit, followed by a clarifier, then granular activated carbon (GAC) filters (see attachment)

- o The sludge from the clarifier is disposed in on-site lagoons. Solids in the lagoon are trucked away 5 to 6 times per year. Supernatant (water on top of sludge) is drained to the Schuylkill river.

- o There are four (4) GAC units which were originally sand filters. All 4 units are operated in parallel mode. Each unit consist of 1 foot of sand overlayed by 2 feet of carbon. The GAC is serviced every two years by SECA. The surface area per unit is 25 square feet with the ability to process approximately 1.75×10^6 gallons per

CIBA-GEIGY - Tysons File
W.O. #272-13
7 July 1987

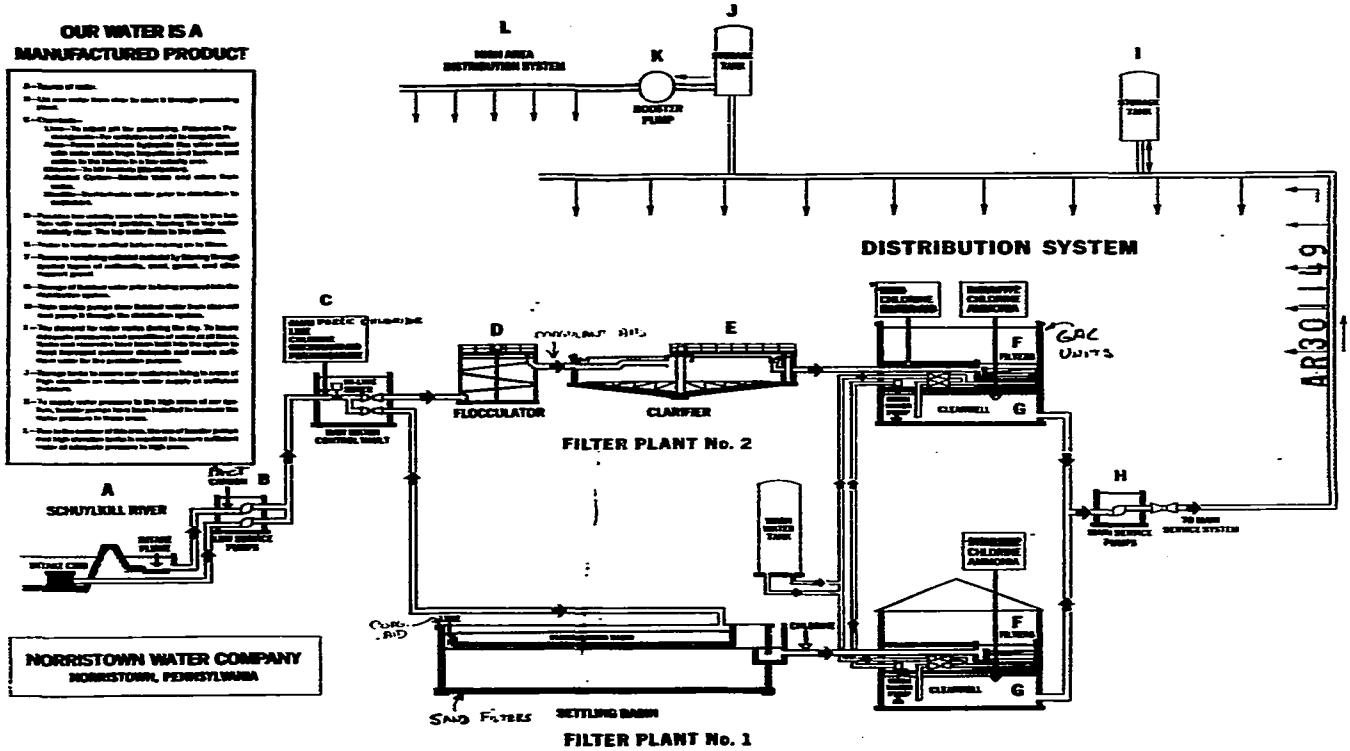
day. Total flow capability through all 4 GAC units is 6 to 8 x 10^6 gallons per day.

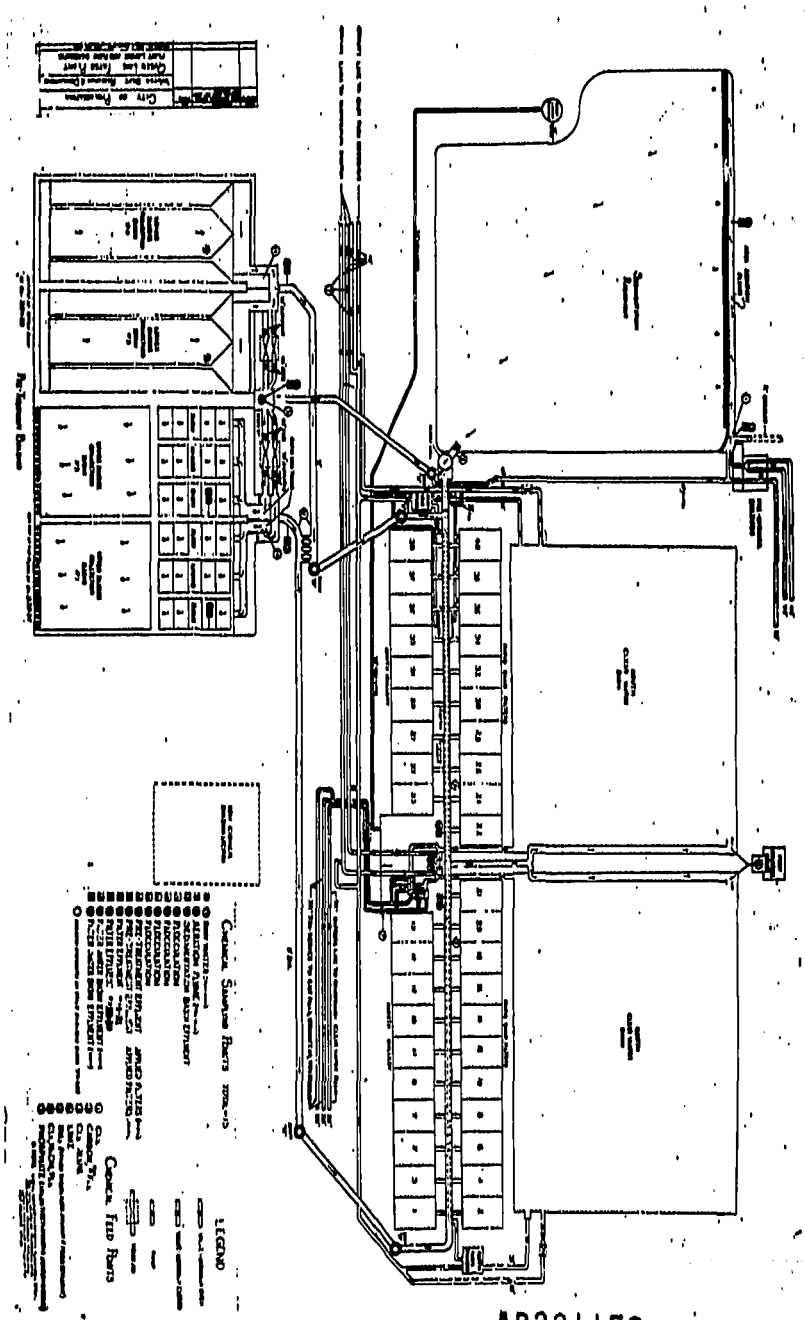
The old plant flow shown consists of a flocculator (the same unit used by the new plant), followed by sand filters (see attachments).

- There are twelve (12) multi-media sand filters (4 units were rebuilt the last two years). The surface dimensions per unit are 12 feet by 12 feet. Each unit has one foot of graded stone overlayed by 2 feet of sand for a total bed depth of 3 feet. Filters are operated in parallel mode. Each unit can handle 600,000 gallons per day. Total combined flow through the sand filters is approximately 6 x 10^6 gallons per day.

The Norristown water plant does not monitor for 1,2,3 Trichloropropane. The plant engineer will send organic compound monitoring reports for the last two years.

RL/aek


OUR WATER IS A
MANUFACTURED PRODUCT
L
MAIN AREA
DISTRIBUTION SYSTEM
K
BOOSTER
PUMP
J
I
DISTRIBUTION SYSTEM
C
D
E
FLOCCULATOR
CLARIFIER
FILTER PLANT No. 2
F
G
GAC
UNITS
H
A
SCHUYLKILL RIVER
B
NORRISTOWN WATER COMPANY
NORRISTOWN, PENNSYLVANIA
SAND FILTERS
SETTLING BASIN
FILTER PLANT No. 1
AR301149



AR301150

ERM Environmental Resources Management

Interoffice Correspondence

From: Raymond Lees RGL

Date: 14 July 1987

To: CIBA-GEIGY - Tysons File
W.O. #272-13

Subject: Philadelphia
Belmont Water
Treatment Plant
Field Trip

The facility is divided into North (built in 1940s) and South (built in 1960s) plants. Average influent flow is approximately 60 x 10^6 gallons/day (see attachments). Both plants process roughly the same quantity of water. Major chemicals added after the raw water basins consist of:

- o Chlorine as disinfectant
- o Lime for pH control
- o Ferric chloride for coagulation
- o Zinc phosphate for corrosion control
- o Ammonia as post-disinfectant

Powder activated carbon (PAC) is used only one or two days per year for either odor and taste (algae) control or organic spill control. The PAC can be added at the raw water intake pumps, after the raw water basins (where chemicals are added), or after the clarifiers prior to the sand filters. The majority of time, the PAC is added at the raw water intake pumps, which facilitates organic removal and PAC removal (by settling) in the raw water basins. The PAC slurry concentration in the storage tank is 1 pound per gallon. The carbon dosage will depend on severity and strength of spill or taste and odor concentration. The range of carbon dosages used is between 25 and 400 pounds per million gallons water treated, with the average being approximately 100 pounds per million gallons.

The intake is located on the west side of the Schuylkill River downstream of the Queens Lane intake. Average flow is approximately 60 million gallons per day with a water loss of 200 million gallons per month primarily due to sand filter backwashing, flow metering losses, sludge, etc. The water is pumped to two raw water basins operated in series mode. Each basin has a 42 million gallon capacity with a 9 hour retention time. They are operated in series to maximize settling capability.

Both the North and South plants have the same conventional treatment scheme. Following the raw water basins, the flow is split into the two plants. Flocculators are followed by clarifiers (two), then sand filters.

There are 26 sand filters: 8 dual media filters with 4 gpm/ft^2 loading capacities and 18 rapid sand filters with a gpm/ft^2

loading capacities. The rapid sand filters will eventually be upgraded to dual media. The surface are of each filter is 20 feet wide by 24 feet long. Backwash water and clarifier sludge is sent to the sanitary sewers.

The majority of the time the Belmont plant has the capacity to supply its demand. However, during high water demand or cut-back because of a spill, supplement is received from the East Park Reservoir, which is supplied by the Baxter (Torresdale) and Queen Lane Plants. The Belmont Plant only supplies water to the Philadelphia area, in particular the western section.

Water quality data on 1,2,3 Trichloropropane is attached.

MEMORANDUM

CITY OF PHILADELPHIA

TO : Jung Choi, Project Engineer, Projects Section

DATE 7/1/87

FROM : James P. Santo, Supervisor, Organics Laboratory, BLS

SUBJECT: ANALYSIS OF SCHUYLKILL SYSTEM SAMPLES FOR 1,2,3-TRICHLOROPROPANE

On June 10, 1987, water samples of Belmont and Queen Lane intake and high service were taken for 1,2,3-trichloropropane analysis. The results are listed in the following table in ug/l (PPB).

SITE	CONCENTRATION (PPB)
Belmont HS	0.1
Belmont Intake	0.2
Queen Lane HS	0.2
Queen Lane Intake	0.1

James P. Santo

James P. Santo

JPS/kn

cc: W & WW (2)
File

AR301153

L-1 (Rev. 3/59)

7/ 8/87

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT3 ***

123TRICHLOROPROPANE (ug/l)

PERIOD FROM 07/01/86 TO 06/30/87

	QUEEN LANE SCHUYL. DIP	QUEEN LANE HIGH SERVICE	BELMONT SCHUYL. DIP	BELMONT HIGH SERVICE
07/23/86	BDL	------	------	------
07/24/86	------	------	BDL	------
07/25/86	------	BDL	------	BDL
07/30/86	BDL	BDL	BDL	BDL
08/06/86	BDL	BDL	BDL	BDL
08/13/86	BDL	------	BDL	------
08/14/86	------	BDL	------	BDL
08/20/86	BDL	BDL	BDL	BDL
08/27/86	BDL	BDL	BDL	BDL
09/03/86	BDL	BDL	BDL	.10
09/10/86	BDL	BDL	BDL	BDL
09/14/86	------	BDL	------	BDL
09/17/86	.10	.10	------	BDL
09/19/86	------	------	.10	------
09/24/86	BDL	BDL	BDL	BDL
10/01/86	BDL	BDL	BDL	BDL
10/08/86	BDL	BDL	BDL	BDL
10/16/86	.10	BDL	BDL	BDL
10/22/86	BDL	BDL	BDL	BDL
10/29/86	BDL	.10	BDL	.40
11/05/86	BDL	.10	BDL	.10
11/12/86	BDL	BDL	BDL	BDL
11/20/86	BDL	BDL	BDL	BDL
11/26/86	.20	.10	------	.30
12/03/86	BDL	------	------	------
12/04/86	------	------	.10	------
12/10/86	.20	.20	------	.30
12/12/86	------	------	BDL	------
12/17/86	.20	.20	.10	BDL
12/31/86	.40	.40	.40	.40
01/07/87	.40	.50	BDL	.50
01/14/87	.40	.20	.30	.40
01/21/87	.30	.20	------	.60
01/22/87	------	------	.80	------
01/28/87	.60	.10	------	.60

DIP = Dip Sample from River

AR301154

7/ 8/87

PHILADELPHIA WATER DEPARTMENT
BUREAU OF LABORATORY SERVICES
*** WATER QUALITY REPORT3 ***

123TRICHLOROPROPANE (ug/l)

PERIOD FROM 07/01/86 TO 06/30/87

	QUEEN LANE SCHUYL. DIP	QUEEN LANE HIGH SERVICE	BELMONT SCHUYL. DIP	BELMONT HIGH SERVICE
02/05/87	.40	.30	.60	.30
02/11/87	.50	.30	.40	.60
02/19/87	.50	.50	.50	.60
02/25/87	.60	.40	.60	.10
03/04/87	.30	.40	.40	.70
03/11/87	.30	.30	.40	.40
03/18/87	.20	.30	.20	.20
03/25/87	.20	.30	.50	.50
04/02/87	.40	.30	.30	.40
04/08/87	.30	.20	.40	.50
04/16/87	BDL	.20	BDL	.30
04/22/87	.40	.10	.20	.30
04/29/87	.30	.20	.30	.40
05/06/87	.40	.30	.40	.40
05/13/87	.50	.40	.50	.50
05/20/87	.70	.70	BDL	.70
05/27/87	------	.30	.50	.30
05/28/87	.30	------	------	------
06/03/87	.30	.30	.30	.30
06/10/87	.10	.10	.10	.10
06/17/87	.10	.10	.10	.10
06/24/87	.10	.10	.20	.10
AVERAGE	.22	.19	.21	.26
MINIMUM	.05	.05	.05	.05
MAXIMUM	.70	.70	.80	.70
STD DEV	.19	.15	.20	.21
COEFF OF VAR	.83	.82	.95	.83
# OF SAMPLES	48	48	46	48

A1:

	A	BC	D	E	F	G	H	I
2				BELMONT WATER TREATMENT PLANT				
3				WATER MASS BALANCE				
4				TOTAL WATER THROUGH PLANT (MG)				→ RAW WATER PUMPAGE
5								
6	MONTH		1982	1983	1984	1985	1986	1987
7	JAN		1994.90	1847.05	1997.65	1885.05	1745.65	1988.15
8	FEB		1795.61	1635.17	1835.61	1824.28	1652.40	1947.27
9	MAR		1821.15	1812.95	1861.85	1988.65	1855.80	2050.35
10	APR		1771.53	1733.03	1774.53	1692.93	1739.63	1888.63
11	MAY		1754.75	1917.45	1900.35	1607.75	1935.95	2113.05
12	JUN		1852.13	1992.43	2104.30	1754.73	1975.83	0.00
13	JUL		2075.95	2283.45	?	2018.65	2191.85	0.00
14	AUG		2011.55	2216.35	?	1966.75	1961.55	0.00
15	SEP		1906.93	1945.93	1893.43	1506.23	1828.73	0.00
16	OCT		1823.55	1962.25	1896.95	1796.35	1724.25	0.00
17	NOV		1806.86	1842.73	1760.23	1669.63	1713.63	0.00
18	DEC		1900.95	1916.94	1769.05	1741.00	1826.25	0.00
19								
20	TOTAL		22515.86	23105.73	18793.95	21452.00	22161.52	9987.45
								CALC

AR301156

BELMONT WATER TREATMENT PLANT

METERED EFFLUENT - FISCAL 1977 - 1986

YEAR	TOTAL PRODUCTION (MILLION GALLONS)	AVERAGE DAY (MILLION GALLONS)	MAXIMUM DAY (MILLION GALLONS)
1977	26,706.3	73.2	89.3
1978	25,271.4	71.3	87.3
1979	22,683.9	62.1	86.9
1980	22,378.7	61.1	94.7
1981	22,564.3	62.0	95.1
1982	22,045.3	59.8	79.6
1983	21,362.8	58.5	75.5
1984	21,364.9	58.5	86.7
1985	20,181.1	55.3	77.5
1986	19,887.1	54.5	68.1

~~12-3% LOSS CAN'T ACCOUNT [illegible].~~

APPROX 200 x 10^6 GALLON / MO. USED IN PLANT USE (I.E. BACKWASH of SAND FILTERS.)

ERM Environmental Resources Management

Interoffice Correspondence

From: Raymond Lees REL

Date: 15 July 1987

To: CIBA-GEIGY - Tyson File
W.O. #272-13

Subject: Philadelphia
Queen Lane Water
Treatment Plant
Field Trip

The plant has conventional treatment with an average influent flow of approximately 120 million gallons per day (see attachments). Water losses incurred between the influent and distribution are due to evaporation losses in the raw water basins, metering losses, sand filter backwashing, etc. Approximately 5 to 7% of raw water is used for backwashing of the filters, with each filter washed daily for 6 to 7 minutes. Backwash water is sent to the sanitary sewers.

Some of the chemicals added to the raw water are:

- Lime for pH control
- Ferric chloride for coagulation
- Sodium hypochlorite as disinfectant (first year of use)
- Ammonia as post-disinfectant
- Zinc phosphate for corrosion control

Powder activated carbon (PAC) is used only a few days per year for spills and odor and taste control. The PAC is usually added after the raw water basins. It may also be added prior to the raw waste basins. Most of the carbon settles out in the flocculator/clarifier system. PAC slurry concentration in the storage tank is 1 pound per gallon, with dosages ranging from 25 to 400 pounds per million gallons treated. The average dosage is 100 pounds per million gallons treated. The dosage will vary depending on the severity of the spill or taste and odor concentration.

The raw water intake is located on the east side of the Schuylkill River, approximately 1 mile downstream of the Wissahickon Creek. During high flows, intake may be approximately 95% river water and 5% creek water. Conversely, during low river flows, the ratio may be 60/40. The creek water is monitored daily and taste and odor at the plant are monitored on an hourly basis. Problems with algae growth are not as severe as experienced by the Belmont Plant. The reason is the influence of the Wissahickon Creek which retards algae growth directly downstream of its confluence with the Schuylkill River.

The raw water basin has a 177 million gallon capacity, with a retention time of 34 hours (see attachment). If they had to shut down the river intake to the plant, the basin could supply approximately 1/2 day of demand. Flocculators and clarifiers follow the raw water basin (see attachment). Sludge from the

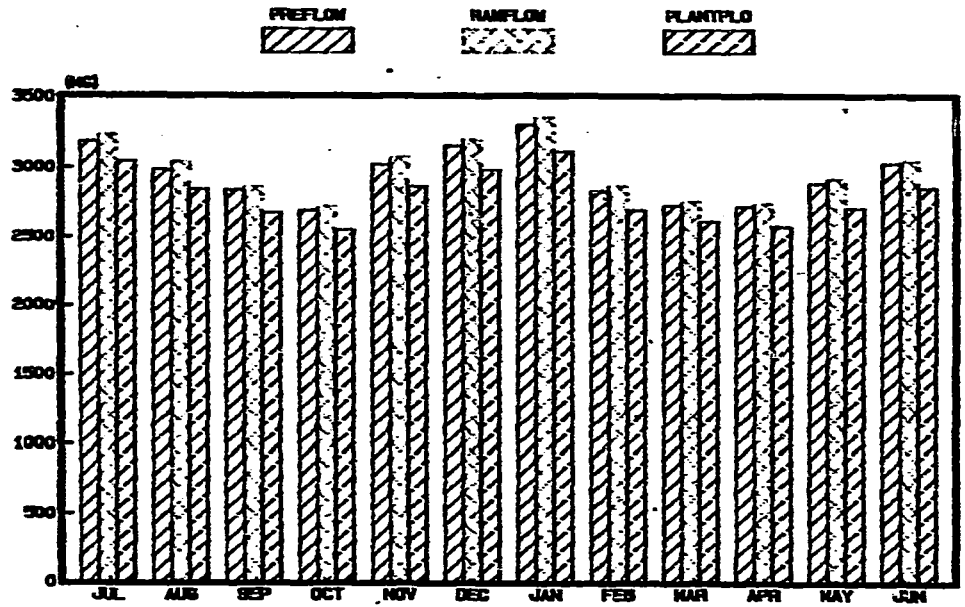
clarifiers is lagooned east of the units. Some sludge is disposed to the sanitary sewers.

After the clarifiers the flow is directed to rapid sand filters. These are 40 units operated in parallel mode, each having a surface area of 1000 ft^2. Flows handled by each unit are normally 2 to 2.5 million gallons per day with an upper flow capability of 5 million gallons per day.

The consumers in the vicinity of the plant are solely supplied by the Queen Lane distribution. However, distant distribution points are supplied by a mixture from the Baxter (Torresdale) and Queen Lane Plants. The Baxter Plant's influent raw water is from the Delaware River.

QUEEN LANE WATER TREATMENT PLANT

FLOW DATA FISCAL YEAR 1986



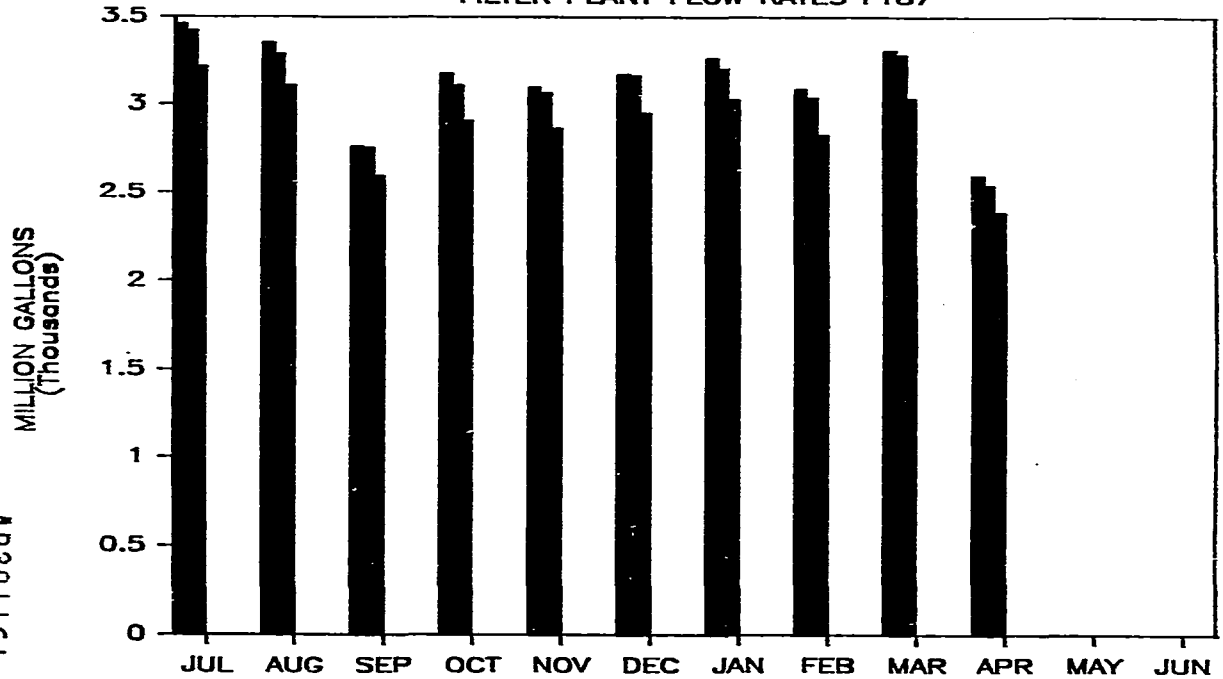
MONTHLY PRE-TREATMENT, RAW WATER PUMPAGE, AND PLANT EFFLUENT FLOWS

RAW WATER	3226	3099	2861	2721	3072	3194	3356	2869	2759	2741	2917	3048
PRE-TREAT.	3179	2980	2838	2690	3020	3152	3302	2828	2727	2719	2887	3029
PL. EFF.	3044	2846	2676	2553	2868	2986	3114	2696	2612	2576	2711	2861

AR301160

QUEEN LANE WATER TREATMENT PLANT

FILTER PLANT FLOW RATES FY87



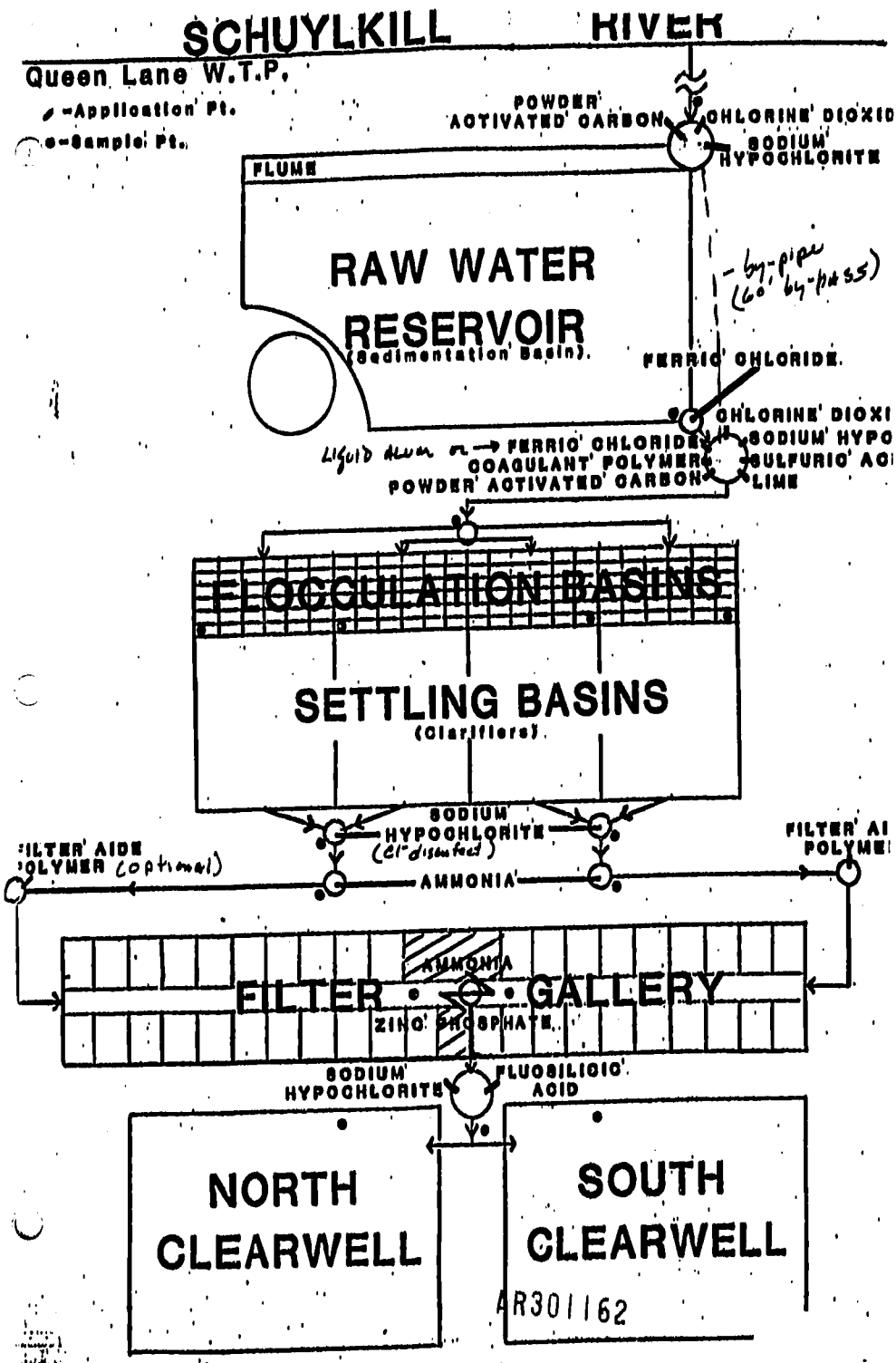
NOT A FULL YEAR

LOSSES - EVAP.

AT FLOC-sed. basins

BACKWASH LOSS

AR301161


SCHUYLKILL RIVER
Queen Lane W.T.P.
-Application Pt.
o-Sample Pt.
POWDER ACTIVATED CARBON
CHLORINE DIOXID
SODIUM HYPOCHLORITE
FLUME
RAW WATER RESERVOIR
(Sedimentation Basin).
- by-pipe (60' by-pass)
FERRIC CHLORIDE.
CHLORINE DIOXI
SODIUM HYPO
SULFURIC AC
LIME
Liquid alum or → FERRIC CHLORIDE
COAGULANT POLYMER
POWDER ACTIVATED CARBON
FLOCCULATION BASINS
SETTLING BASINS
(Clarifiers).
SODIUM HYPOCHLORITE
(Cl2 disinfect)
FILTER AIDE POLYMER (optional)
AMMONIA
FILTER AI POLYME
AMMONIA
FILTER GALLERY
ZINC PHOSPHATE.
SODIUM HYPOCHLORITE
FLUOSILICIC ACID
NORTH CLEARWELL
SOUTH CLEARWELL
AR301162

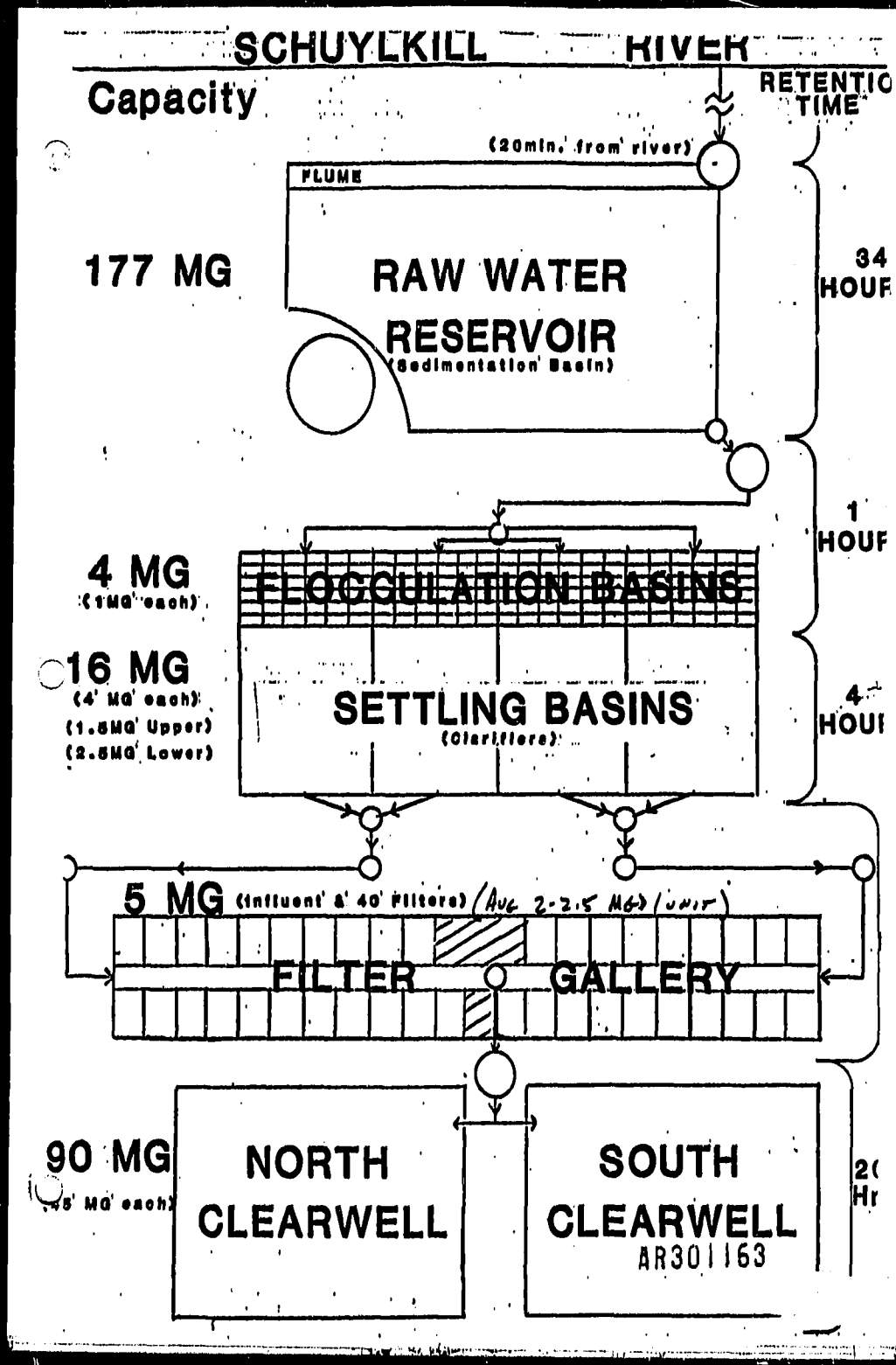

SCHUYLKILL RIVER
Capacity
RETENTIO
TIME
(20min. from river)
FLUME
177 MG
RAW WATER
RESERVOIR
(Sedimentation Basin)
34
HOUF
1
HOUF
4 MG
(1MG each)
FLOCCULATION BASINS
16 MG
(4 MG each)
(1.5MG Upper)
(2.5MG Lower)
SETTLING BASINS
(Clarifiers)
4
HOUI
5 MG (Influent & 40 Filters) (Avg 2-2.5 MG) (unit)
FILTER GALLERY
90 MG
(45 MG each)
NORTH
CLEARWELL
SOUTH
CLEARWELL
2(
Hr
AR301163

Table 2-3, Revised 1/21/82

PHILADELPHIA QUEEN LANE WATER TREATMENT PLANT
NORMAL CHEMICAL FEED REQUIREMENTS[a]

Chemical	Chemical Dosages (mg/l)	(lb/day)	(lb/MG)	Stock Chemicals – Concentrations and Requirements: Percent Active Ingredient	Specific Gravity	Active Ingredient (lb/gal)	Feed Solution (lb/gal)	Gallons/Day Stock	Gallons/Min Stock	Design Flow (mgd)	Feed Point Summary: Number	Primary	Alternate
Sodium hypochlorite [NaOCl]													
Influent flume	2.4 [Cl_2]	2,400	20	9.5 [Cl_2]	1.18	0.79	9.80	3,040	2.11	121	1	X	
Shaft "E"	8.4	8,400	70	9.5 [Cl_2]	1.18	0.79	9.80	10,630	7.38	120	1	X	
Sedimentation basin effluent	2.4	2,400	20	9.5 [Cl_2]	1.18	0.79	9.80	3,040	2.11	120	2	X	
Postfilters	1.2	1,200	10	9.5 [Cl_2]	1.18	0.79	9.80	1,520	1.06	120	1		X
Chlorine dioxide generation	0.52	520	4.3	9.5 [Cl_2]	1.18	0.79	9.80	658	0.46	120		Note b	
Carbon [C]													
Influent flume	6.0	6,000	50	10.4 [C]	1.16	1.00	9.80	6,000	4.17	120	1		X
Shaft "E"	6.0	6,000	50	10.4 [C]	1.16	1.00	9.80	6,000	4.17	120	1	X	
Ferric chloride [$FeCl_3$]													
Screen well	8.4	8,400	70	31.0 [$FeCl_3$]	1.30	3.36	10.84	2,500	1.74	120	1	X	
Shaft "E"	8.4	8,400	70	31.0 [$FeCl_3$]	1.30	3.36	10.84	2,500	1.74	120	1		X
Lime [$Ca(OH)_2$]													
Shaft "E"	2.0[c]	2,002	16.7	5.7 [$Ca(OH)_2$]	1.04	0.50	8.68	4,006	2.78	120	1	X	
Fluosilicic acid [H_2SiF_6]													
Postfilters	0.8 [F]	800	6.7	16.6 [F]	1.21	1.7 [F]	10.09	470	0.33	120	1	X	
Ammonia [NH_3]													
Sedimentation basin effluent	0.72	720	6.0	28.0 [NH_3]	0.80	21.0	7.51	340	0.24	120	2	X	
Postfilters	0.72	720	6.0	28.0 [NH_3]	0.80	21.0	7.51	340	0.24	120	1		X
Liquid polymer													
Prefilters	0.1-0.5			Dependent upon polymer selected and EPA limits.							2	X	
Shaft "E"	1.5										1	X	
Zinc phosphate [$Zn_3(PO_4)_2$]													
Postfilters	4.8[d]	4,800	40	7.6 [$Zn_3(PO_4)_2$]	1.27	0.83	10.6	453	0.31	120	1	X	
Sodium chlorite [$NaClO_2$] (for chlorine dioxide)	2.88	2,882	22	22.0 [$NaClO_2$]	1.17	2.16	9.76	1,247	0.87	120		Note b	
Sulfuric acid [H_2SO_4] (for chlorine dioxide)	2.19	21.92	18.3	93.2 [H_2SO_4]	1.84	14.28[e]	15.3	154	0.11	120		Note b	
For pH adjustment													
Shaft "E"	7.23	7,236	60	93.2 [H_2SO_4]	1.84	14.28[e]	15.3	507	0.35	120	1	X	

[a]Based on average estimate. Chemical dose at average flow.
[b]Primary application point for chlorine dioxide is Shaft "E" with alternate application point at influent flume.
[c]Practical normal dose. Actual normal dose is 0 mg/l.
[d]Dose pertains to stock zinc phosphate solution.
[e]66° Baume sulfuric acid.

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Table 2-4, Revised 1/21/82

PHILADELPHIA QUEEN LANE WATER TREATMENT PLANT

MINIMUM CHEMICAL FEED REQUIREMENTS[a]

Chemical	Chemical Dosage (mg/l)	Chemical Dosage (lb/day)	Chemical Dosage (lb/MG)	Stock Chemicals—Concentrations and Requirements: Percent Active Ingredient	Specific Gravity	Active Ingredient (lb/gal)	Feed Solution (lb/gal)	Gallons/Day Stock	Gallons/Min Stock	Design Flow (mgd)	Feed Point Summary: Number	Primary	Alternate
Sodium hypochlorite [NaOCl]													
Influent flume	2.4 [Cl_2]	1,800	20	9.5 [Cl_2]	1.18	0.78	9.80	2,030	1.41	80	1	X	
Shaft "E"	6.0	3,360	42	9.5 [Cl_2]	1.18	0.78	9.80	4,250	2.95	80	1	X	
Sedimentation basin effluent	1.0	670	8.3	9.5 [Cl_2]	1.18	0.78	9.80	850	0.59	80	2	X	
Postfilters	0.5	336	4.2	9.5 [Cl_2]	1.18	0.78	9.80	430	0.30	80	1	Note b	
Chlorine dioxide generation	0.13	87	1.1	9.5 [Cl_2]	1.18	0.78	9.80	110	0.08	80		Note b	
Carbon [C]													
Influent flume	3.6	2,400	30	10.4 [C]	1.16	1.00	9.80	2,400	1.67	80	1		X
Shaft "E"	3.6	2,400	30	10.4 [C]	1.16	1.00	9.80	2,400	1.67	80	1	X	
Ferric chloride [$FeCl_3$]													
Screen well	3.0	2,000	25	31.0 [$FeCl_3$]	1.30	3.36	10.84	595	0.41	80	1	X	
Shaft "E"	3.0	2,000	25	31.0 [$FeCl_3$]	1.30	3.36	10.84	595	0.41	80	1		X
Lime [$Ca(OH)_2$]													
Shaft "E"	2.0[c]	1,334	16.7	5.7 [$Ca(OH)_2$]	1.04	0.60	8.68	2,670	1.85	80	1	X	
Fluosilicic acid [H_2SiF_6]													
Postfilters	0.80	400	5.0	16.6 [F]	1.21	1.7 [F]	10.08	236	0.16	80	1	X	
Ammonia [NH_3]													
Sedimentation basin effluent	0.24	160	2.0	28.0 [NH_3]	0.90	2.10	7.51	76	0.05	80	2	X	
Postfilters	0.24	160	2.0	28.0 [NH_3]	0.90	2.10	7.51	76	0.05	80	1		X
Liquid polymer													
Prefilters	0.1-0.5			Dependent upon polymer selected and EPA limits.							2	X	
Shaft "E"	1.5										1	X	
Zinc phosphate [$Zn_3(PO_4)_2$]													
Postfilters	2.4[d]	1,600	20	7.8 [$Zn_3(PO_4)_2$]	1.27	0.83	10.6	1,930	1.34	80	1	X	
Sodium chlorite [$NaClO_2$] (for chlorine dioxide)	0.67	447	5.6	22.0 [$NaClO_2$]	1.17	2.15	9.76	208	0.14	80		Note b	
Sulfuric acid [H_2SO_4] (for chlorine dioxide)	0.55	367	4.6	93.2 [H_2SO_4]	1.84	14.28[e]	15.3	26	0.02	80		Note b	
For pH adjustment													
Shaft "E"	3.0[c]	2,002	25	93.2 [H_2SO_4]	1.84	14.28[e]	15.3	140	0.10	80	1	X	

[a]Based on minimum chemical dose at minimum flow.
[b]Primary application point for chlorine dioxide is Shaft "E" with alternate application point at influent flume.
[c]Practical minimum dose. Actual minimum dose is 0 mg/l.
[d]Dose pertains to stock zinc phosphate solution.
[e]66° Baume sulfuric acid.

Table 2-5, Revised 1/21/82
PHILADELPHIA QUEEN LANE WATER TREATMENT PLANT
MAXIMUM CHEMICAL FEED REQUIREMENTS[a]

Chemical	Chemical Dosage (mg/l)	Chemical Dosage (lb/day)	Chemical Dosage (lb/MG)	Stock Chemicals—Concentrations and Requirements: Percent Active Ingredient	Specific Gravity	Active Ingredient (lb/gal)	Feed Solution (lb/gal)	Gallons/Day Stock	Gallons/Min Stock	Design Flow (mgd)	Feed Point Summary: Number	Primary	Alternate
Sodium hypochlorite [NaOCl]													
Influent flume	17.0 [Cl_2]	21,270	142	9.5 [Cl_2]	1.18	0.78	9.80	26,920	18.69	150	1	X	
Shaft "E"	27.0	36,000	225	9.5 [Cl_2]	1.18	0.78	9.80	45,670	31.85	160	1	X	
Sedimentation basin effluent	10.0	13,340	83	9.5 [Cl_2]	1.18	0.78	9.80	16,880	11.73	160	2	X	
Postfilters	3.0	4,000	25	9.5 [Cl_2]	1.18	0.78	9.80	5,060	3.51	160	1		X
Chlorine dioxide generation	0.78	1,041	6.5	9.5 [Cl_2]	1.18	0.78	9.80	1,318	0.92	160		Note b	
Carbon [C]													
Influent flume	60.0	75,000	500	10.4 [C]	1.15	1.00	9.80	76,000	52	150	1		X
Shaft "E"	60.0	80,000	500	10.4 [C]	1.15	1.00	9.80	80,000	55	160	1	X	
Ferric chloride [$FeCl_3$]													
Screen well	34.0	45,440	284	31.0 [$FeCl_3$]	1.30	3.36	10.84	13,520	9.39	160	1	X	
Shaft "E"	34.0	45,440	284	31.0 [$FeCl_3$]	1.30	3.36	10.84	13,520	9.34	160	1		X
Lime [$Ca(OH)_2$]													
Shaft "E"	16.1	21,484	134	5.7 [$Ca(OH)_2$]	1.04	0.50	8.68	42,983	29.86	160	1	X	
Fluosilicic acid [H_2SiF_6]													
Postfilters	1.2 [F]	1,600	10	16.6 [F]	1.21	1.7 [F]	10.09	940	0.65	160	1	X	
Ammonia [NH_3]													
Sedimentation basin effluent	1.2	1,600	10	28.0 [NH_3]	0.90	2.10	7.51	760	0.53	160	2	X	
Postfilters	1.2	1,600	10	28.0 [NH_3]	0.90	2.10	7.51	760	0.53	160	1		X
Liquid polymer													
Prefilters	0.1-0.5			Dependent upon polymer selected and EPA limits.							2	X	
Shaft "E"	1.5										1	X	
Zinc phosphate [$Zn_3(PO_4)_2$]													
Postfilters	11.4[c]	15,200	95	7.8 [$Zn_3(PO_4)_2$]	1.27	0.83	10.6	18,310	12.72	160	1	X	
Sodium chlorite [$NaClO_2$] (for chlorine dioxide)	4.02	5,364	33.5	22.0 [$NaClO_2$]	1.17	2.15	9.76	2,486	1.73	160		Note b	
Sulfuric acid [H_2SO_4] (for chlorine dioxide)	3.29	4,380	27.4	93.2 [H_2SO_4]	1.84	14.28[d]	15.3	308	0.21	160		Note b	
For pH adjustment													
Shaft "E"	38.5	51,374	321	93.2 [H_2SO_4]	1.84	14.28[d]	15.3	3,603	2.50	160	1	X	

[a]Based on maximum chemical dose at maximum flow.
[b]Primary application point for chlorine dioxide is Shaft "E" with alternate application point at influent flume.
[c]Dose pertains to stock zinc phosphate solution.
[d]66° Baume sulfuric acid.

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CH2M HILL

TECHNICAL MEMORANDUM

SUBJECT: Carbon Transfer and Feed Systems

PROJECT: Queen Lane WTP, Philadelphia
W14621.A1

DATE: January 8, 1982

PREPARED BY: Roger Haines

INTRODUCTION

This Technical Memorandum (TM) outlines the design of the carbon transfer and feed systems for powdered activated carbon, including receiving, and storage facilities. Other TM's discuss related subjects such as dust collection systems, mixer design, application point design, sampling systems, and instrumentation and control, which are only mentioned herein.

TRANSFER SYSTEM DESIGN CRITERIA

The carbon transfer system enables transfer of carbon slurry between any two storage tanks. Transfer capabilities greatly enhance storage and feed flexibility in terms of concentration, capacity, and the like. The basic design criterion is to provide reasonable transfer rates similar to existing capabilities at the plant.

As in existing plant operation, centrifugal pumps will be used for carbon transfer. The transfer system is designed for carbon slurry concentrations up to 2 lb/gal. Related design criteria concerning pump and piping design are discussed in another TM, "Lime and Carbon Slurry Pump Design."

Redundant pumping equipment is provided. Because transfer capability is not critical to carbon feed, redundant piping is not provided. System control concepts are as described below for the carbon feed system.

FEED SYSTEM DESIGN CRITERIA

Purpose and Application

As in present plant operation, carbon will be applied as necessary for taste and odor control. Shaft "E," near the presedimentation basin outlet, is the primary application point. Alternate application is at the presedimentation basin influent structure.

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Chemical Data

The attached chemical data sheet summarizes the properties of powdered activated carbon in both dry and slurry form, and major design criteria specific to the Queen Lane WTP. Most of this information comes from carbon suppliers.

Receiving and Storage

General. As in present plant operation, powdered activated carbon will be received, in dry form, slurried with water as received, and fed in slurry form. The present supplier is Westvaco, located in Virginia. According to the supplier, carbon is delivered in 20-22 ton loads. Trucks are unloaded by self-contained air padding systems.

Storage facilities and associated equipment are designed for slurry concentrations up to 2 lb carbon/gallon slurry. The proper amount of water will be put into the tank before unloading begins. The fill line will direct carbon to the mixer vortex to promote good mixing.

Mixing and Dust Control. Mixers will be top-entering, turbine type (one per tank), with single-speed motors. Mixers will run continuously during unloading and when slurry is being withdrawn from the tank. Otherwise, the mixer may be shut down. Air spargers are provided in the bottom of each tank to promote resuspension when the mixer is run after being shut down for a period of time. Dust collectors are provided for use during carbon unloading. Further design criteria and detailed equipment selection for carbon mixing and dust collection systems are given in other TM's.

Tank Selection. Presently, carbon slurry is stored in two of six existing concrete tanks at the chemical storage building. As set forth in the March 1980 Predesign Report, four tanks of this approximate size and configuration will be used for carbon slurry storage.

To provide required tank piping and maintain a clear space between the two rows of concrete tanks at the chemical storage building, it is desirable to locate all four carbon tanks on one side, adjacent to each other. Thus, carbon storage will consist of existing ferric chloride tank No. 2 (now carbon No. 1) existing carbon tank No. 2 (remains carbon No. 2) and two new tanks (Nos. 2 and 3).

Storage Capacity. The carbon tanks are of reinforced concrete, underground except for the tops. All three tanks are approximately 18 feet square x 18 feet deep. Each has a nominal capacity of 43,600 gallons, which allows an entire load of carbon to be slurried in one tank at about [redacted] 1.0 lb/gal. Storage capacity and times (based on design-feed-rates) are summarized below.

Nominal Capacity:	4 @ 43,600 = 174,500 gal.
Storage Time:	29 days @ normal feedrate
	2 days @ maximum feedrate

Tank Provisions. Conversion of existing carbon storage tank No. 2 includes removal of the tank vent and installation of a mixer, dust collector, and air sparger piping. The existing lining in this tank, although not required for carbon slurry service, will pose no problem and therefore will remain. The existing mixer and dust collector at carbon tank No. 2 will be removed and replaced. Air sparger piping will also be installed. New fill lines will be provided for both existing tanks, using 4-inch quick-couplings for truck unloading, as recommended by the carbon supplier. Existing fill ports will be abandoned.

New carbon tanks include both a large access hatch near the tank side and a smaller observation hatch near the mixer, at the City's request.

New overflow lines will be installed at all four tanks and routed to the new overflow sump, which drains into the plant sewer system. Tank drains (headered with ferric chloride tank No. 3 drains) are routed to the same sump.

Corrosion Protection. Galvanic corrosion potential is a serious concern in storing carbon slurry. For this reason, all submerged metal (mixer shafts, air piping, etc.) is 316 SST. In terms of the concrete tank itself, galvanic corrosion becomes a concern only if the reinforcing steel is exposed, which could result from wear caused by mixing the abrasive carbon particles. Possible remedies include coating the concrete or providing extra concrete thickness over the steel.

Potential problems are minimized at this plant because carbon is fed infrequently and thus the mixers are run infrequently. Furthermore, City staff reports no sign of concrete wear or corrosion in existing carbon tanks. Inspection of the existing tanks during design was not possible.

For these reasons, no additional provisions (beyond standard reinforcing steel concrete cover thickness) are planned in the new carbon tanks. However, existing tanks should be inspected during construction. If problems are discovered, repair and/or coating work may be necessary. A re-examination of protection provisions in the new tanks might also be in order.

Dosages and Feedrates

Design criteria regarding carbon slurry properties, dosages, and feedrates are as given in Tables 2-3 through 2-5 of the March 1980 Predesign Report. Pertinent criteria are repeated

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in Table 1 of this TM. Dosages and feedrates apply to either chemical application point. An important distinction is that the carbon feed system is designed for a slurry concentration of 1 lb carbon/gal. slurry. Storage and transfer systems, on the other hand, are designed for concentrations up to 2 lb/gal.

Reliability

According to City Staff, carbon is classified as a critical chemical for intermittent feed. In the case of carbon, no need may exist for months at a time. However, when the need arises, carbon feed is critical to production of palatable finished water. Another factor affecting reliability is the abrasive nature of carbon slurry and its impact on piping, pumps, valves, and other equipment. Carbon slurry also exhibits some clogging/packing tendencies.

For these reasons, redundant piping and equipment will be provided to enhance system reliability.

System Control

Carbon feed will be flow-paced with manual dosage control, as set forth in the March 1980 Predesign Report. As a general rule, system control under normal operating conditions is remote (either manual or automatic, depending on the control element). Local control is provided, for maintenance purposes.

FEED SYSTEM SELECTION

Criteria for feed system selection include costs, reliability, stability, accuracy, operation and maintenance requirements, and City preference.

The March 1980 Predesign Report recommended the use of a pumped recirculation loop with sidestream drawoff for feed through prepackaged magmeter (FE)/flow control valve (FCV)/ water ejector units. During the design, the use of variable-output, positive-displacement (PD) pumps for direct feed was also considered. Although some users report success with progressive-cavity type PD pumps for carbon slurry, other industry sources and City experience are negative.

Because a workable, reasonable design was possible, and because of City preference, a pumped recirculation system with FE/FCV drawoff was selected for carbon feed.

With pressure provided by the recirculation pumps, an ejector was not necessary. However, carrying water is provided to ensure adequate velocity in the feed lines. The recirculation loop will return excess carbon to the storage tank. Recirculation loop pressure control is provided to ensure

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Table 1
Carbon Feed Requirements

Stock Chemicals Properties	Percent Active Ingredient [$Ca(OH)_2$]	11.4
	Specific Gravity	1.05
	Active Ingredient (lb/gal)	1.00
	Slurry (lb/gal)	8.76

	Minimum	Normal	Maximum
Design Plant Flow (mgd)	80	120	160
Chemical Dosages (c) (mg/l)	3.6	6.0	60.0
(lb/mg)	30	50	500
(lb/day)	2,400	6,000	80,000
Stock Chemical (gpd)	2,400	6,000	80,000
Feedrates (gpm)	1.67	4.17	56

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enough pressure for delivery to the application point. The recirculation loop and FE/FCV units are located in the chemical storage building.

EQUIPMENT SIZING AND SELECTION

Transfer Pumps

Two pumps are provided for carbon transfer. One is for standby service. Pump selection provides transfer rates of about 70-150 gpm, depending on suction-side tank liquid level. At an average rate of 110 gpm, the entire contents of one tank (about 43,600 gal.) can be transferred in less than 7 hours or during one 8-hour shift.

Detailed pump design and selection information is given in another TM, "Lime and Carbon Slurry Pump Design."

Recirculation and Feed System

FE's/FCV's. Difficulties in FE/FCV selection for carbon feed arise from the abrasive nature of carbon slurry, the wide design feed range, and the small, minimum and normal feedrates.

As shown in Table 1, maximum dosage is ten times normal dosage for carbon. According to City staff, minimum and normal dosages relate to typical periodic carbon use for "routine" taste and odor control. Maximum dosage pertains to a very different situation, where carbon is used for emergency treatment of "shock" loadings. This type of demand lends itself to a two-valve system; one for routine and one for emergency carbon feed. This approach also allows FE and FCV selections that provide more reasonable flow ranges and maximum velocities, and was therefore adapted.

An extensive search for suitable control valves focused on materials, configuration, small flow capabilities, and control characteristics. Some candidates are not available in abrasion-resistant materials or have configurations unsuitable for carbon slurry service. Others have relatively poor control characteristics. Of the various candidates, a vee-ball type valve is the best selection. It is available in suitable materials, has a straight-through, full-port flow pattern, has good control characteristics, and has proven application in slurry services.

A 1-inch vee-ball FCV (the smallest available) was selected for low or routine carbon feed. The intent is for this valve to be used for feedrates from 1.67 up to about 7 gpm (25-40 percent open). The corresponding FE magmeter is sized for a velocity range of about 2.5-11 fps. A redundant FE/FCV unit is provided for standby service.

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A 1 1/2-inch vee-ball FCV was selected for high or emergency carbon feed. This FCV is designed for feedrates of 7-56 gpm (about 22-58 percent open). The corresponding FE is sized for a velocity range of about 1-10 fpm. Because control is not essential in the emergency feed situations, backup consists of a manual bypass.

FCV's are pneumatically-actuated. Valves will fail in the closed position to prevent uncontrolled chemical feed.

Carrying Water Design. As discussed in another TM, "Lime and Carbon Slurry Pump Design," minimum pipeline velocities are necessary to prevent carbon settling. If the carbon feed lines were sized to provide this velocity at minimum feedrates, velocities at maximum feedrates would be prohibitively high.

A simple solution is to provide carrying water as needed to maintain velocity. The method selected is to add water downstream of the FE/FCV units using a pressure control valve (PCV). Pipe sizing and system hydraulics are such that a PCV set to maintain a downstream pressure of about 34 psig will accomplish this purpose. Carrying water input will vary from 0-55 gpm, depending on the carbon feedrate and the application point. This design feature also benefits FCV stability by keeping downstream pressure fairly constant.

Recirculation Pressure Control. Recirculation pressure requirements are a function of the head required at maximum feedrates. For the carbon feed system, a head of about 43 psig is required upstream of the FE/FCV units. The design provides a pressure element (PE)/pressure control valve (PCV) unit on the recirculation header to accomplish this. Constant upstream pressure also adds to FE/FCV stability.

For the reasons discussed above for the FCV selection, a vee-ball type valve was also selected for this service. A 2-inch valve was selected for control over a 45-160 gpm flow range (about 28-54 percent open). A redundant, manual PE/PCV is provided for standby service. The PCV is pneumatically operated. It will fail in the open position to avoid pump dead-heading.

Recirculation Pumps. Two pumps are provided for carbon recirculation. One is for standby service. Pumping rates will be about 100-160 gpm, depending on suction-side tank liquid level and carbon feedrates. Head requirements are based on maintaining recirculation header pressure, as discussed above.

Further discussion of pump design and selection is given in another TM, "Lime and Carbon Slurry Pump Design."

Piping and Valves

New piping in the carbon systems is CPVC. This material is preferred by the City for the sake of uniformity, and is suitable for this application. Where possible, long-sweep elbows are used to minimize abrasion. The long-sweep fittings selected are actually PVC electrical conduit. Similar fittings are presently used at the plant. Their structural properties are acceptable for this application.

The use of various alternative fittings (long-radius elbows, laterals, etc.) in various materials (polyethylene, lined steel, rubber, etc.) was considered to further mitigate abrasion and clogging potentials. However, cost, suitability for process piping, and single-source availability were identified as problems in selection. Moreover, City staff prefers the use of standard CPVC fittings because replacement fittings are inexpensive and readily available.

Isolation valves are rubber-lined, straightway diaphragm type because they compare favorably to other types in terms of suitability, cost, and availability in the required sizes. In addition, City experience has been favorable in this service. Open-close valve actuators are pneumatic. Although City preference was for electric actuators, investigation revealed that they would be oversized and expensive in this application. Space limitations were also identified as a constraint in some areas.

SYSTEM OPERATION FEATURES

Receiving and Storage

Batching (water addition) and mixing (both mechanical and air) systems are designed for remote control under normal operating conditions. Mixers are equipped with sensors to alarm if the impellers are not turning. Because operator presence is required for truck unloading, only local dust collector control is provided. Dust collector features are discussed further in another TM.

A pressure-type level sensing element is provided on a suction line at each tank. Tank level is indicated, and high level is alarmed at each truck unloading station. Low tank level is alarmed (remotely) only if the tank is being used, i.e., the outlet valve is open. A float switch in the overflow sump is used to alarm tank overflow.

Transfer System

The carbon transfer system is designed for remote control, including tank and pump selection, under normal operation conditions. Remotely operated transfer suction and discharge valves at each tank, and appropriate remote pump controls are provided for this purpose.

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Isolation valves on the standby pump should normally be closed to keep it from filling with slurry. Interlocks are provided so that a transfer pump cannot be started unless these valves are open. Pressure indication is provided on the transfer pump discharge line, and high pressure is alarmed to warn of possible pump damage.

Remotely operated flush and drain valves are provided so that the transfer piping and pump can be flushed with water immediately after use. Flushing water is introduced at the far upstream end of the suction piping and removed (to a sump) at the far downstream end of the discharge piping. Water system pressure should be adequate for good flushing without running the transfer pump. Other flush/drain hose connections are provided throughout the system for maintenance purposes.

Feed System

The carbon feed system is designed for remote control, including tank, pump, and FE/FCV selection, under normal operating conditions. Remotely operated recirculation suction and discharge valves at each tank, appropriate remote pump and recirculation PCV controls, remotely operated FE/FCV isolation valves, a remotely operated carrying water valve, and appropriate remote FCV controls are provided for this purpose.

Redundant, manually valved recirculation suction and return headers are provided for standby service. These headers serve tank Nos. 3 and 4.

Isolation valves on the standby recirculation pump will normally be closed to keep it from filling with slurry. Interlocks are provided so that a recirculation pump cannot be started unless these valves are open. Discharge pressure indication and set point deviation alarm are provided by the recirculation PE/PCV.

Remotely operated isolation valves at each FE/FCV unit are used to prevent idle lines from filling with slurry. Set point deviation alarms are used to alarm the need for FCV status changes. Pressure indication is provided in the feed header downstream of the FE/FCV units.

Two feed lines are routed to each application point. Isolation valves are provided to shut off the idle lines. Position switches on these valves provide remote indication of the application point being used.

Because the carbon slurry PCV and FCV's throttle with small valve openings, plugging at these locations is a potential problem. To lessen this concern, the PCV and online FCV

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will be automatically "pulsed" full open periodically to flush any accumulated carbon solids. The frequency of pulsing is adjustable.

Remotely operated (manual on the standby recirculation header) flush and drain valves are provided so that both the recirculation and feed piping can be flushed with water immediately after system shutdown. Flushing water is introduced at the far upstream end of the recirculation suction piping. For recirculation loop flushing, water is removed (to a sump) at the far downstream end of the return piping. Water system pressure should be adequate for good flushing without running the pumps. For FE/FCV and feed line flushing, water is discharged at the application point. In this case, the recirculation should be run to obtain good flushing velocities. Numerous other flush/drain hose connections are provided throughout the system for maintenance purposes.

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CHEMICAL DATA SHEET

CARBON (C)

Unit Process No. 10

Form: Powdered activated carbon, received and slurried upon receipt

Use: Taste and odor control

Dosages (C):

Normal	-	50 lb/MG
Minimum	-	30 lb/MG
Maximum	-	500 lb/MG

Storage Capacity: 174,500 gallons nominal
29 days at normal feedrate and 1 lb/gal slurry
2 days at maximum feedrate and 1 lb/gal slurry

Method of Delivery: Truck, 20-ton capacity, air unloading

Storage Conditions: Up to 2 lb/gal slurry, mechanical and air mixing

System Equipment:

A) Pumps: Slurry-type centrifugal, abrasion-resistant metal

B) Piping: CPVC

C) Valves: Diaphragm (straightway type)

D) Tanks: Concrete (existing)

Properties:

	As Delivered	As Stored/Pumped
% Active Chemical		Slurry 1.0 lb/gal 11.4% [C]
Specific Gravity	0.4 to 0.7	1.05 (approximate)
Solubility	Insoluble in any solvent	
Appearance	Black, odorless powder	

Hazardous Potentials:

General: Avoid contact with strong oxidizing chemicals such as permanganate, sodium chlorite, perchloric acid, etc. Avoid contact with vegetable oils or hydrocarbons as these may cause slow oxidation until the ignition point of the carbon is reached.

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Toxicity:	TDL: ivn-rat LD_{50}:120 mg/kg Symptoms: Conjunctivitis, corneal hypoplasia, eczema, bronchitis, pneumatotumor
Handling and Storage:	Wear safety glasses and a chemical cartridge respirator in dust atmosphere
Emergency Treatment and Measures:	
Hygienic Precautions:	Preclude from exposure (to dust) those personnel with pulmonary diseases.
Hygienic Treatment (First Aid):	Irrigate eyes with running water.

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APPENDIX Q

PATHOLOGIST REPORT

University of
Pennsylvania

School of
Veterinary Medicine

1884
1984

October 8, 1986

George T. Potera, PhD
Environmental Resources Management, Inc.
999 West Chester Pike
West Chester, PA 19382

Dear Dr. Potera:

Enclosed is a summary of gross and histologic findings on the turtles. Unfortunately, the histopathologic interpretation is seriously compromised by freezing artifact. You may want to discount this portion of the study altogether, or repeat the study using another method of euthanasia followed immediately by necropsy and tissue fixation. I'll be glad to answer any questions or help in whatever way I can.

Sincerely,

DM Gillette

Deborah M. Gillette, DVM, PhD
Diplomate, American College of
Veterinary Pathologists

DMG:ju

Enclosures

AR301180

New Bolton Center • 382 W. Street Road • Kennett Square, PA 19348 • Telephone: 215-444-5800

PATHOLOGY REPORT
ENVIRONMENTAL RESOURCE MANAGEMENT TURTLES
86-488
86-489

SMALL TURTLE

SEX: female

SHELL LENGTH: 22 cm.
SHELL WIDTH: 23 cm.
WEIGHT: 2.6 kg.

EXTERNAL EXAMINATION: A small number of leeches are present on the external surface.

GROSS FINDINGS: There were no gross lesions.

HISTOPATHOLOGY: Intestines, kidney, liver, lung, heart, and stomach were examined. No significant microscopic lesions were present in any organ, but the intestines, kidney, and liver had such severe artefactual changes due to autolysis and/or freezing artefact that the histologic interpretation of these organs cannot be considered valid.

LARGE TURTLE:

SEX: Male

SHELL LENGTH: 34 cm
SHELL WIDTH: 36 cm
WEIGHT: 8.8 kg

GROSS FINDINGS: There were no significant gross findings.

HISTOPATHOLOGY: Sections of skin, stomach, intestine, testes, lung, heart, and liver were examined. No significant findings were present in any of the tissues, but severe autolysis and/or freezing artefact has caused substantial artefactual damage to this tissue, and histopathology of the intestines cannot be considered valid.

SUMMARY: No significant gross or microscopic findings were present in either turtle. However, the turtles had been frozen and thawed, rendering histologi assessment less than optimum in many tissues, and completely invalid in others. I would recommend caution in drawing conclusions from these animals due to improper handling of the tissues, and suggest that future studies be conducted by euthanizing the animals in some other manner and performing the autopsies immediately after sacrifice, placing the tissues directly into formalin.