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NAS BRUNSWICK
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
1 CONGRESS STREET, SUITE 1100 (HBT)
BOSTON, MASSACHUSETTS 02114-2023

June 30, 1999

Mr. Emil Klawitter (eeklawitter@efdnorth.navfac.navy.mil)
Northern Division, Naval Facilities Engineering Command
Code 1823/EK
10 Industrial Highway, Mailstop 82
Lester, PA 19113-2090

Re: Monitoring Event 14 (April 1999) Report for Site 9, Naval Air Station, Brunswick, Maine

Dear Mr. Klawitter:

Thank you for the opportunity to review the above report which was prepared for the Navy by EA Engineering, Science and Technology Inc. We've noted several improvements in the event 14 report and have several comments for your and response (and possible inclusion) in the 1999 annual report.

General Comments:

1. **Timely report and improved figures.** We commend EA and the Navy for the quick turnaround of this report, which was dated 18 June and received on 22 June. This results in a more real time analysis of the data. The color figures also read easier.

2. **Data Quality.** We are reassured that there were no trichloroethylene (TCE) or tetrachloroethylene (PCE) blank issues on this event and that quality control were confined to the "customary" methylene chloride and other chemicals that aren't contaminants of concern.

3. **Observations.** We have several preliminary observations; response are not required at this time as they will be refined with event 15 results and may be analyzed in the annual report:

   a. The elevation of the well screens may be an important factor in tracking contaminant transport through site 9. EPA has put together a simple cross section to help display vertical relationships (enclosed). Consideration should be given to preparing a professional cross section for the annual reports.

   b. Concentrations fell on event 14, but they also did 2 and 5 events ago, perhaps a seasonal (or water level related) variation is developing? The regression lines developed in the 1998 annual report are an excellent tool to smooth these out and focus on long term trends.

   c. The presence of PCE, TCE, and 1,2-dichloroethylene (DCE) without vinyl chloride in MW-227/74 as opposed to DCE and vinyl chloride only in MW-80/69/76 is interesting.

4. **Maintaining a long term view.** It is evident to EPA that individual events and even years shouldn't be taken out of context at site 9. Due to the relatively low concentrations and limited area of impact, it seems that a sudden and dramatic rise in concentrations would be needed to justify quick, more aggressive action. Alternatively, monitoring changes should continue to be made prior to the five year reviews to monitor contaminant evolvement.

Specific Comments EPA has no specific comments that require a formal response. As stated in comment 3, we have several observations that we will probably comment to in the 1999 annual report; dependent upon event 15 results and analysis in the annual report:

5. The chemical specie along the MW-80/6,9/76 axis and MW-227/74 axis appear different. Other, factors such as dissolved oxygen, screen depth and relation to the clay layer are ,important but weren't considered in detail. Please also see the attached figures (in hard copy only).

   a. A combination of a narrow plume axis and well screen depth may be critical to detecting the VOC's at site 9. MW-227/69 are by far the deepest wells (MW-74 is shallower, but screened just above the clay) and have yielded sustained and/or high VOC levels.

   b. MW-80/76 are shallower wells, but are directly along the detection axis. VOC's were also detected at low levels along a narrow axis upgradient at MW-81 on event 12.

   c. Several wells have very depressed dissolved oxygen levels (<1.0 ppm), indicating aerobic bacterial activity (MW-69, 71, 76, 79, and 227).

	PCE	TCE	DCE/DCA	vinyl chloride
MW-80/69/76	none	none	1-17	3-15
MW-227/74	0.7J	3	2	none

6. The graph of overall vinyl chloride ratios looks like it's going the wrong way for natural attenuation, but an ongoing inflow of PCE/TCE/DCE would cause this. The linear regression graph that was added in last years annual report will display the long term trend as well. Also to consider is that a constant ratio would still indicate successful natural attenuation in the case of a constant inflow of parent VOC's

If you have any questions, please contact me at 617-918-1344 or barry.michael@epa.gov.

Sincerely,

Michael S. Barry
Remedial Project Manager
Federal Superfund Facilities Section

cc. Ed Benedikt/Brunswick Conservation Commission (rbenedik@gwi.net)
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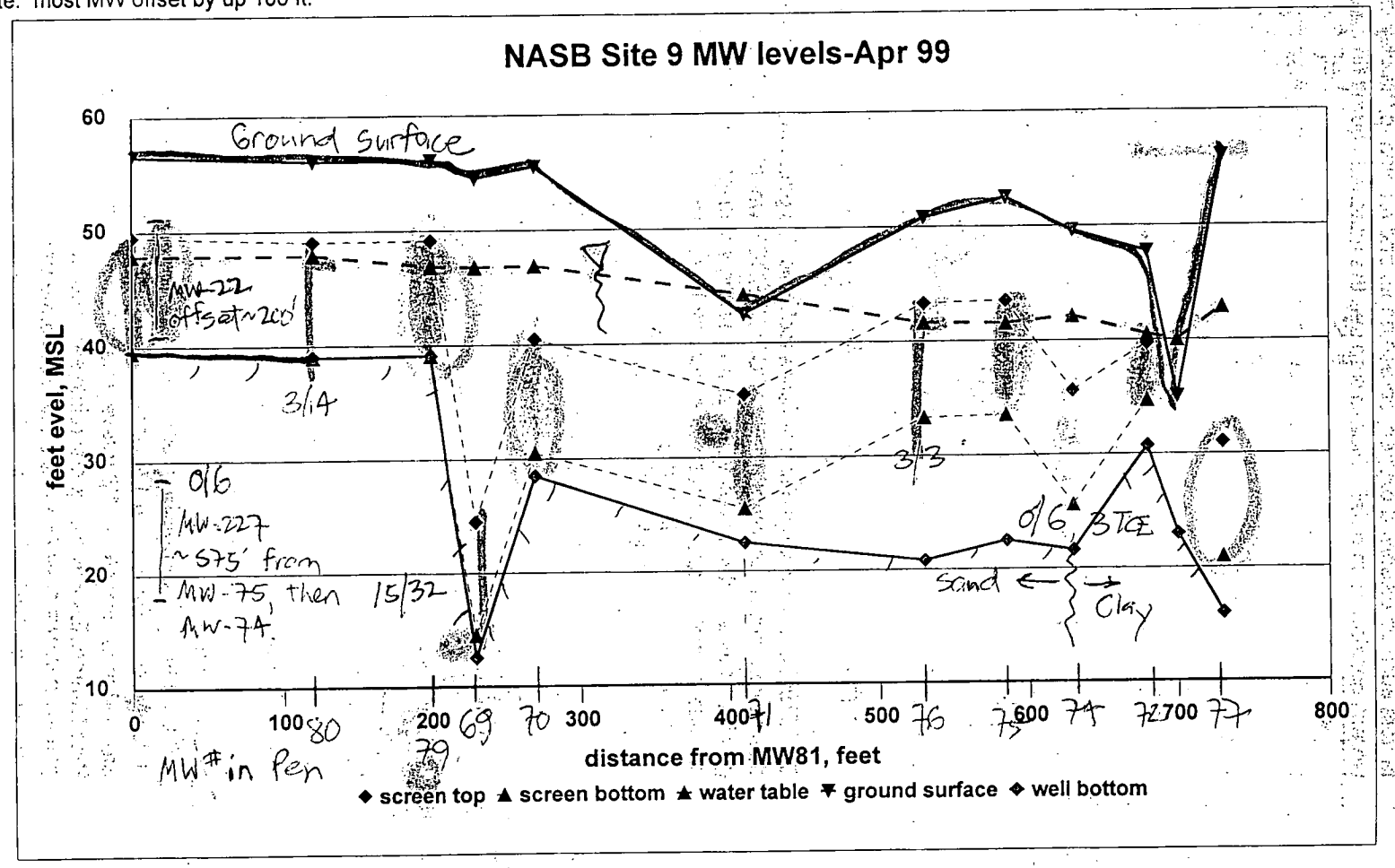
site 9 wells	MW81, of	MW80,	MW79,	MW69,	MW70,	MW71,	MW76,	MW75,	MW74,	MW72,	upper p	MW77, offset 50'
distance	0.0	120.0	200.0	230.0	270.0	410.0	530.0	585.0	630.0	680.0	700.0	730.0
screen top	49.5	49.0	49.1	24.5	40.5	35.5	43.3	43.5	35.6	39.7		31.0
screen bottom	39.5	39.0	39.1	14.5	30.5	25.5	33.3	33.5	25.6	34.7		21.0
water table	47.9	47.9	46.8	46.8	46.9	44.3	41.6	41.5	42.1	40.5	40.0	42.9
ground surface	56.5	56.0	56.1	54.5	55.5	42.5	50.8	52.5	49.6	47.7	35.0	56.0
well bottom		39.0	39.1	12.5	28.5	22.5	20.8	22.5	21.6	30.7	23	16
type		sand	sand	sand	sand	sand	sand	sand	clay	clay		transition

note: most MW offset by up 100 ft.



NS

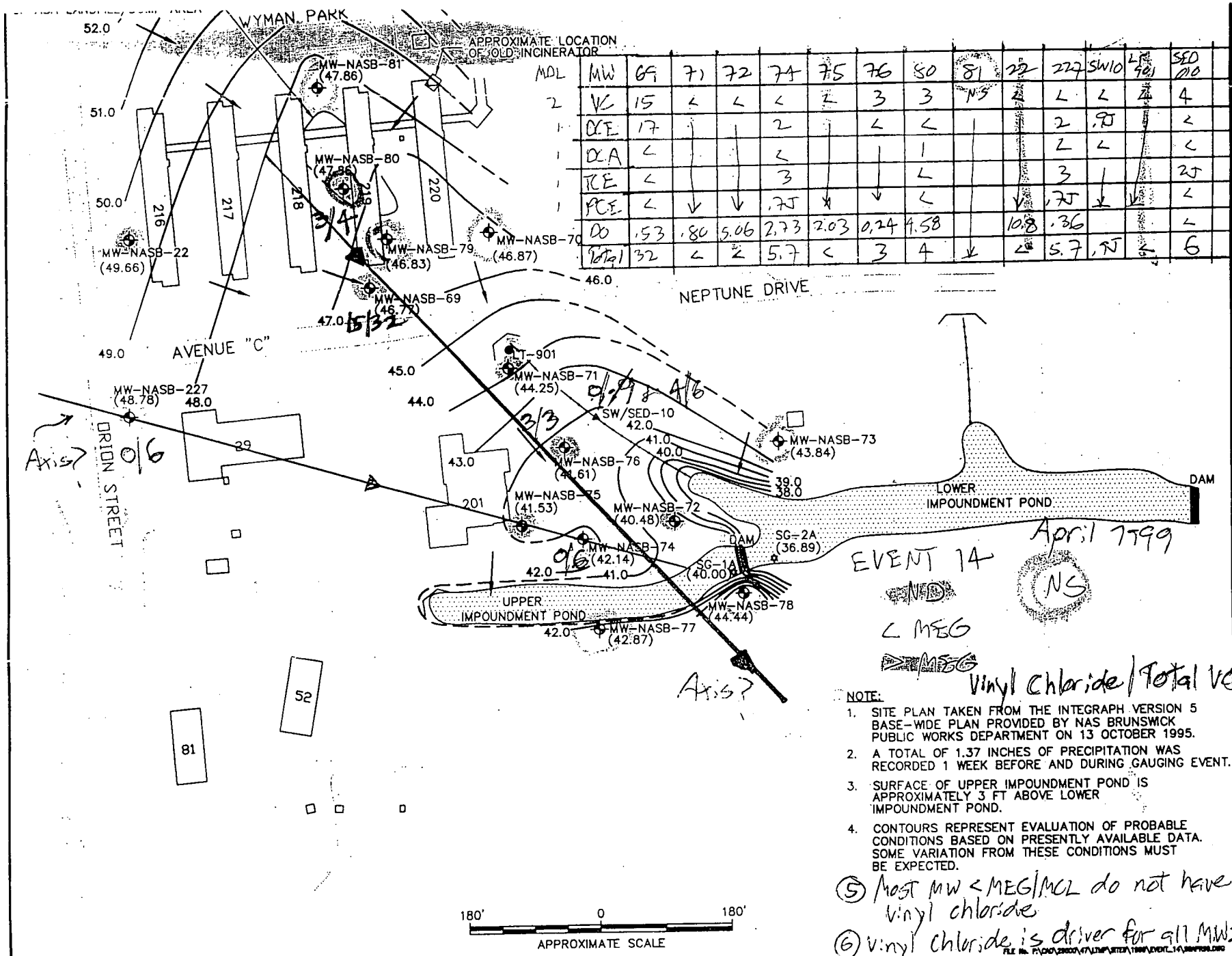
ND

< MCL/MEG

> MCL/MEG

Vinyl Chloride/ VOC's

MW-227 screen at 18.7 - 28.7 msl. Level @ 45.78



MDL	MW	69	71	72	74	75	76	80	81	22	227	SW10	901	SED 10		79	70
2	VC	15	<	<	<	2	3	3	NS	2	<	<	2	4		NS	NS
	DCE	17			2		<	<			2	.8J		<			
	DCA	<			<			1			2	<		<			
	TCE	<			3			<			3			2J			
	PCE	<			.7J			<			.7J			<		2	
	DO	.53	.80	5.06	2.73	2.03	0.24	4.58		10.8	.36			<		0.62	3.69
	Total	32	<	<	5.7	<	3	4		<	5.7	.7J	<	6		NS	NS

NOTE:

1. SITE PLAN TAKEN FROM THE INTEGRAPH VERSION 5 BASE-WIDE PLAN PROVIDED BY NAS BRUNSWICK PUBLIC WORKS DEPARTMENT ON 13 OCTOBER 1995.
2. A TOTAL OF 1.37 INCHES OF PRECIPITATION WAS RECORDED 1 WEEK BEFORE AND DURING GAUGING EVENT.
3. SURFACE OF UPPER IMPOUNDMENT POND IS APPROXIMATELY 3 FT ABOVE LOWER IMPOUNDMENT POND.
4. CONTOURS REPRESENT EVALUATION OF PROBABLE CONDITIONS BASED ON PRESENTLY AVAILABLE DATA. SOME VARIATION FROM THESE CONDITIONS MUST BE EXPECTED.

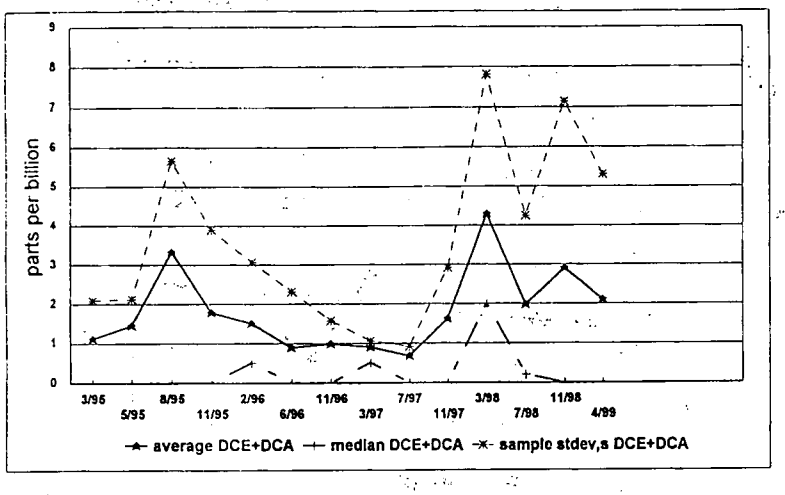
(5) Most MW < MEG/MCL do not have vinyl chloride

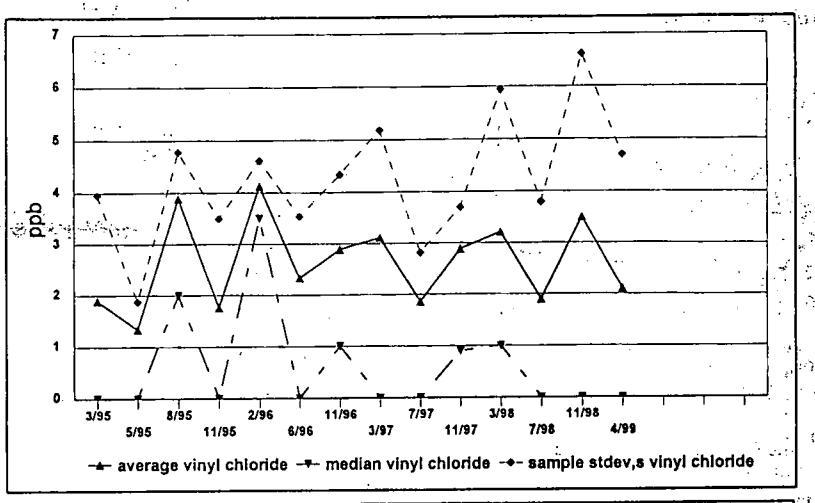
(6) Vinyl Chloride is driver for all MW > MEG
~~TCE close but < MCL~~

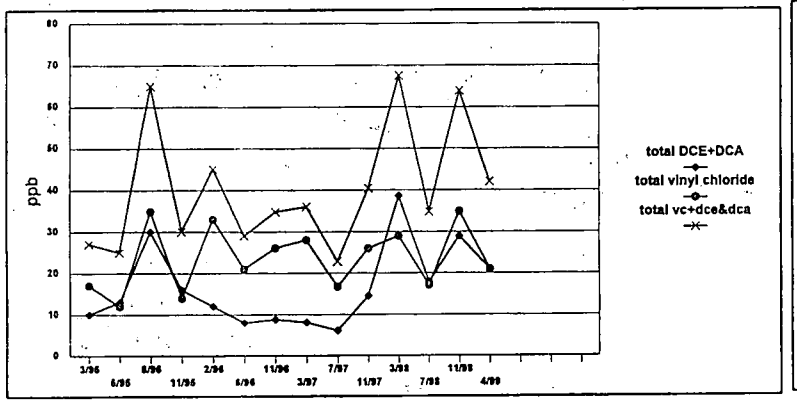
EA ENGINEERING, SCIENCE, AND TECHNOLOGY

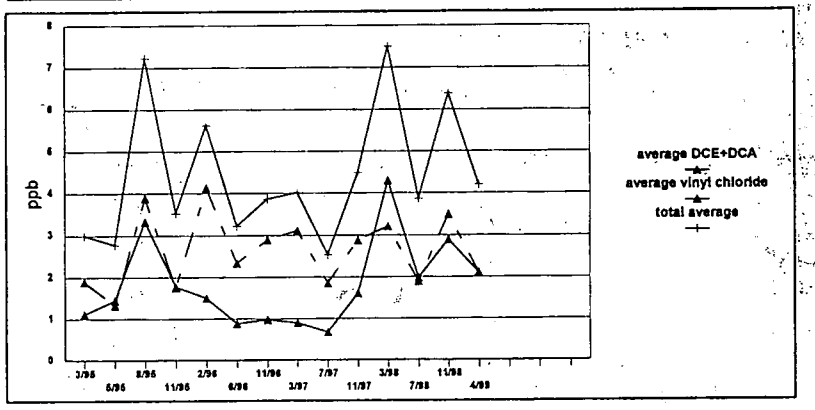
SITE 9
(NEPTUNE DRIVE DISPOSAL SITE)
NAVAL AIR STATION
BRUNSWICK, MAINE

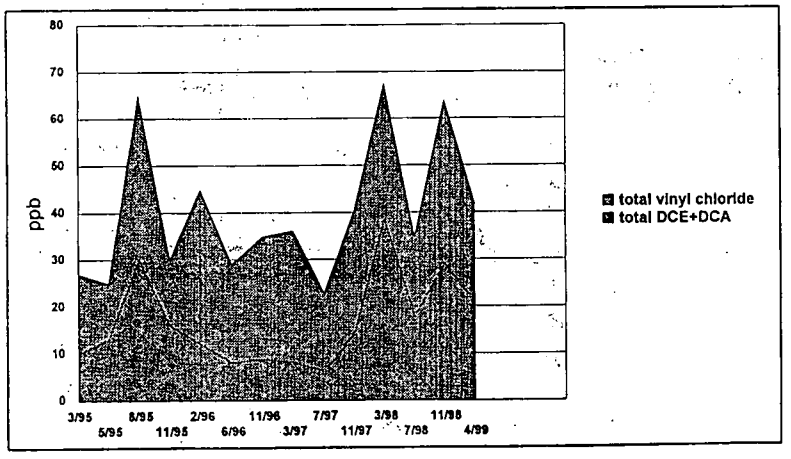
FIGURE 4
INTERPRETED POTENTIOMETRIC SURFACE ELEVATIONS, 19 APRIL 1999
WELL GAUGING DATA

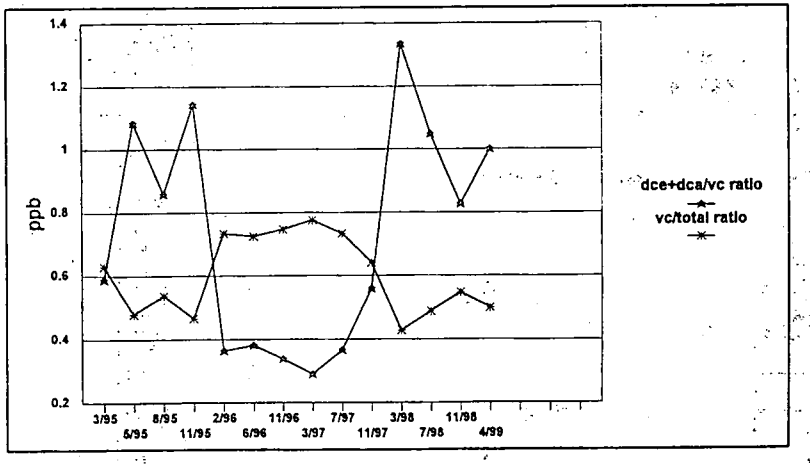






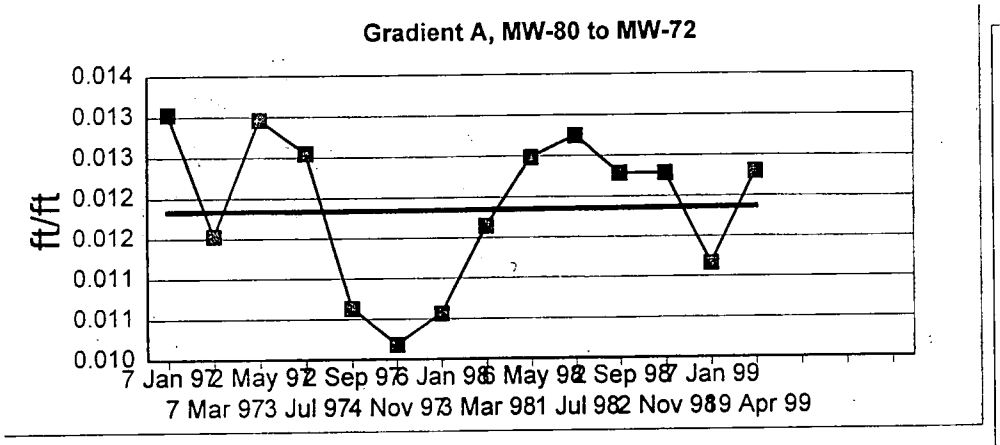


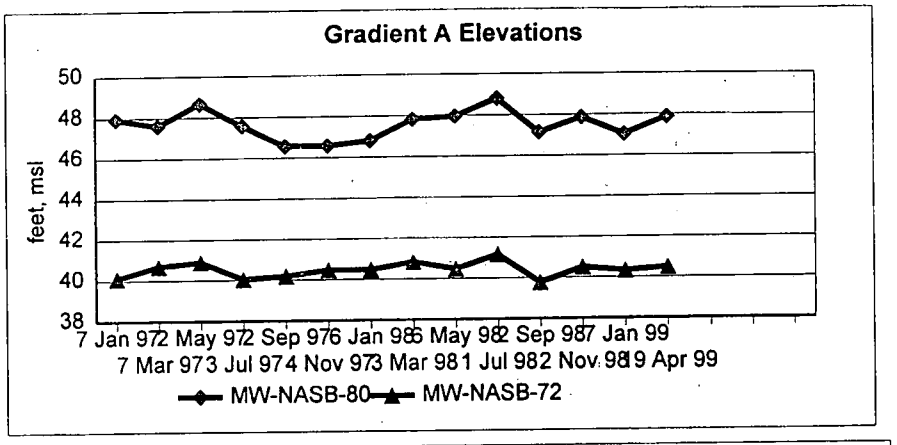


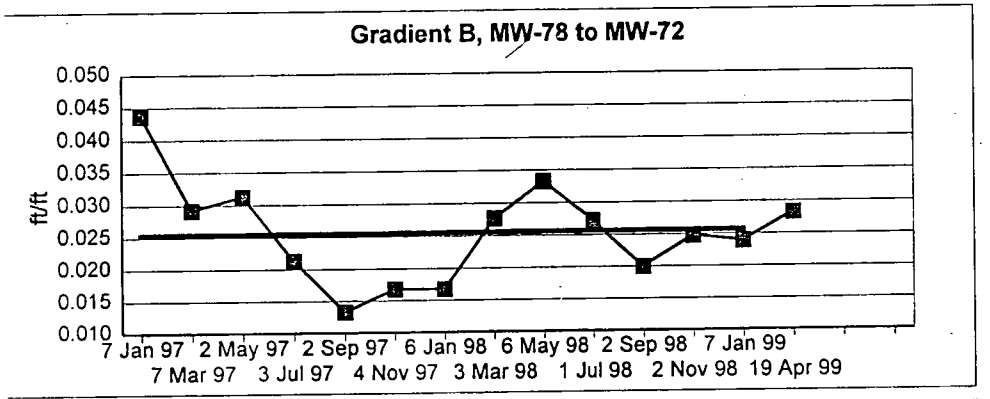


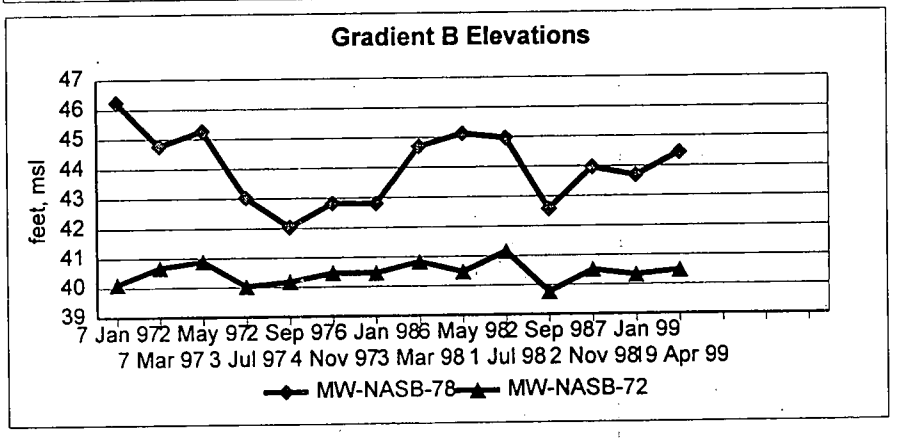
Produced by MS Barry, US EPA Region 1; approximated values based upon Navy supplied reports

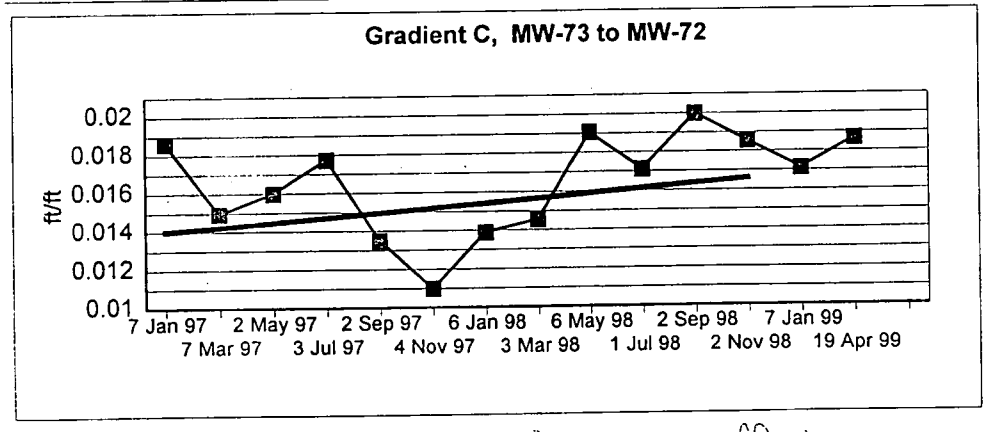
NAS Brunswick Site 9 Groundwater Elevation Data

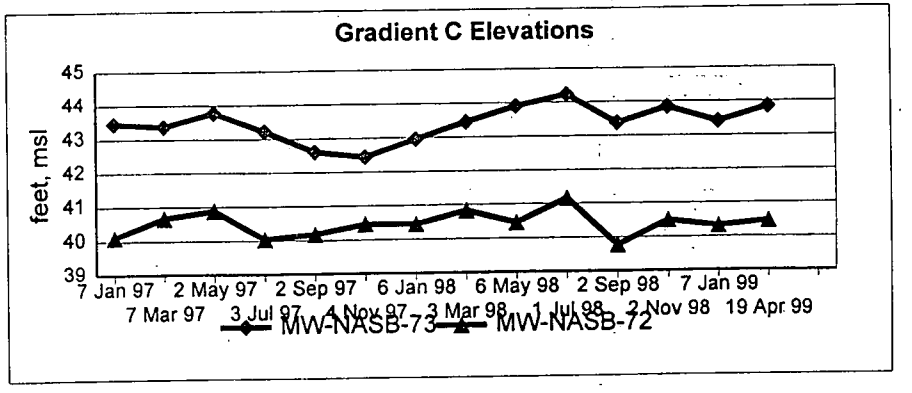












Event 1A seems to have no effect on Long Term Trends.

s9gwgrads.123, 06/29/99

Produced by MS Barry, EPA Region 1

approximated values based upon Navy supplied reports