GAUGING/PRODUCT RECOVERY
and
SEMI-ANNUAL SAMPLING REPORT
JANUARY THROUGH MARCH 1995
ATF AREA
GM POWERTRAIN
YPSILANTI, MICHIGAN

SEPTEMBER 1995

TOLTEST, INC.

TOLTEST, INC.

Founded in 1927
Toledo, Ohio • Detroit, Michigan • Monroe, Michigan • Pittsburgh, Pennsylvania

September 5, 1995 Project No. 70003.24

Mr. Walter Mixon
Senior Environmental Engineer
General Motors Corporation
Powertrain Division
1 Hydra-matic M/C 130
Ypsilanti, Michigan 48197

Gauging / Product Recovery
and
Semi-Annual Sampling Report
January Through March 1995
ATF Area
GM Powertrain
Ypsilanti, Michigan

Dear Mr. Mixon:

TolTest, Inc., (TolTest) is pleased to submit the enclosed separate-phase product gauging and recovery and the first semi-annual sampling report for the ATF Area at the General Motors Powertrain Division (Powertrain) plant in Ypsilanti, Michigan. This report contains TolTest's product thickness gauging, product recovery monitoring, and groundwater sampling activities conducted at the ATF Area during the months of January through March 1995.

We believe that the data and observations presented in this report are sufficient to fulfill your present requirements. If you have any questions or require additional assistance, please feel free to contact us.

Sincerely,

TolTest, Inc.

Joseph M Cook

Jose E. Castillo
Environmental Engineer

Joseph M. Cook
Project Manager

[P:\WP51\IH\REPORTS\ASBESTOS\GMPWRYPS\70172\ATF41-51]

GAUGING/ PRODUCT RECOVERY
and
SEMI-ANNUAL SAMPLING REPORT
JANUARY THROUGH MARCH 1995
GENERAL MOTORS POWERTRAIN
ATF AREA
YPSILANTI, MICHIGAN

PREPARED FOR

GENERAL MOTORS CORPORATION
POWERTRAIN DIVISION
YPSILANTI, MICHIGAN

SUBMITTED

MAY 1995
T0LTEST PROJECT NO. 70172.01-13

TOLTEST, INC.
44191 PLYMOUTH OAKS BOULEVARD
SUITE 1200
PLYMOUTH, MICHIGAN
(313) 455-8600

TOLTEST, INC.

TABLE OF CONTENTS

1.0 INTRODUCTION

This report summarizes the field activities conducted by TolTest, Inc. (TolTest) from the months of January through March 1995, at the General Motors Powertrain Division (Powertrain) in Ypsilanti, Michigan. Site activities included the groundwater/product thickness gauging, remedial system monitoring, and the groundwater sampling of 12 monitoring wells. In addition, a summary of ground water analysis is presented for the groundwater samples collected. The sections that follow discuss the field activities performed by TolTest, and include analytical testing methodologies and a summary of groundwater analysis data.

2.0 FIELD ACTIVITIES

Field activities conducted by TolTest in the ATF Area consisted of groundwater/product thickness gauging, remedial system monitoring, and groundwater sampling of 12 monitoring wells (see Appendix A, Groundwater/Product Gauging Record and Appendix B, Operation and Maintenance Logs). Each well was first gauged with an oil/water interface probe to determine the static water level and the thickness of separate-phase product. Separate-phase product was detected in monitoring wells MW-1, MW-8, MW-11, MW-12, MW-17, MW-19, MW-21, MW-23, MW-25, MW-29, and MW-31. In addition, separate-phase product was detected in the draw down inner wells at recovery wells RW-3, and RW-30.

2.1 OPERATION AND MAINTENANCE ACTIVITIES

During the operation and maintenance activities conducted from the months of January through March 1995 at each recovery well system, the pump hardware, pump screen, and plumbing was checked for integrity. The recovery pump controller was checked for pressure leaks at all fittings and pump cycles. Flow measurements were determined by first disconnecting the product discharge line from the fitting connecting it to the holding tank, then using a 500 ml graduated cylinder measurable product was obtained by allowing the product to discharge into the graduated cylinder for at least five minutes (see Appendix B, Operation and Maintenance Logs and Appendix C, Fluid Collection Rates, Volumes, and Descriptions from Recovery Well Locations). Recovery well system RW-24, which was broken after a heavy machine ran over the man hole cover and damaged the product air line and discharge hose, was inoperable for approximately two weeks. Maintenance and repairs were scheduled and conducted by powertrain personnel. The remaining recovery systems were operating well and efficiently.

A. PULSE PUMP PNEUMATIC PUMPING SYSTEM

Based on the gauging data, pump cycle, system inspection, and product flow rate, each of the product recovery systems were optimized as follows:

1. Flow throttle was turned fully clockwise.
2. The refill control was set at the "D" setting.
3. The discharge control was at the "A" setting.
4. The discharge control was gradually increased (in 1/2 sec. increments) giving the pump time to go through 3 to 5 cycles between each adjustment. The discharge control was then increased until air bubbles were seen coming through the pump discharge tubing at the end of the discharge cycle. Pump discharge control was then slowly decreased until air bubbles were no longer seen at the end of the cycle.
5. The refill control was gradually decreased (in 1 sec. increments) giving the pump time to go through 3 to 5 cycles between each adjustment. Decreasing the refill control continued until air bubbles were seen coming through the pump discharge tubing at the end of the discharge cycle. The refill control was slowly increased until air bubbles were no longer seen at the end of the cycle.

2.2 GROUNDWATER SAMPLING

Samples of groundwater were collected from 12 monitoring wells on March 23,1995, as shown on figure 1. Groundwater was sampled using two-inch diameter plastic bailers dedicated to each well. Each well was purged of three well casing volumes, or evacuated and allowed to recharge prior to sampling. Groundwater was sampled by lowering the plastic bailer down into the wellcasing below the groundwater interface. Water entered through a ball check valve seated at the bailer bottom capturing a column of water. The sample was then extracted by retrieving the bailer from the bore hole.

A one litter amber glass jar was filled for every sample collected. Each sample jar was capped using zero headspace filling procedures. The samples were delivered to TolTest's analytical laboratory for analysis of total petroleum hydrocarbons TPH by using U.S Environmental Protection Agency Method 8015, Lube-Range only. The results of the analysis are summarized in Appendix E.

2.3 Equipment Decontamination

Between each monitoring well, the interface probe was decontaminated by washing with Alconox and rinsing the probe and cable with deionized water. The probe and exposed cable were all triple rinsed and allowed to air dry before using at the next sampling point.

3.0 SAMPLE CUSTODY

The following sections identify the procedures utilized to document, collect, and transport the samples to the analytical testing laboratory.

3.1 SAMPLE DOCUMENTATION

Each water sample collected at the site was labeled with the following information:

- Project number
- Sample number
- Sample location
- Date and time collected
- Preservation method
- Name of sampler

3.2 CHAIN-OF-CUSTODY LOGS

Each sample collected at the site was documented on a chain-of-custody (COC) log prior to sample transportation. Appendix B presents the COC logs that accompanied the samples. The COC logs document sample integrity, transfer, shipment, and final receipt to the laboratory.

3.3 SAMPLE STORAGE

Each sample collected at the site was placed in plastic coolers with absorbent materials. Chilled ice packs were then placed inside each cooler to preserve sample integrity.

3.4 SAMPLE SHIPMENT

Samples collected at the site were retained on ice prior to release to the laboratory. Samples were transferred to the receiving laboratory with all required sample documentation.

4.0 ANALYTICAL RESULTS

4.1 GROUNDWATER ANALYTICAL DATA

One groundwater sample from each groundwater monitoring well was collected for laboratory analysis of Total Petroleum Hydrocarbons (TPH) Lube-Range Organics using U.S. EPA Method 8015M. Analytical results for the groundwater samples are presented in Table 1.0. Groundwater laboratory data and chain-of-custody sheets are presented in Appendix D.

Groundwater analytical results detected TPH Lube-Range Organic concentrations in MW-1, MW-2, MW-4, MW-5, MW-11, MW-17, MW-18, MW-19, MW-25, MW-28, and MW-31. TPH Lube-Range Organic concentrations ranged from 2.87 to 189.0 mg/l. MW-27 had no detectable TPH Lube-Range Organics present. The MDNR has no action level for TPH; however, 100 mg/l is frequently cited by the MDNR as an action level. A summary of analytical results is presented in Table 1.0.

5.0 CONCLUSIONS

Based on the current groundwater/separate-phase product gauging activities, as compared to the gauging data from the months of August through December, we observed significant changes in the recovery of the separate-phase product on all the recovery wells at the ATF site. Significant changes in the product thickness can be observed in the hydrographs for the recovery wells in the ATF area. During the operation and maintenance activities conducted in the months of January through March 1995 at the ATF site, it was observed that the recovery systems were operating with efficiency. Repairs were done in recovery wells RW-10 and RW-24 in the months of January and March, respectively.

The following steps were used to calculate the total product volume for the ATF site:

- From a computer generated graph for the ATF area using the relative surface elevations of the recovery wells and recent gauging data, a scale of 1 inch=100 feet was used. Therefore, 1 sq. inch=10,000 sq. feet. The computer generated grid volume equals 2.40838 sq. inch foot. To convert this quantity to volume in cubic feet we use the conversion factor of 10,000 sq.feet/sq. inch.

[Total volume (Cubic Feet)=2.40838 sq. inch feet * 10,000 sp. feet/sq. inch=24083.8 cubic feet]

- To convert total volume to total gallons we use the conversion factor of 7.48 gal/cubic feet.

(Total gallons=24083.8 cubic feet * 7.48 gallons/cubic feet=180146.824 gallons)

- Assuming that 25% of the product plume contains porous soil, the total product volume for the ATF area is total product volume=180146.824 gallons * 25%=45036.706 Gallons.

A historical data table, table F-1 (Appendix F), has been updated from the previous quarterly report to indicate the product thickness of the monitoring and recovery wells. Fluid level measurements taken during the monthly monitoring events confirm the presence of depressed fluids levels in the recovery wells. At the end of the second monitoring period, fluid levels were depressed in the range of 0.29 to 0.94 feet. While depressed levels indicate the successful removal of total fluids, it is not possible to estimate from these levels the total volume of fluid removed. Based on performance observations, the recovery of product may not be consistent from month to month. Because of these observations, an estimation of total product removed by simple discharge sample collection will not produce an accurate data.

TABLES

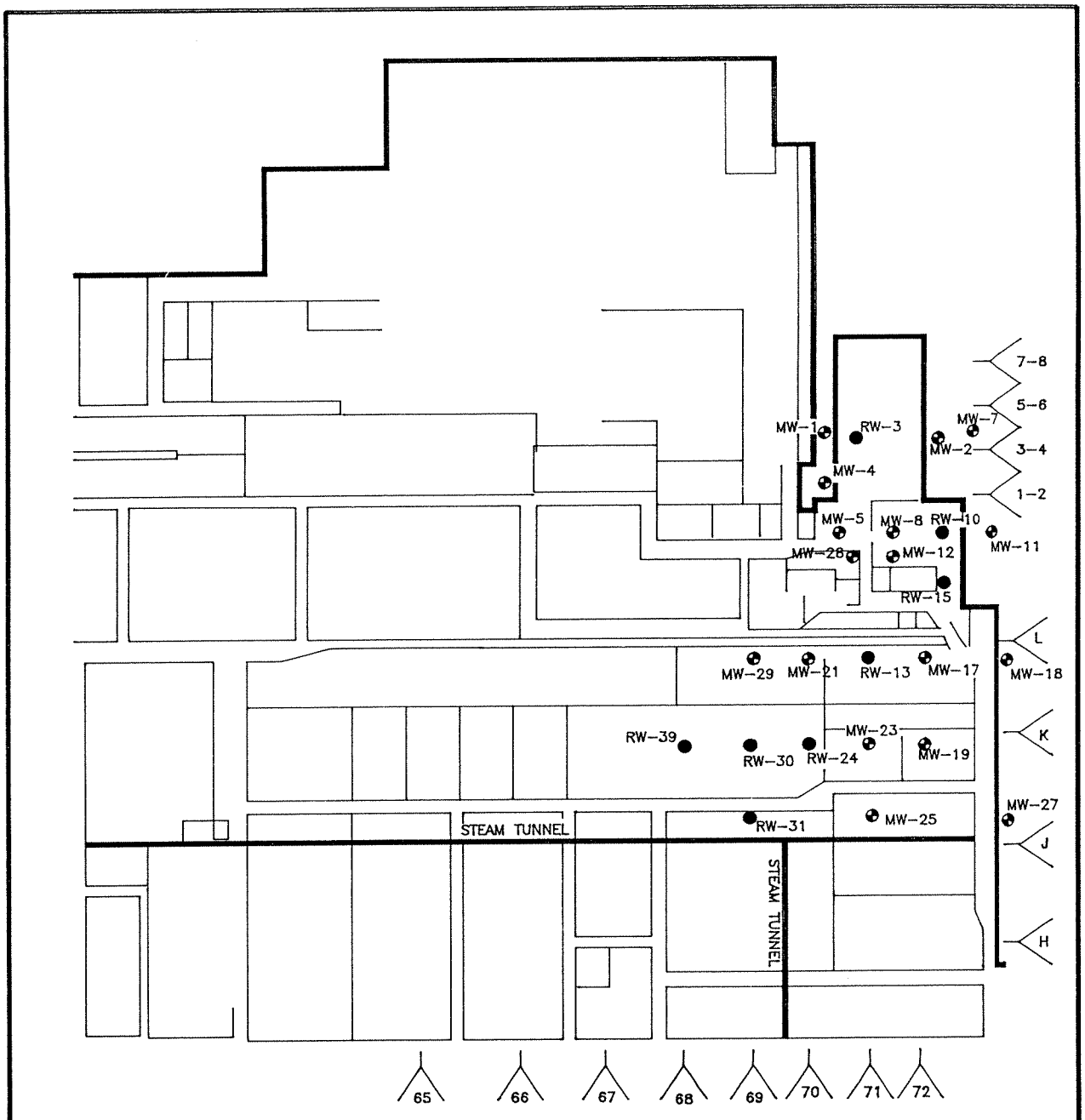
Table 1.0
Groundwater Analytical Data
GM-Powertrain/Willow Run Plant
ATF Area

Sampling Location	Sampling Date	Total Petroleum Hydrocarbons Lube-Oil Range Organics (ppm)
MW-1	3/23/95	53.0
MW-2	3/23/95	60.7
MW-4	3/23/95	189.0
MW-5	3/23/95	80.1
MW-11	3/23/95	67.6
MW-17	3/23/95	86.0
MW-18	3/23/95	14.3
MW-19	3/23/95	2.87
MW-25	3/23/95	137.0
MW-27	3/23/95	--
MW-28	3/23/95	81.2
MW-31	3/23/95	133.0
Analytical Method		8015M (Ca Luft)

Notes:

1. Samples analyzed by TolTest, Inc., of Toledo, Ohio.
2. Units: mg/l = parts per million (ppm).
3. -- = Not detected at or above the MDNR detection limits.

FIGURES



N

LEGEND

● = MONITORING WELL LOCATION

● = RECOVERY WELL LOCATION

APPROXIMATE SCALE – FEET

0 130 260

FIGURE 1

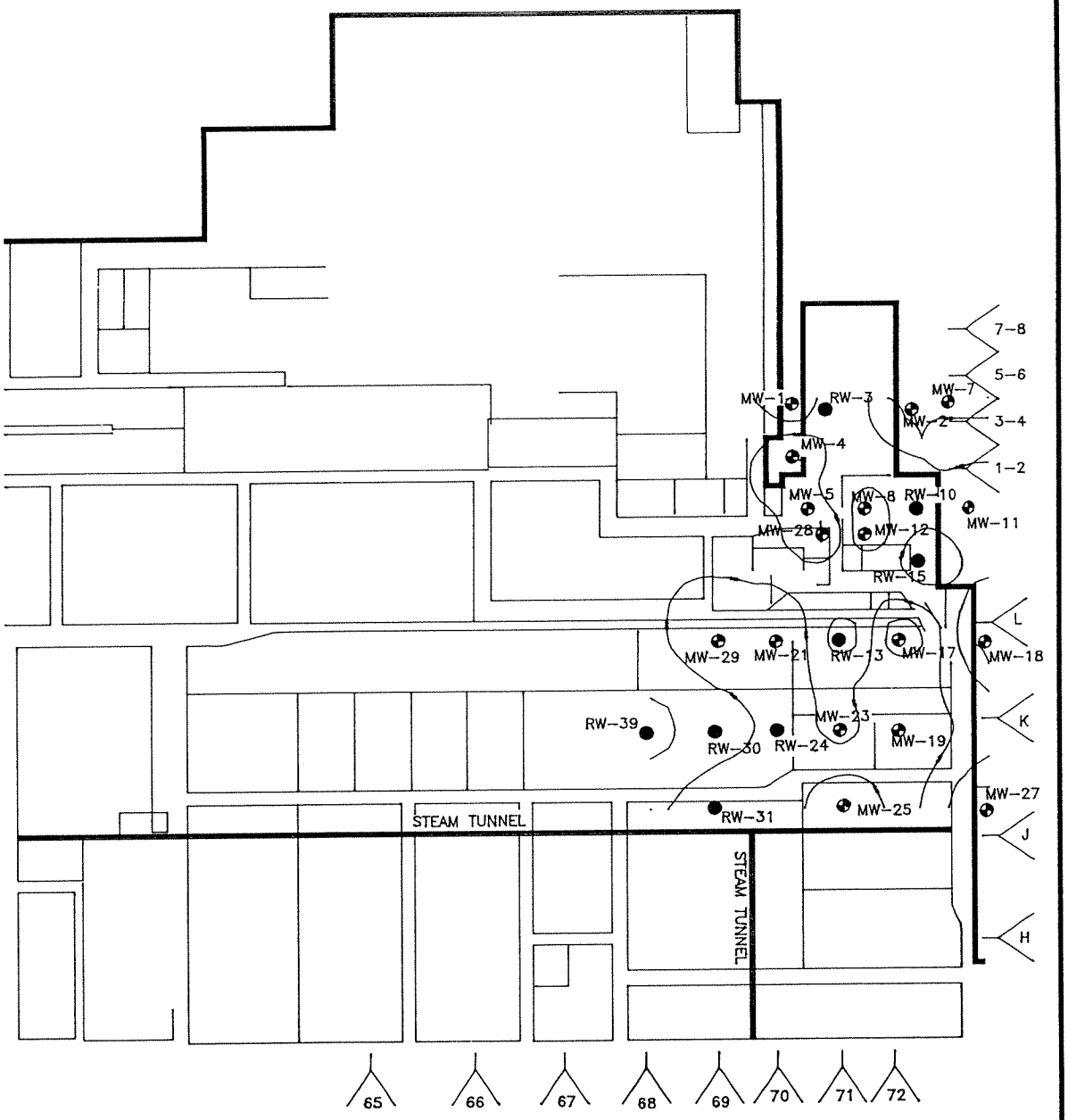
DETAILED SITE MAP
ATF AREA – MARCH 1995
GENERAL MOTORS CORPORATION
GM POWERTRAIN PLANT
YPSILANTI, MICHIGAN

PREPARED FOR

GENERAL MOTORS CORPORATION
YPSILANTI, MICHIGAN

DRAWN	SRS\ 6-9-95
CHECKED	JMC
APPROVED	JMC
DRAWING NUMBER	70172ATF

TOLTEST, INC.



N

LEGEND

⊕ = MONITORING WELL LOCATION

● = RECOVERY WELL LOCATION

APPROXIMATE SCALE – FEET

0 130 260

FIGURE 2

ISOCONTOUR MAP
ATF AREA – MARCH 1995
GENERAL MOTORS CORPORATION
GM POWERTRAIN PLANT
YPSILANTI, MICHIGAN

PREPARED FOR

GENERAL MOTORS CORPORATION
YPSILANTI, MICHIGAN

DRAWN	SRS\ 6-9-95
CHECKED	JMC
APPROVED	JMC
DRAWING NUMBER	70172ACM

TOLTEST, INC.

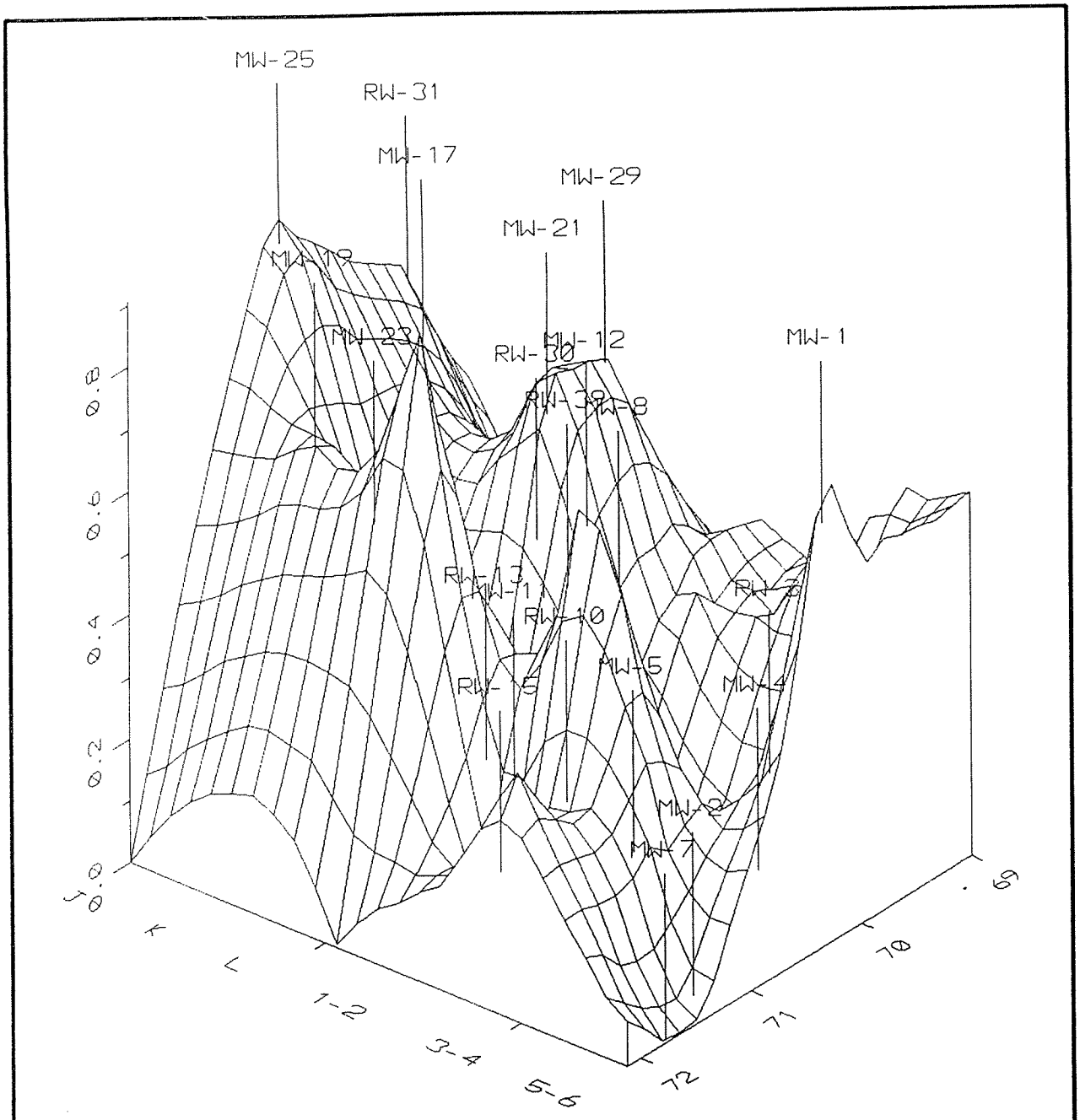
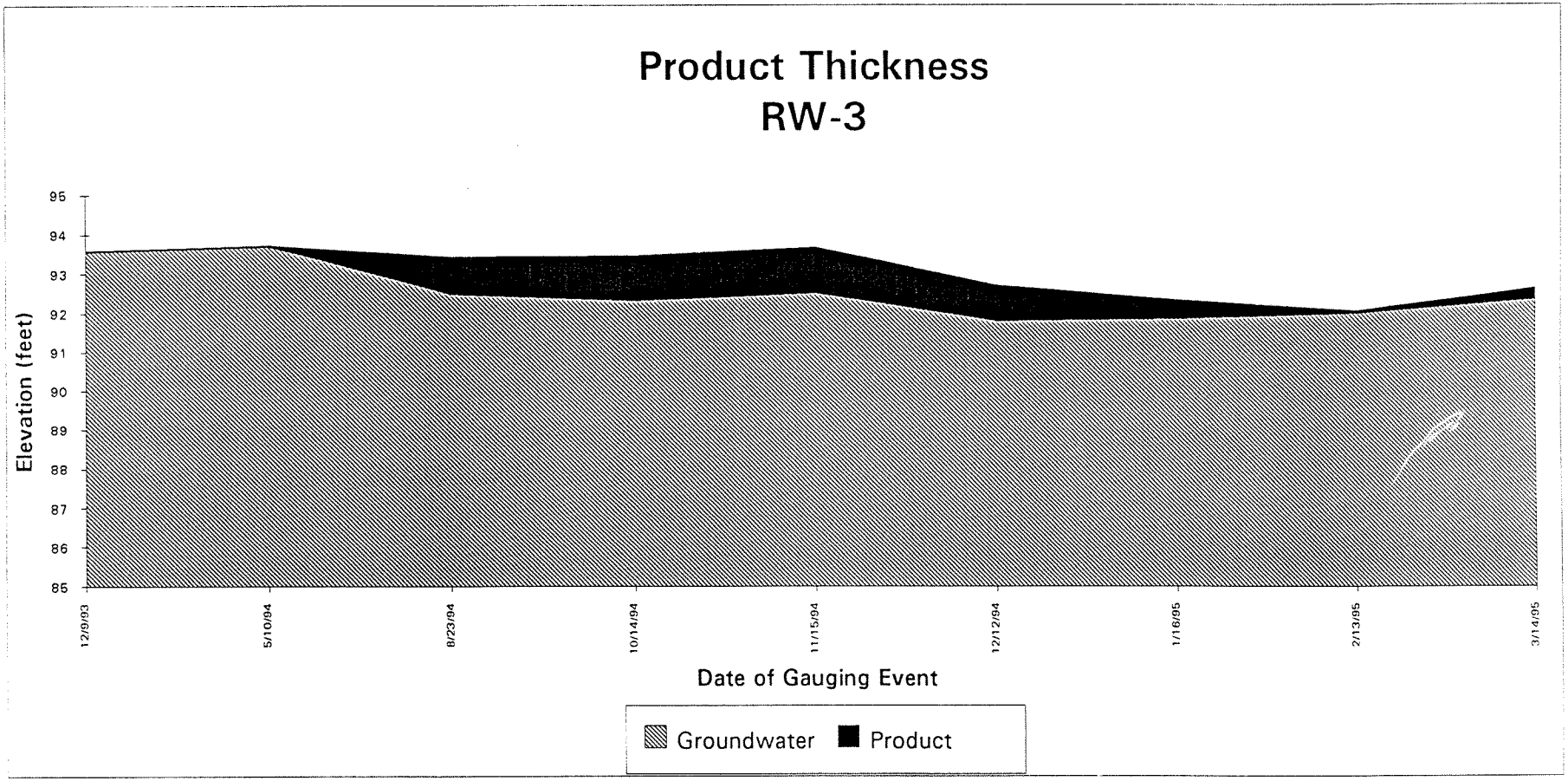


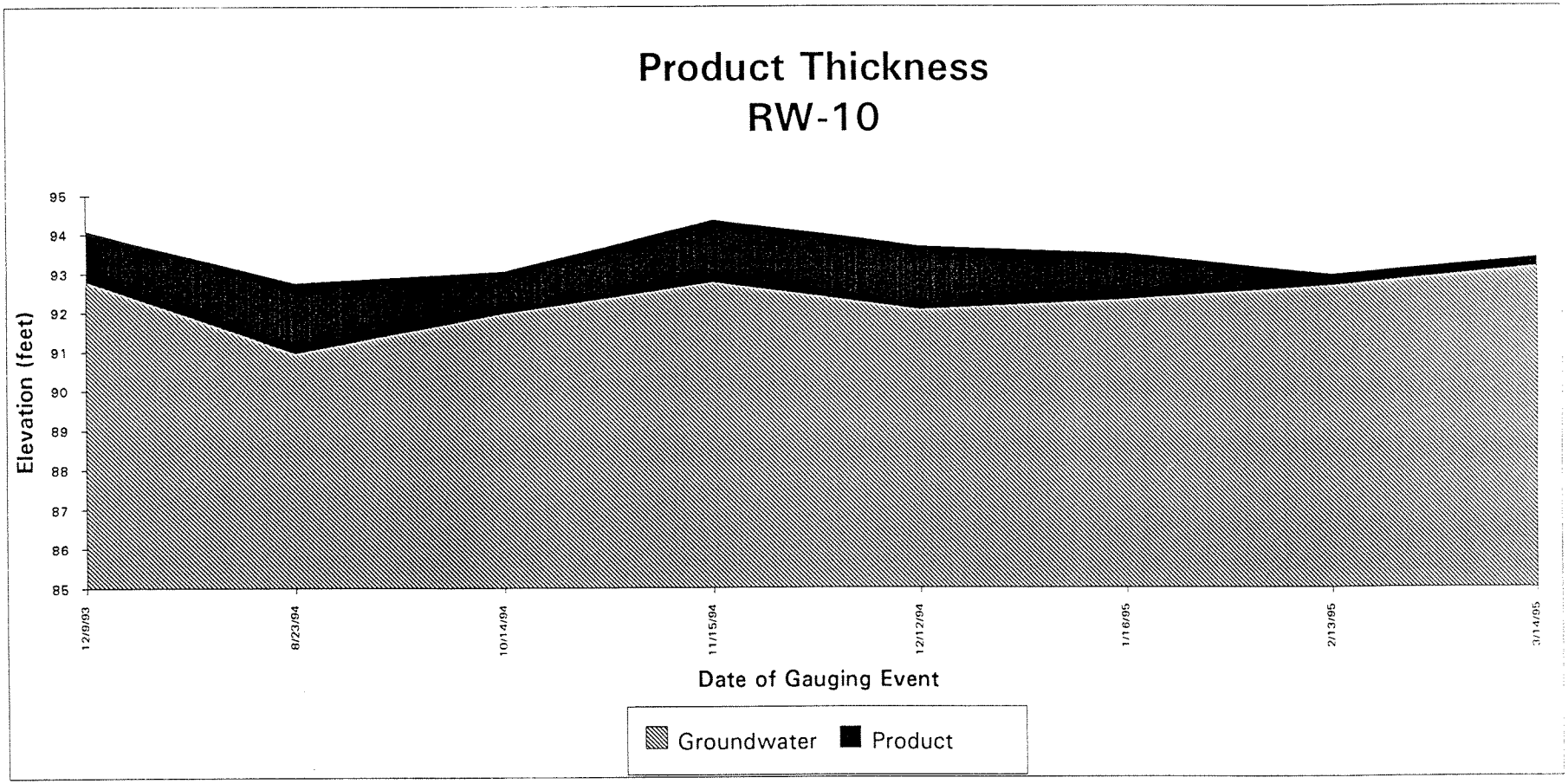
FIGURE 3
ATF AREA – MARCH 1995
PRODUCT THICKNESS CONTOUR MAP
GENERAL MOTORS CORPORATION
GM POWERTRAIN PLANT
YPSILANTI, MICHIGAN

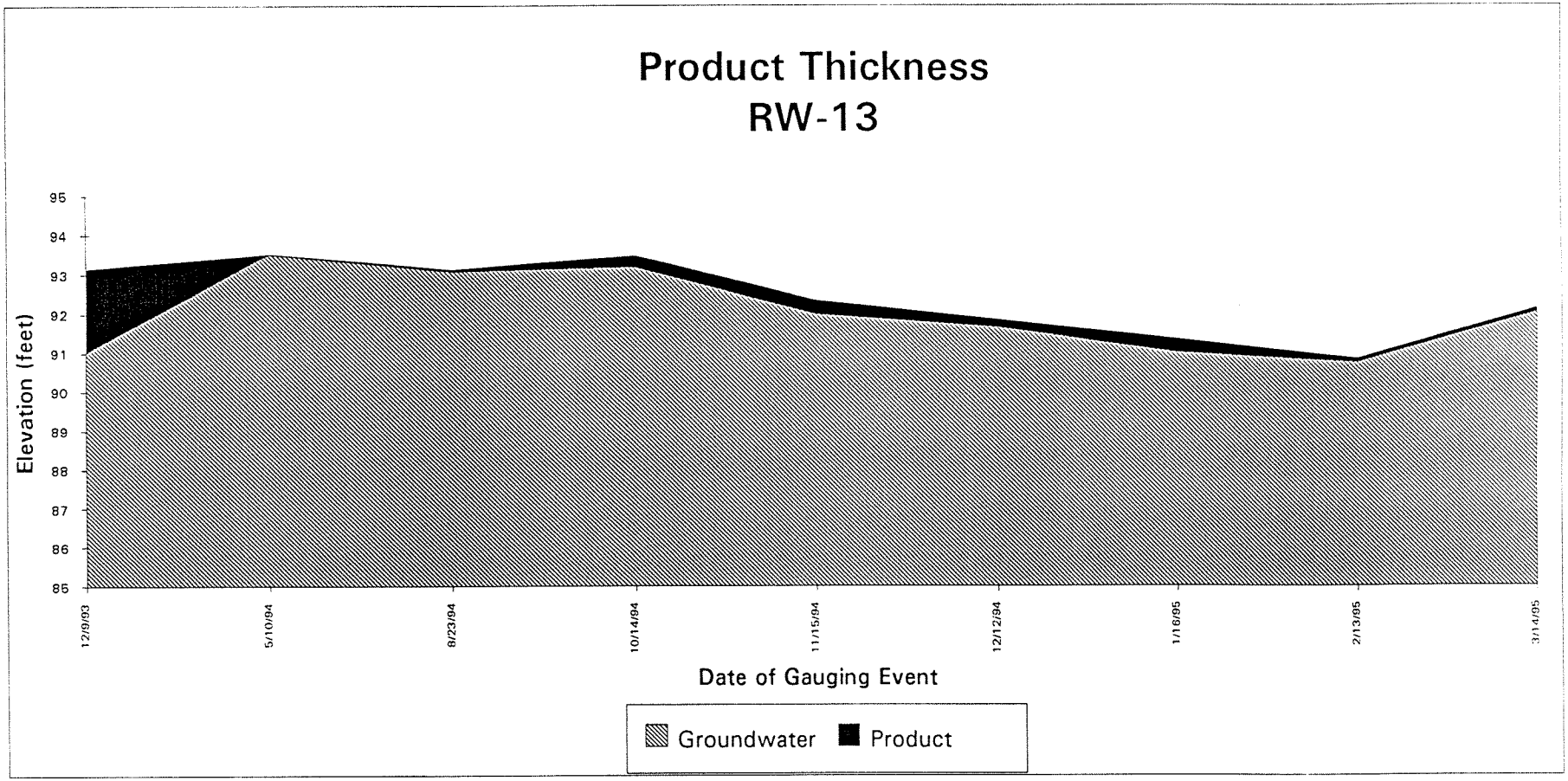
PREPARED FOR
GENERAL MOTORS CORPORATION
YPSILANTI, MICHIGAN

DRAWN SRS\ 6-9-95	
CHECKED JMC	
APPROVED JMC	
DRAWING NUMBER 70003ATF	

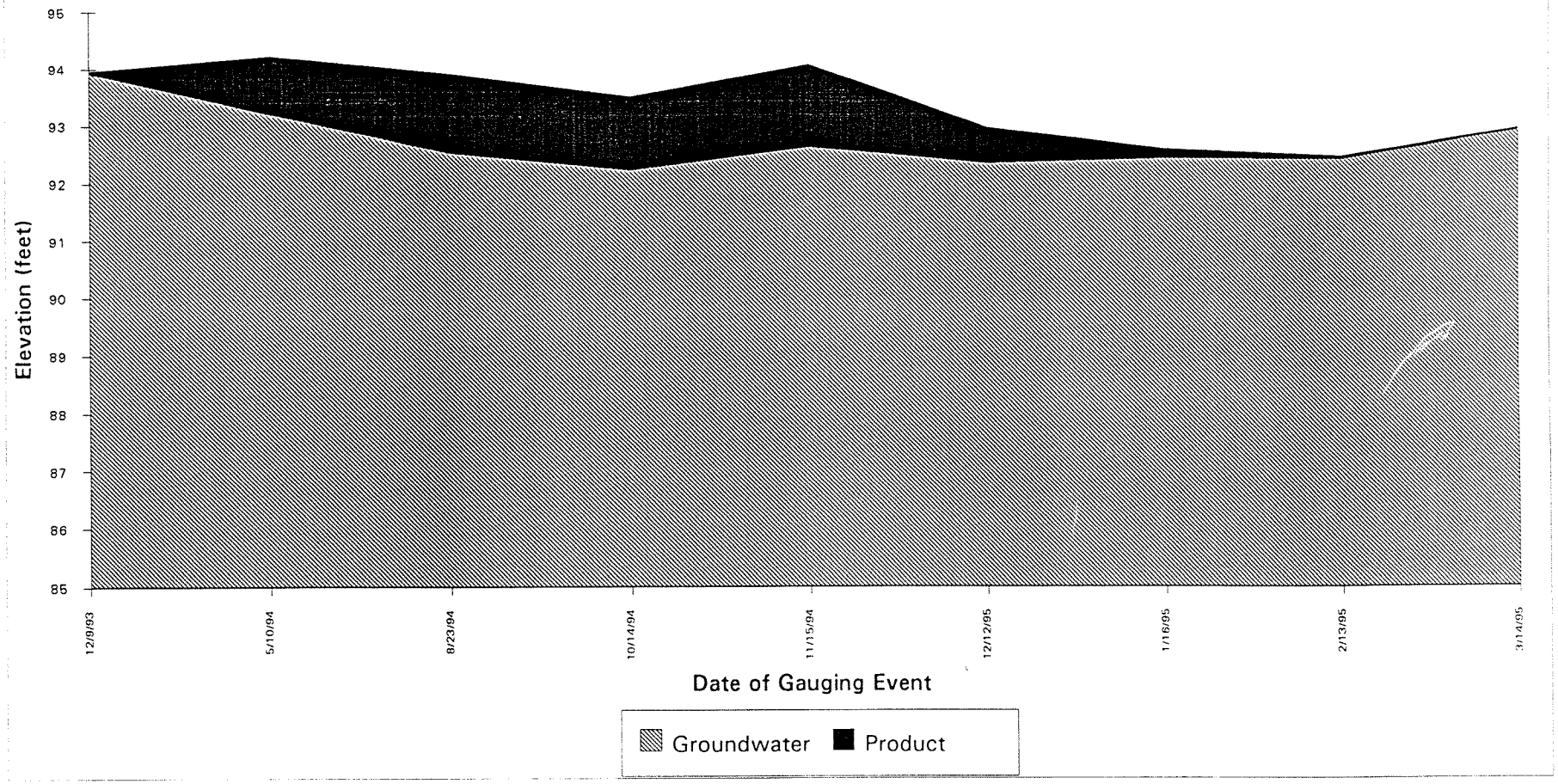
TOLTEST, INC.


Product Thickness
RW-3
Elevation (feet)
95
94
93
92
91
90
89
88
87
86
85
12/9/93
5/10/94
8/23/94
10/14/94
11/15/94
12/12/94
1/16/95
2/13/95
3/14/95
Date of Gauging Event
Groundwater
Product

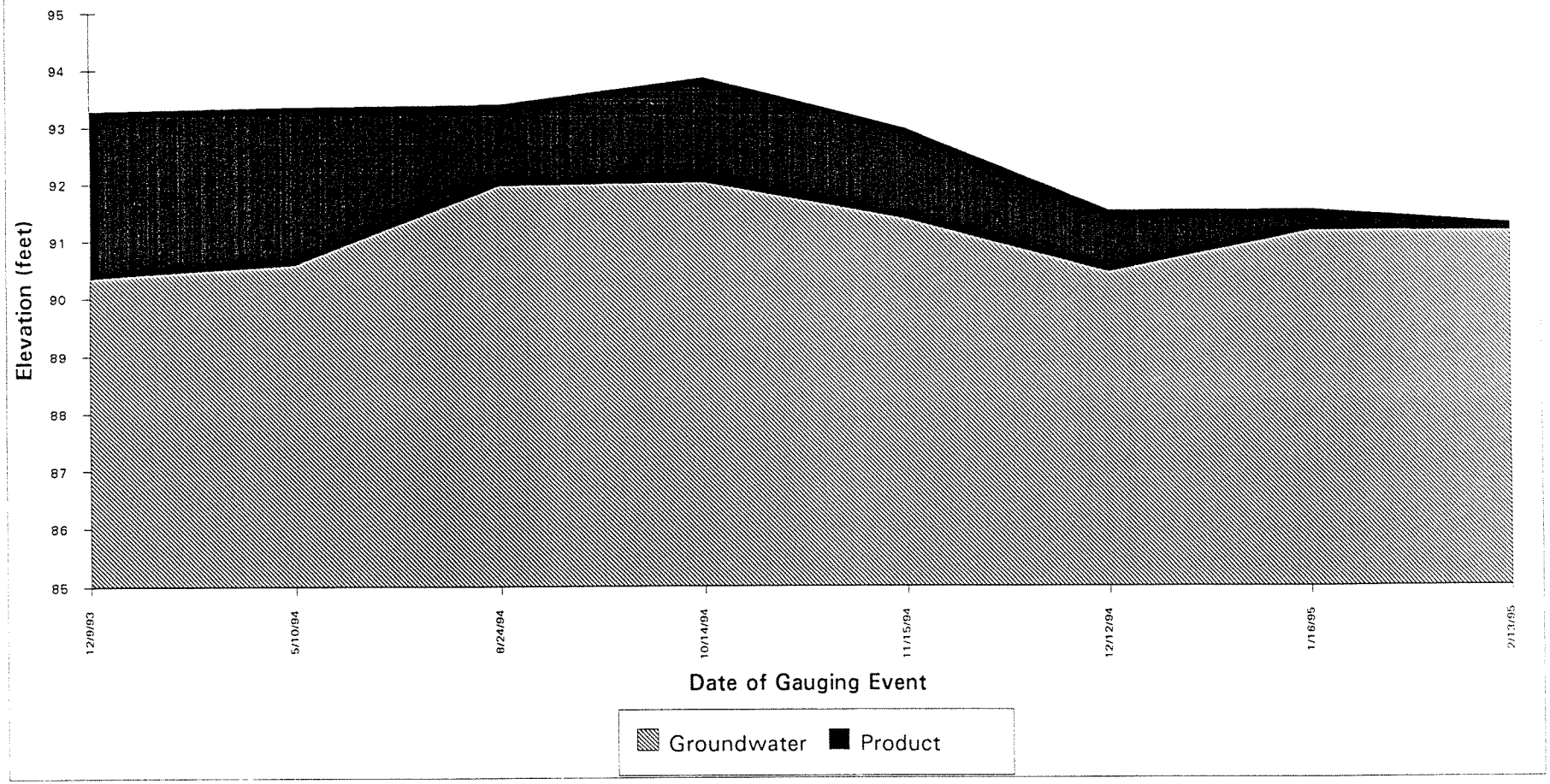

Product Thickness
RW-10
Elevation (feet)
95
94
93
92
91
90
89
88
87
86
85
12/9/93
8/23/94
10/14/94
11/15/94
12/12/94
1/16/95
2/13/95
3/14/95
Date of Gauging Event
Groundwater
Product


Product Thickness
RW-13
Elevation (feet)
95
94
93
92
91
90
89
88
87
86
85
12/9/93
5/10/94
8/23/94
10/14/94
11/15/94
12/12/94
1/16/95
2/13/95
3/14/95
Date of Gauging Event
Groundwater
Product

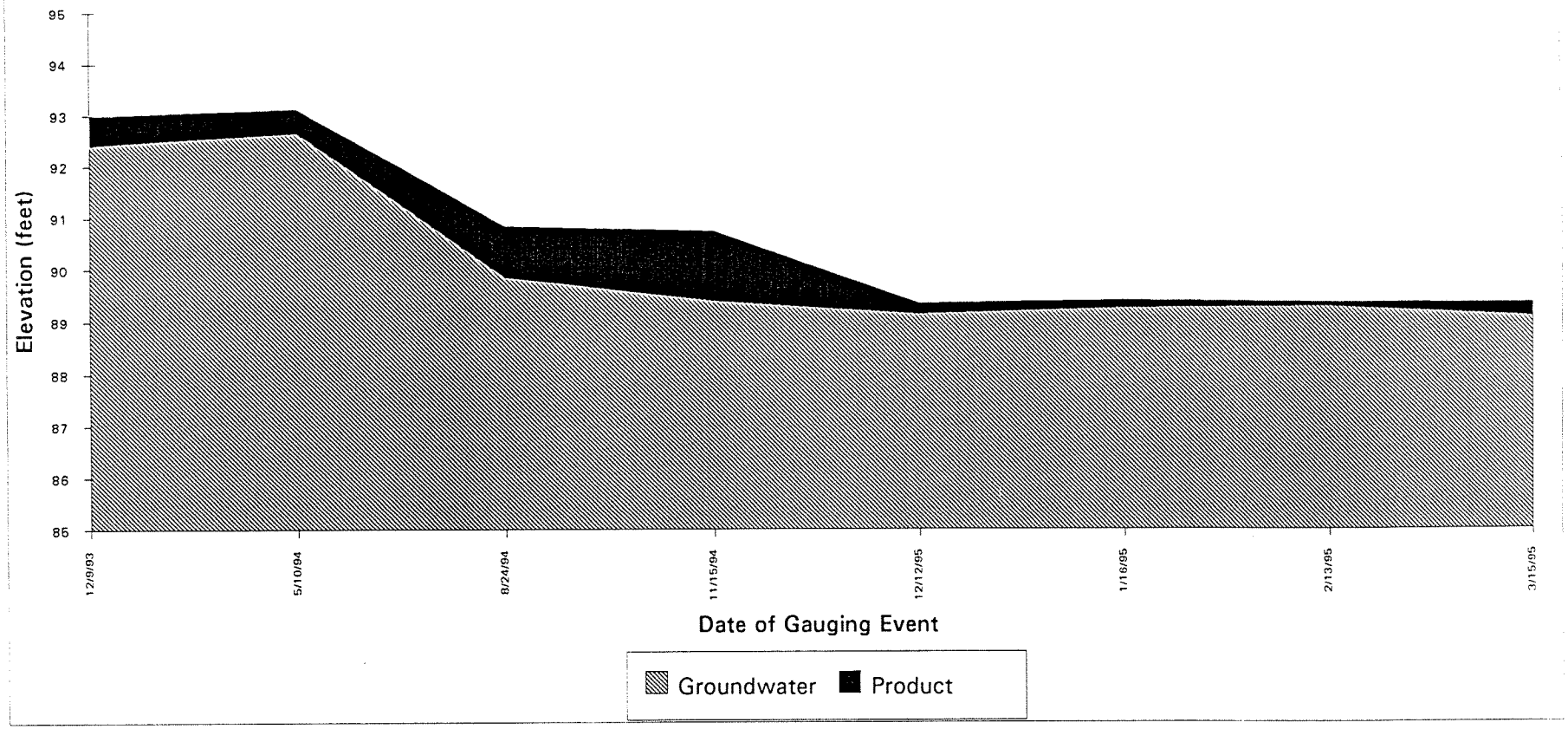
Product Thickness
RW-15



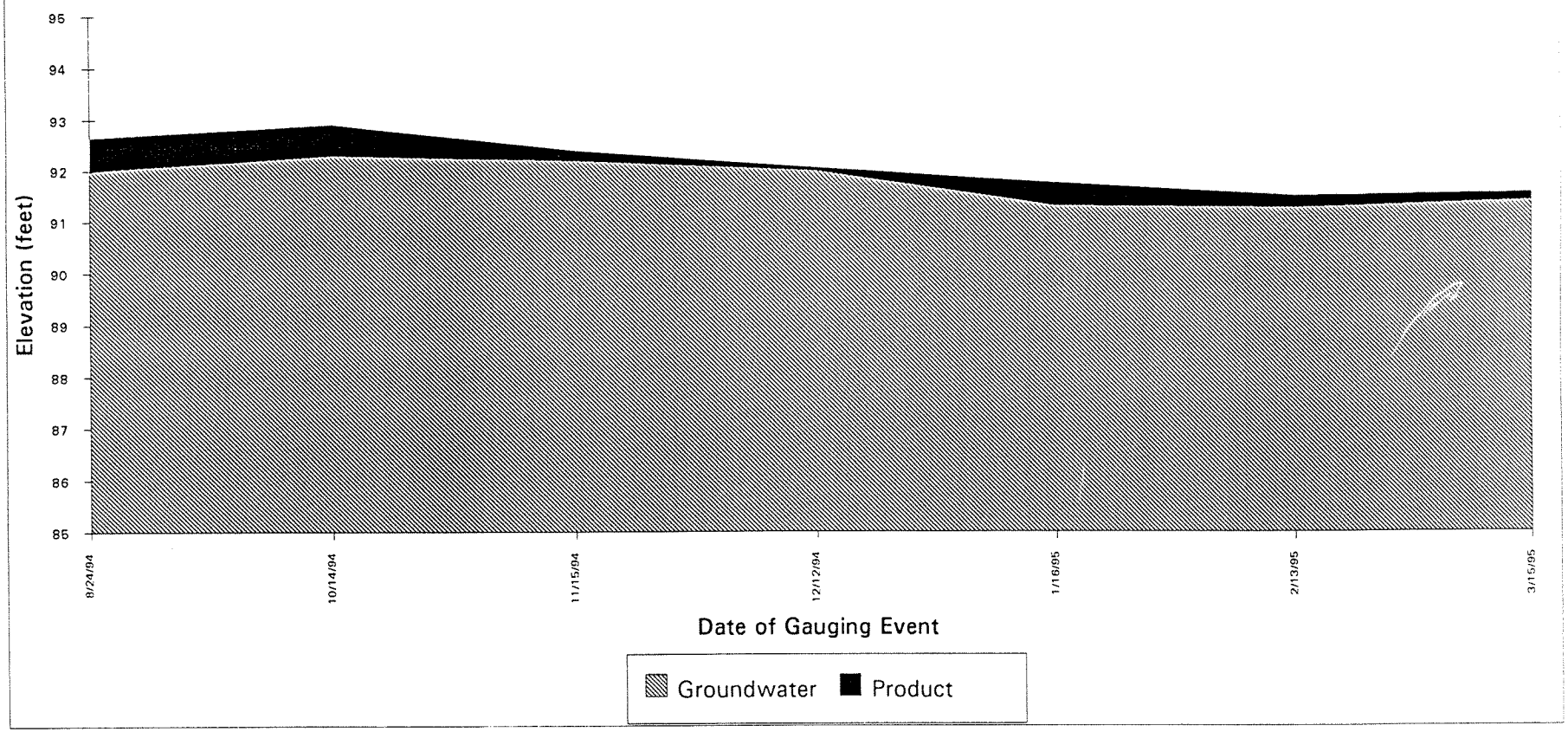
Product Thickness
RW-24



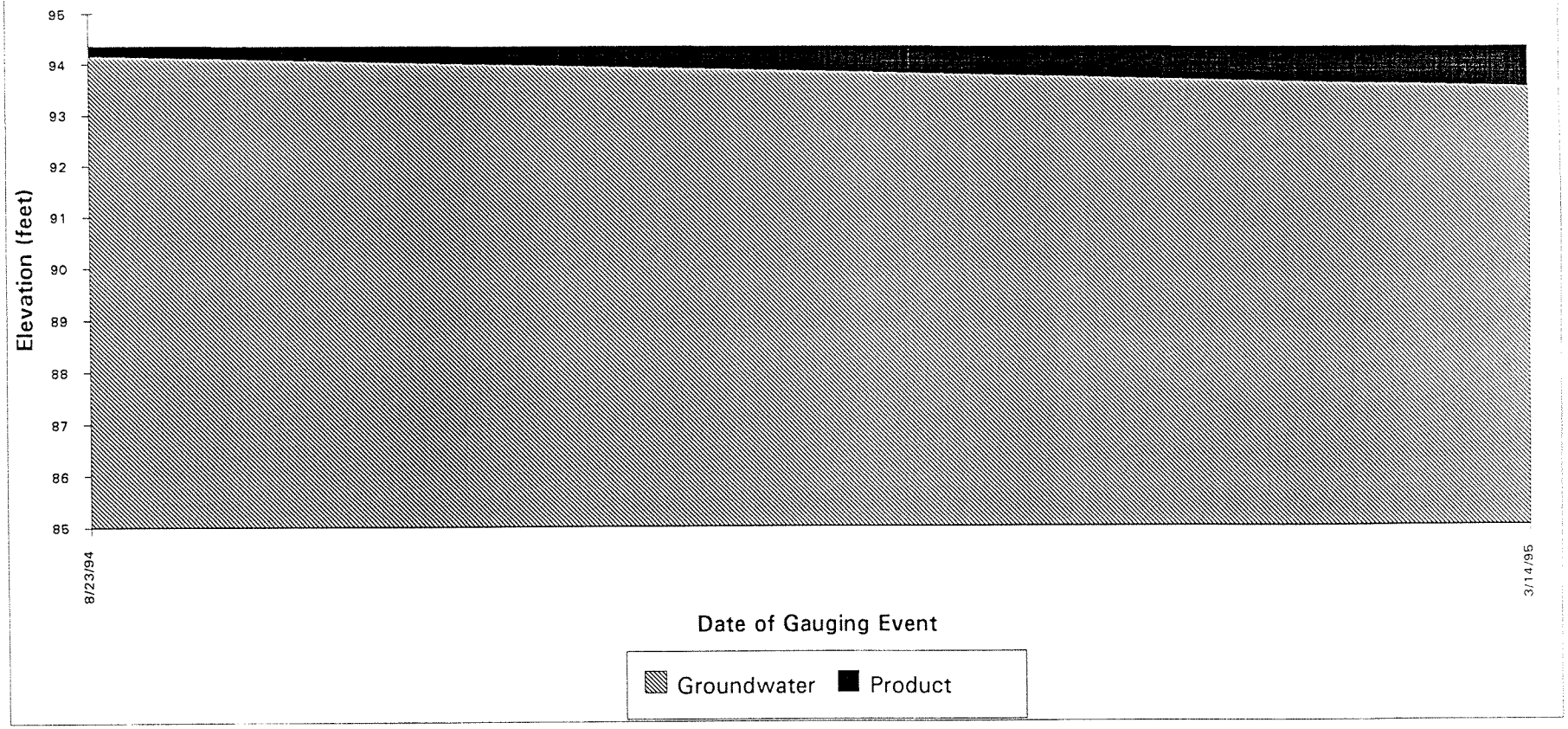
Product Thickness
RW-30



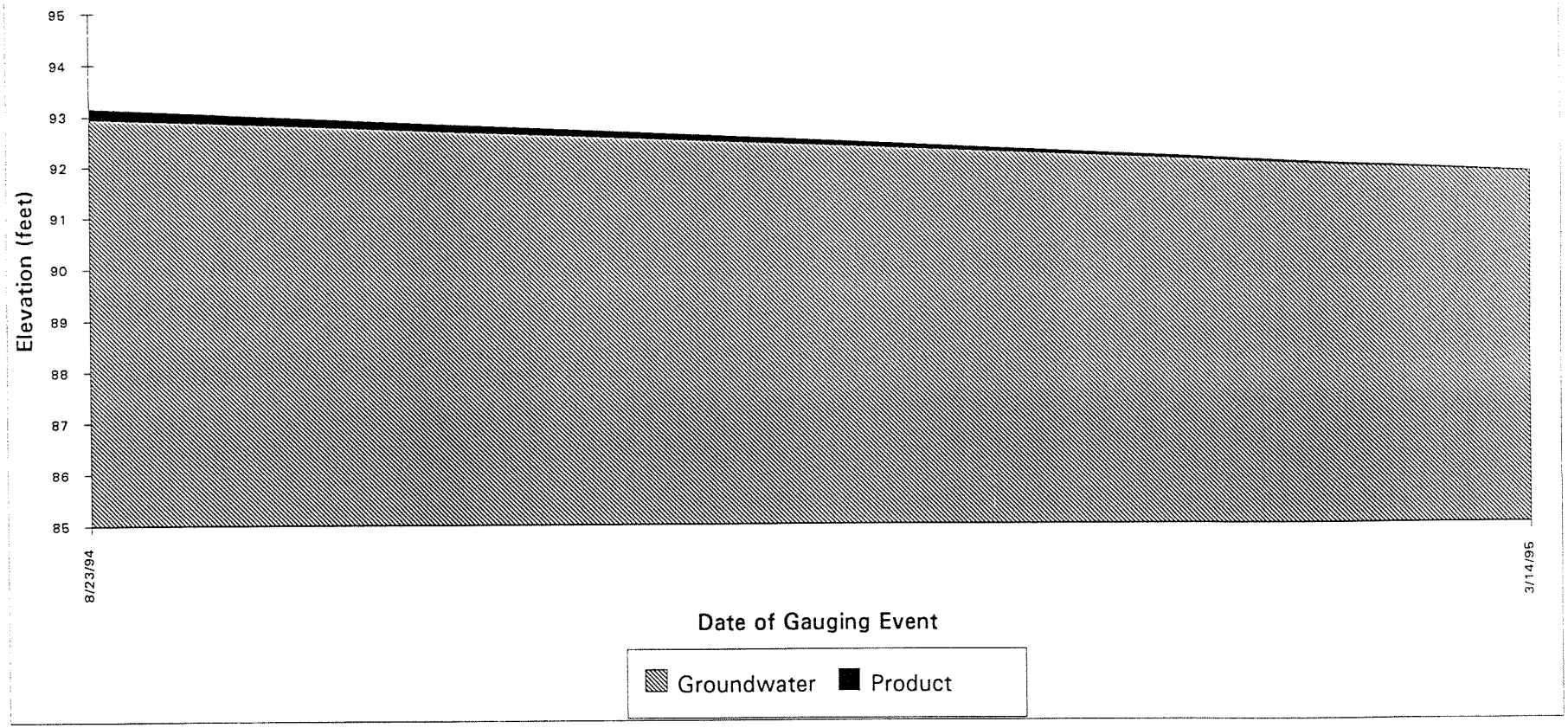
Product Thickness
RW-39



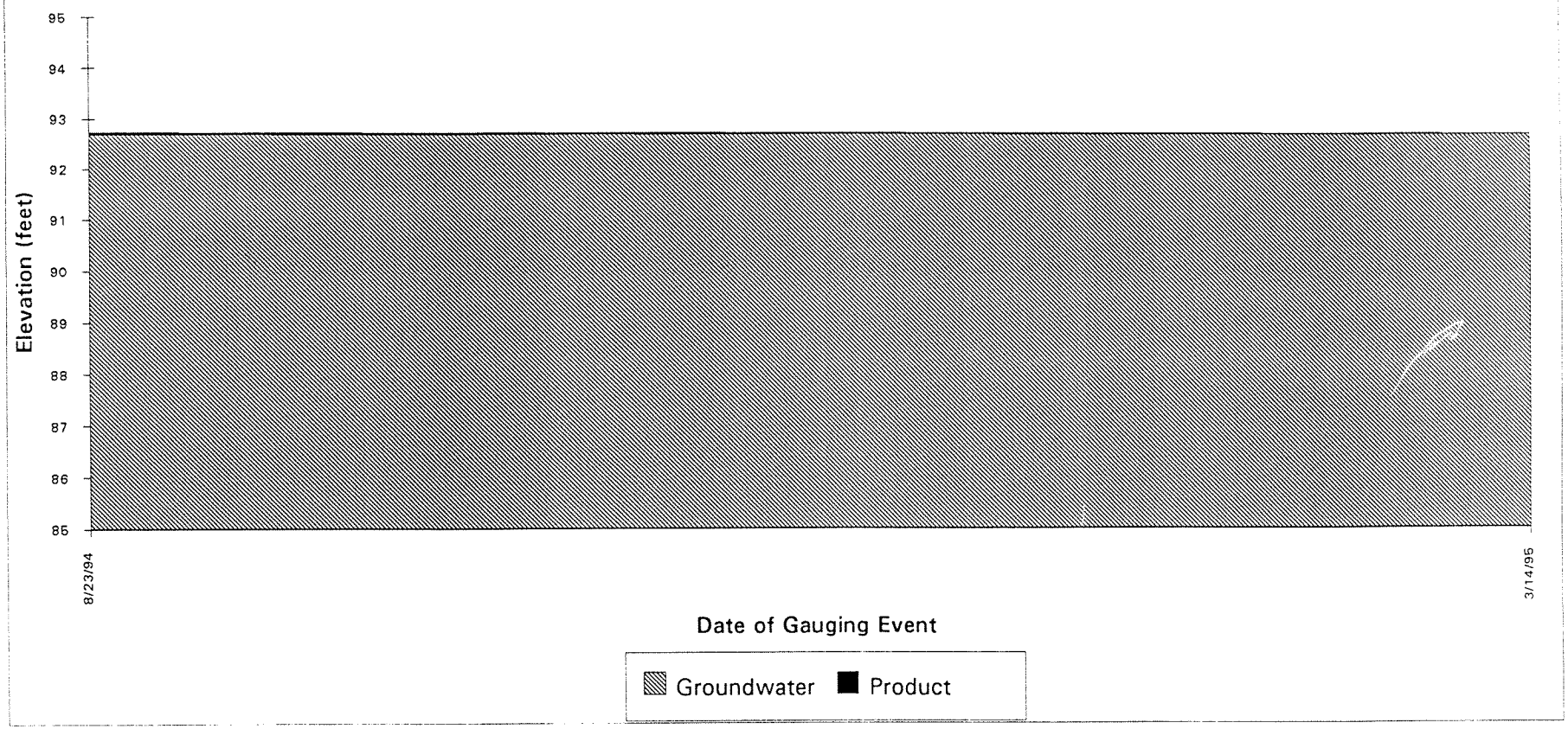
Product Thickness
MW-1



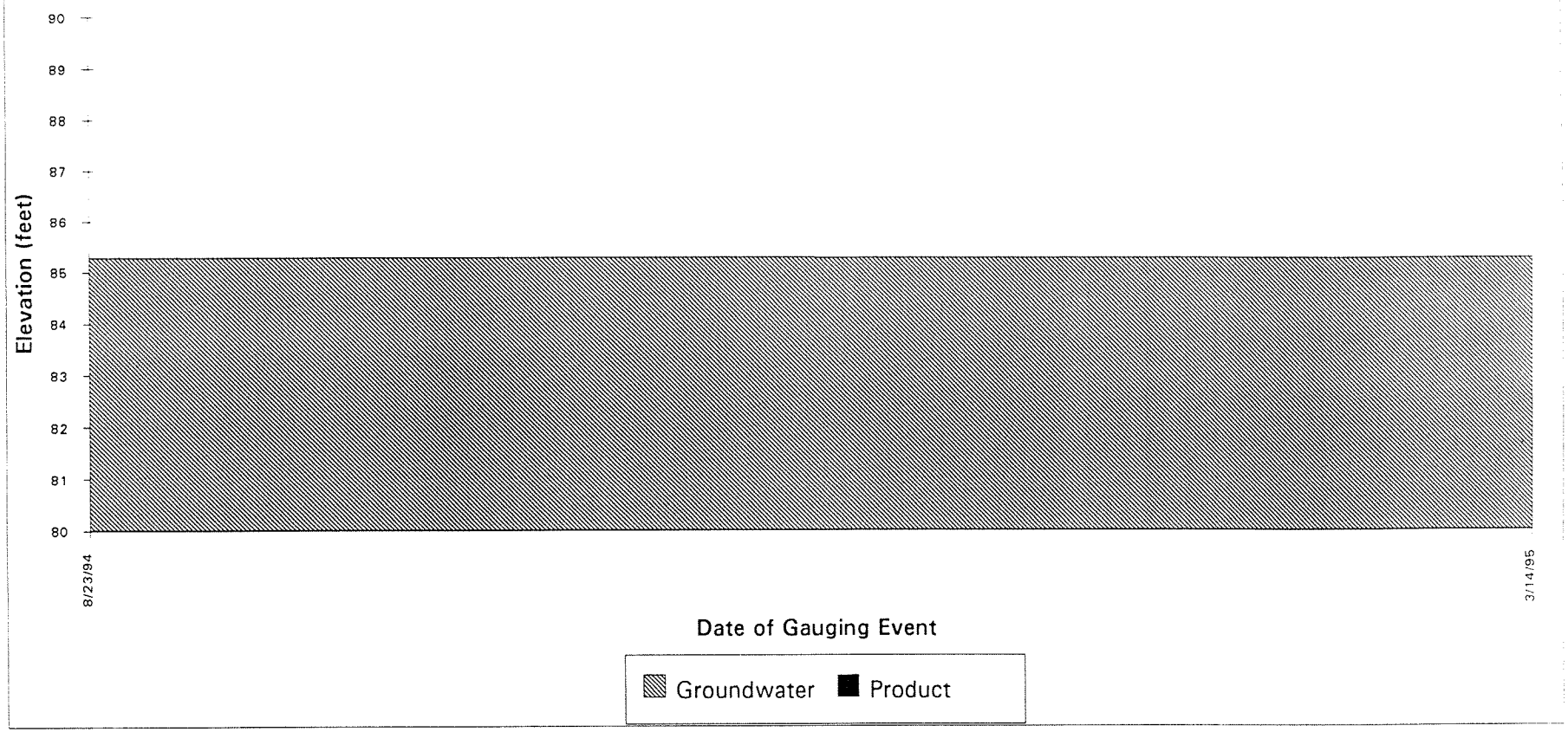
Product Thickness
MW-2



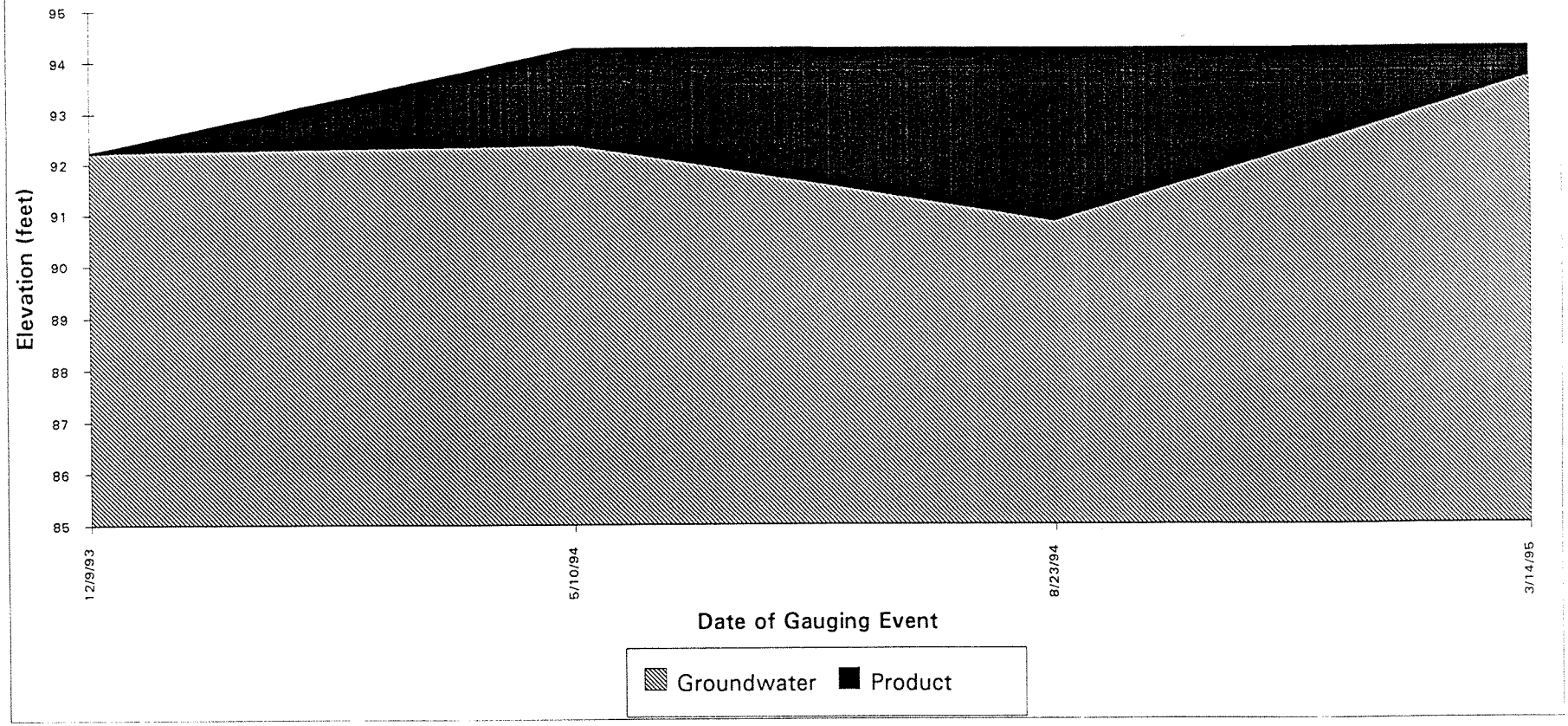
Product Thickness
MW-4



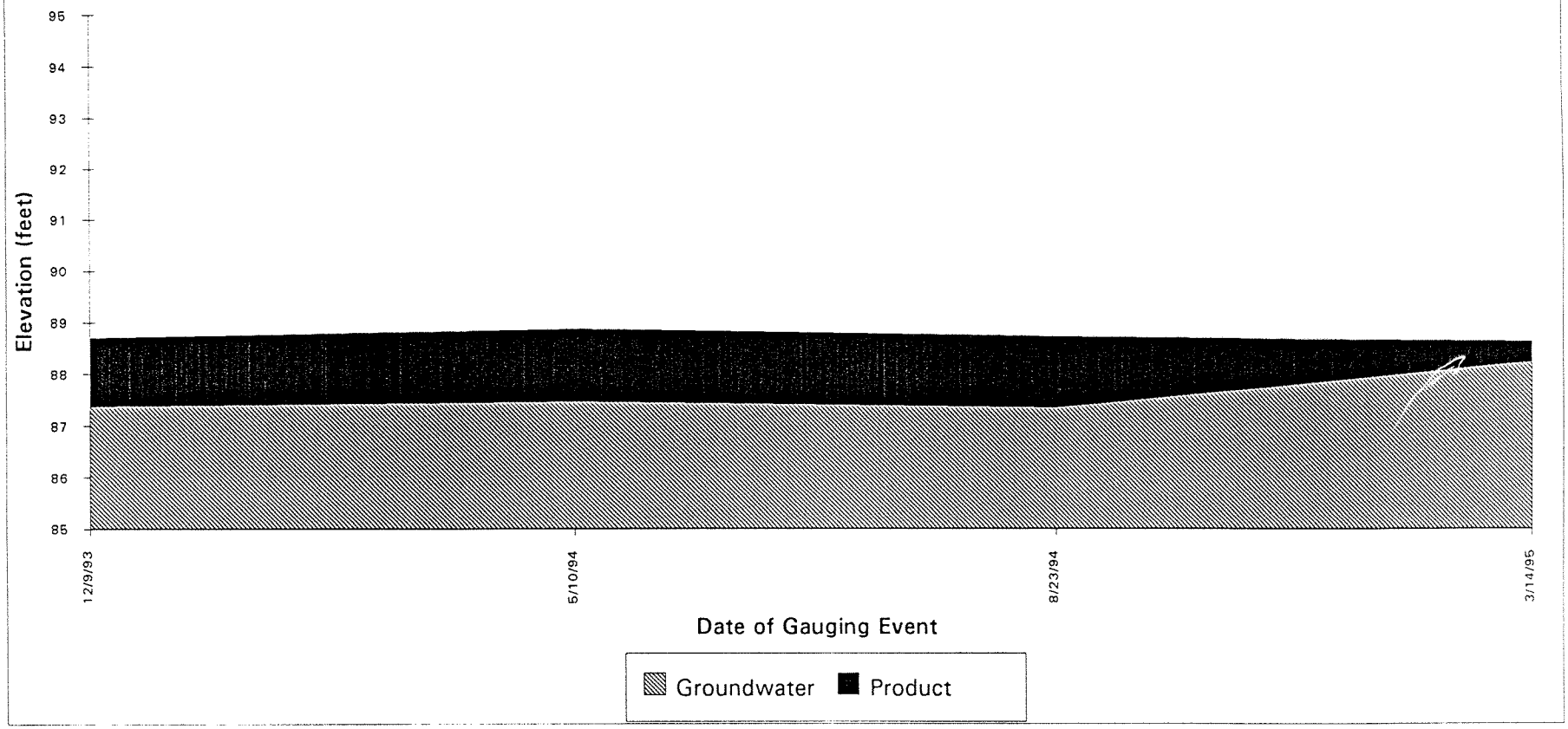
Product Thickness
MW-7



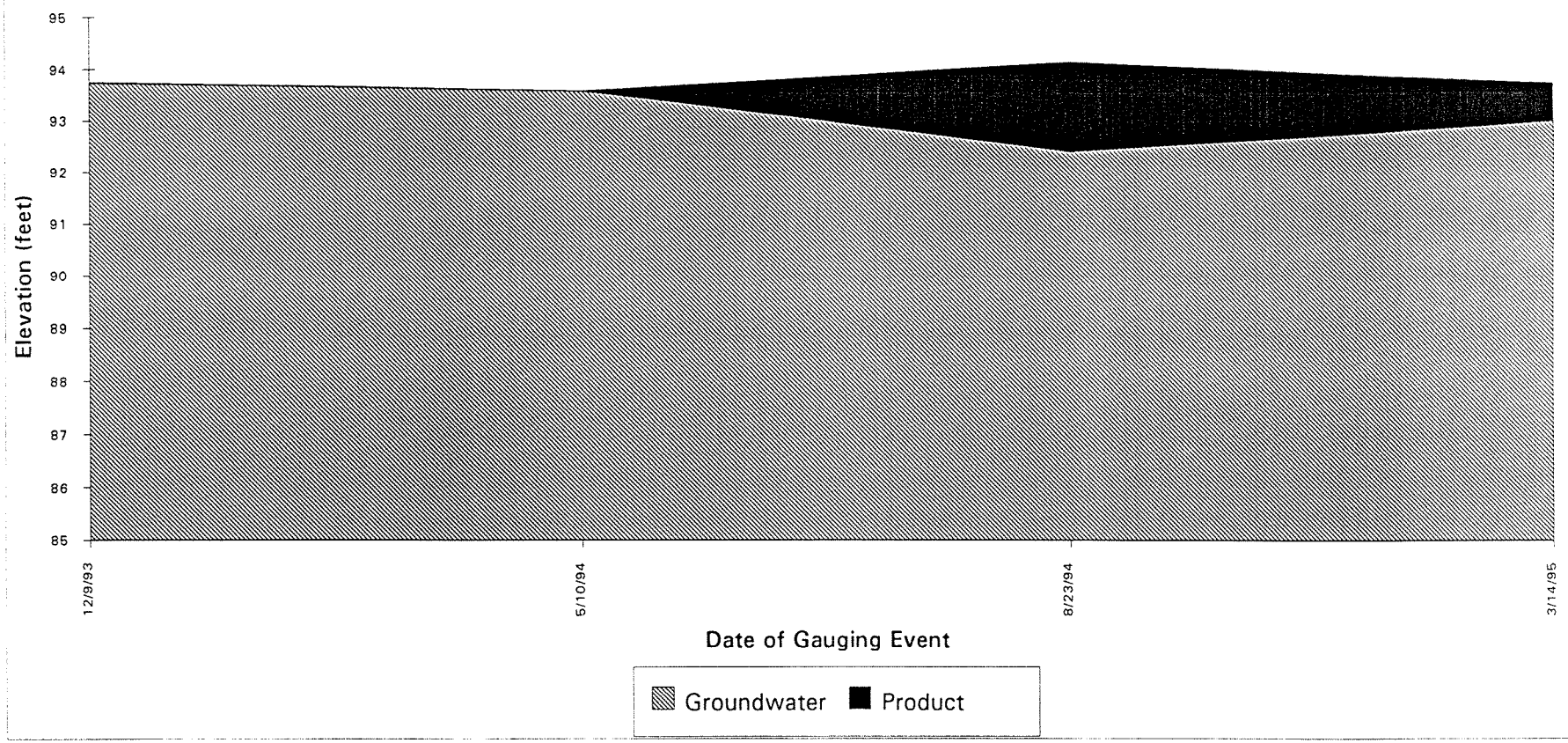
Product Thickness
MW-8

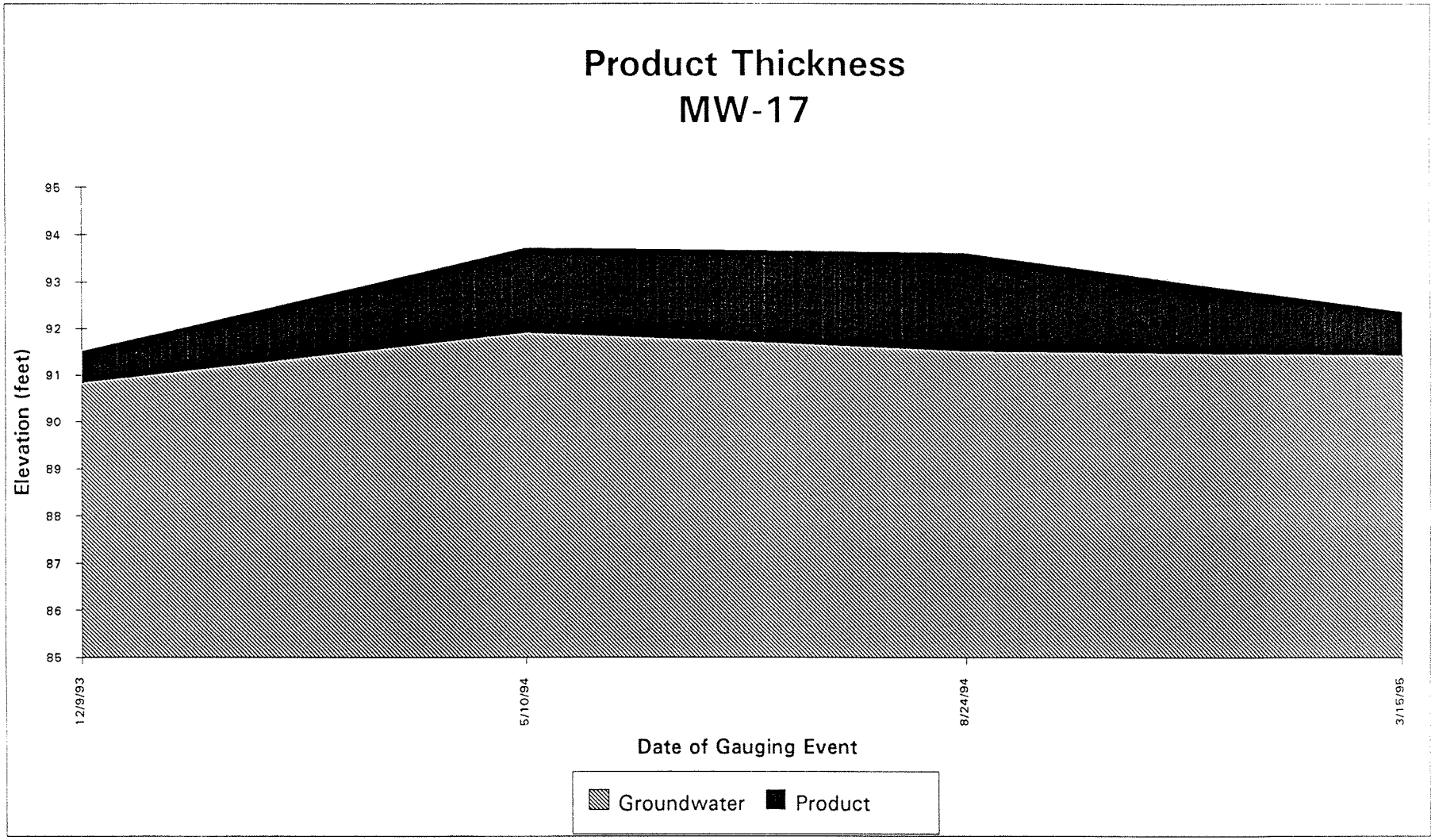


Product Thickness
MW-11

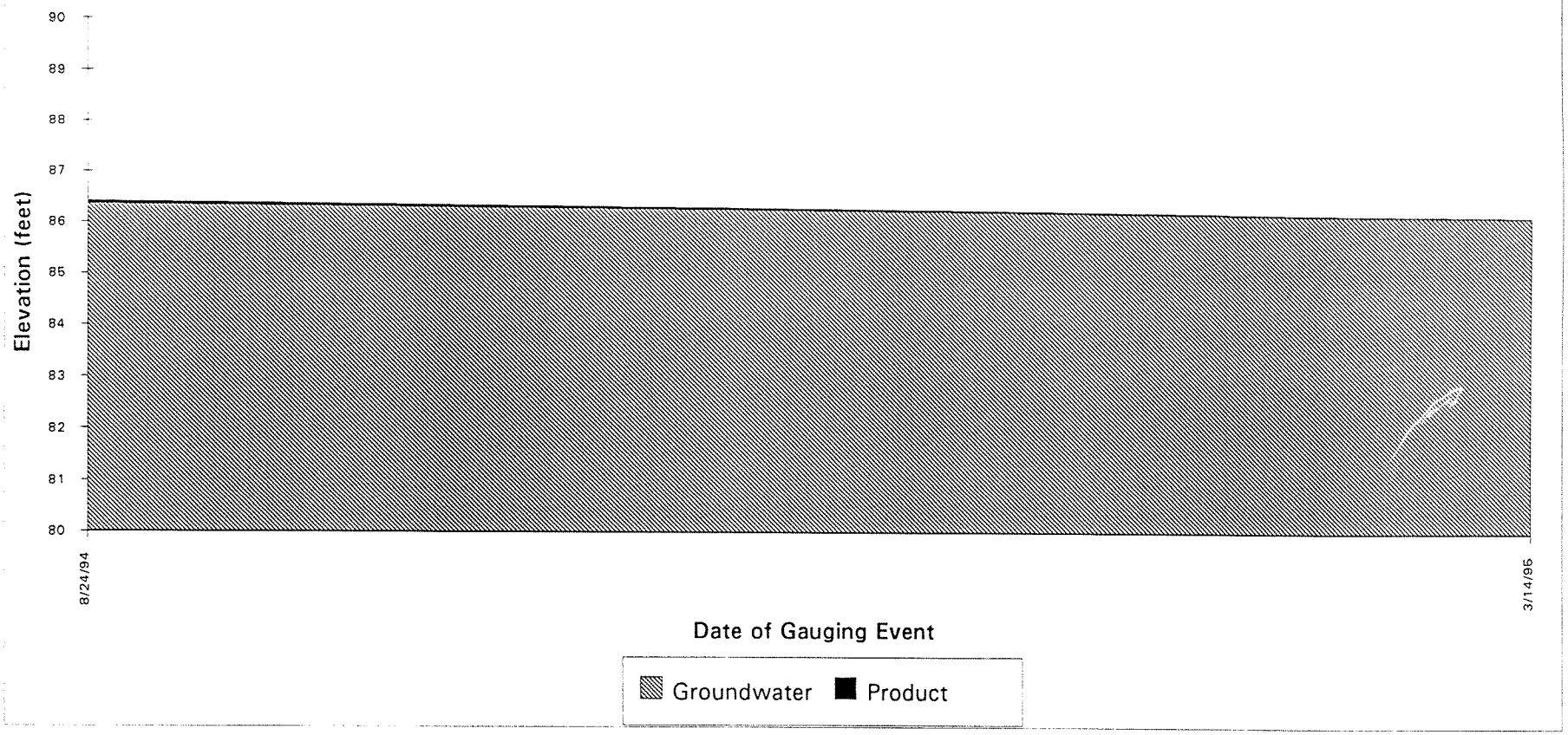


Product Thickness
MW-12

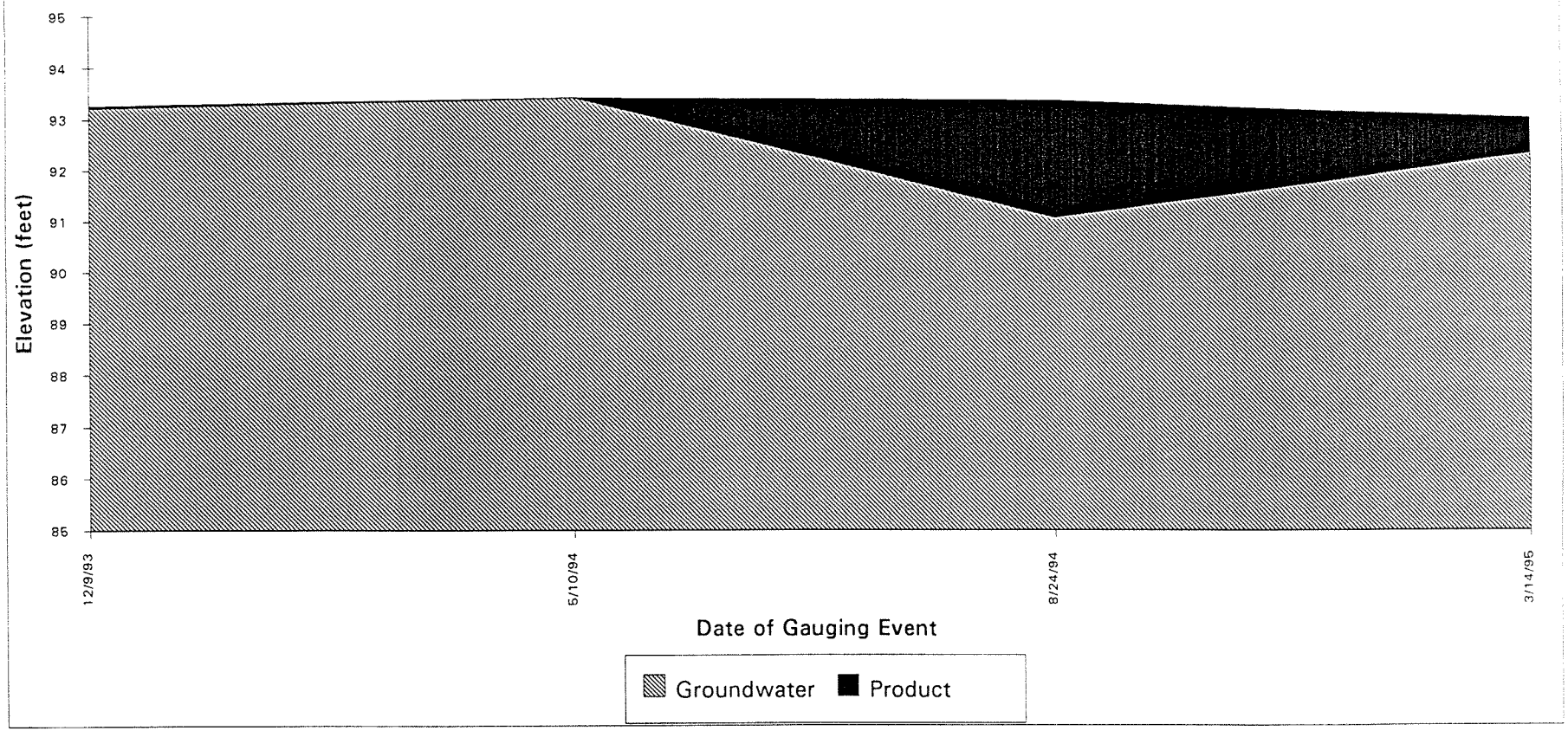



Product Thickness
MW-17
Elevation (feet)
95
94
93
92
91
90
89
88
87
86
85
12/9/93
5/10/94
8/24/94
3/15/95
Date of Gauging Event
Groundwater
Product

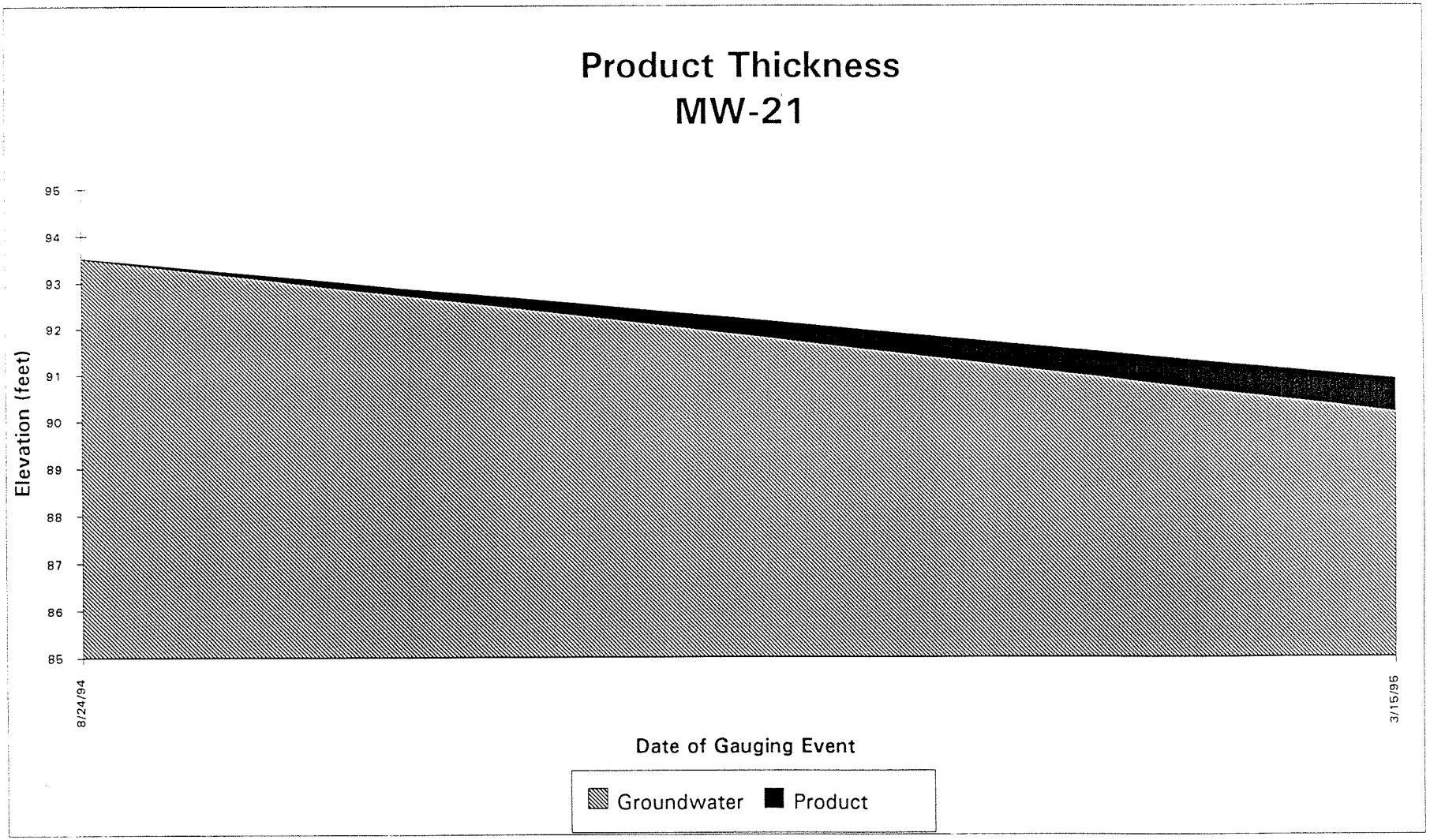
Product Thickness
MW-18



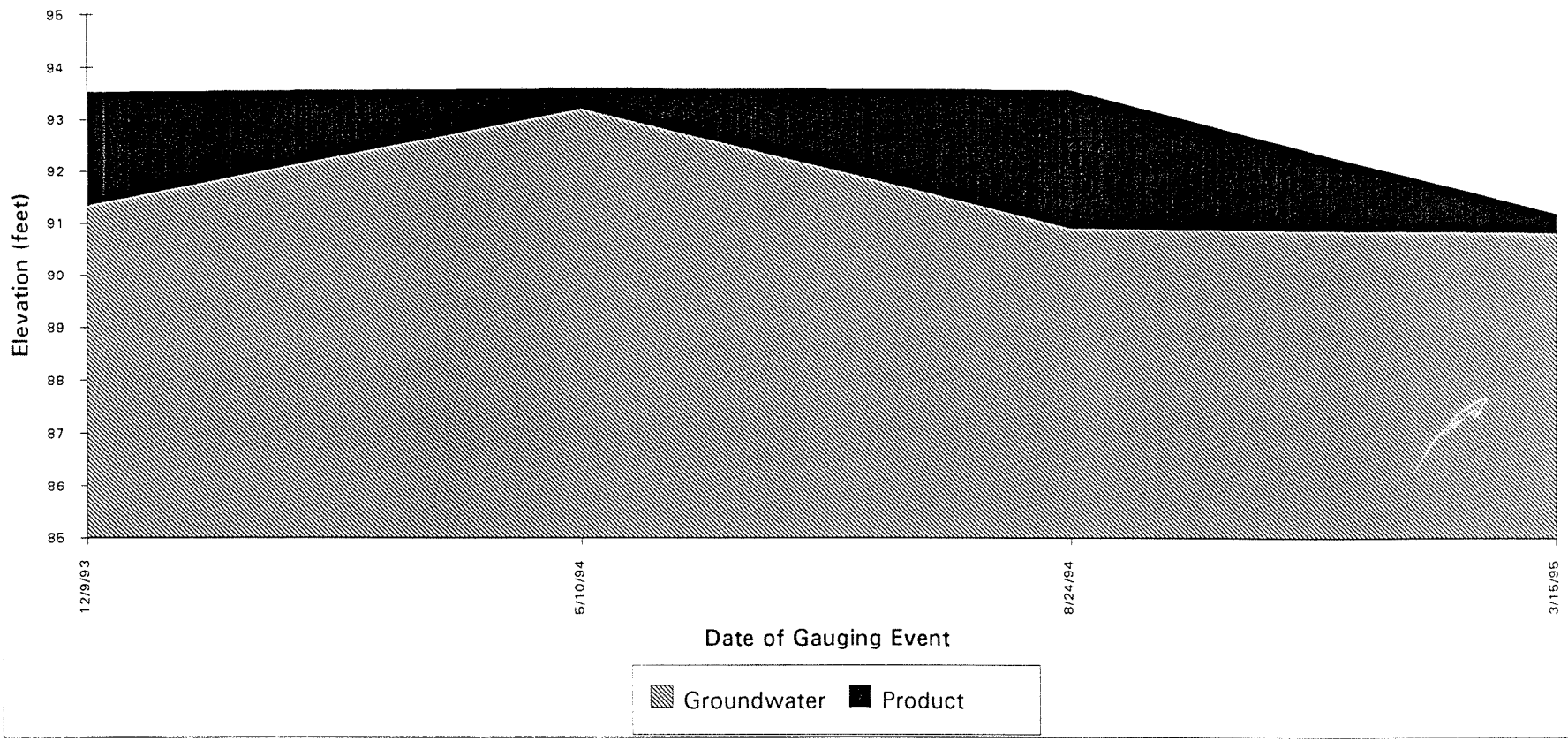
Product Thickness
MW-19



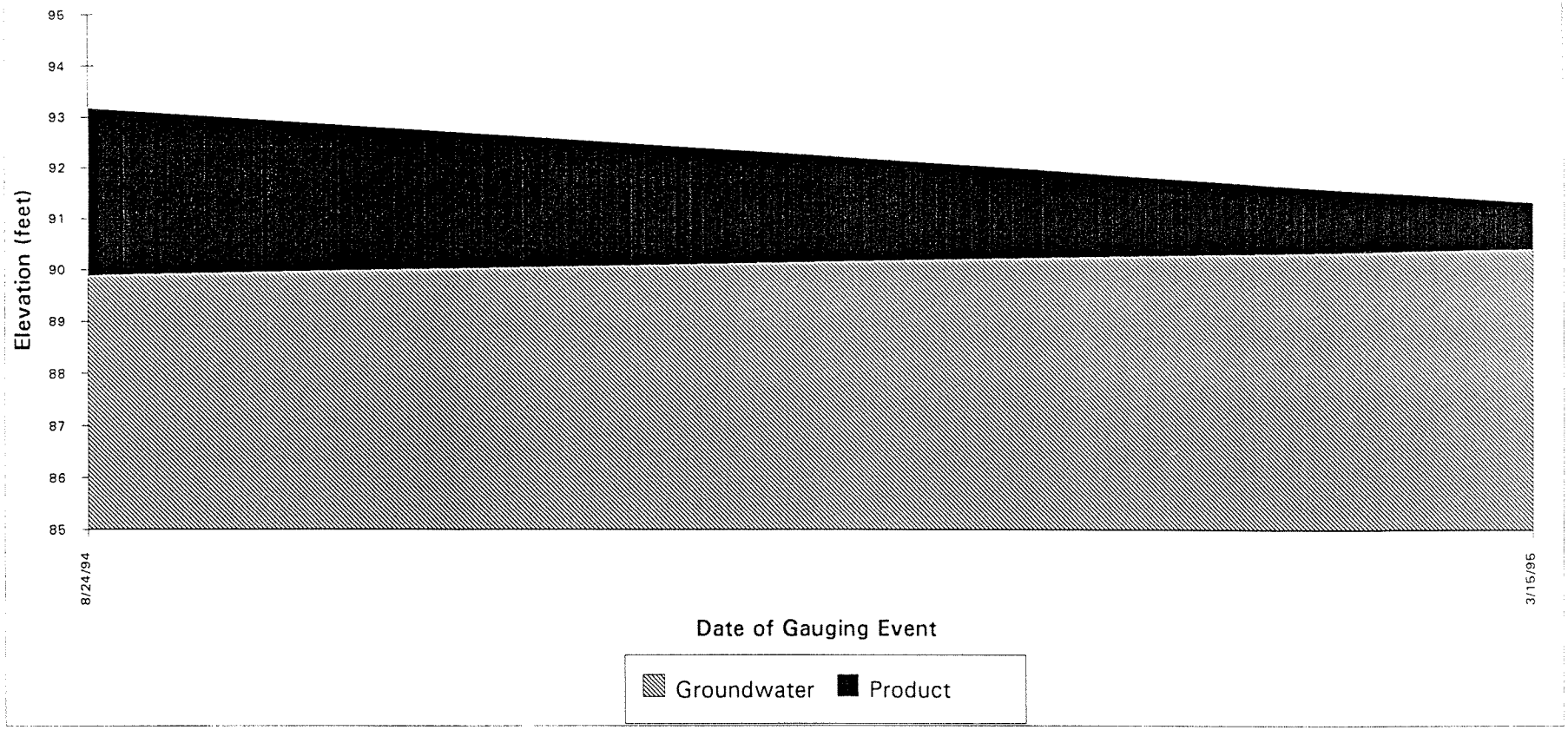
Product Thickness
MW-21



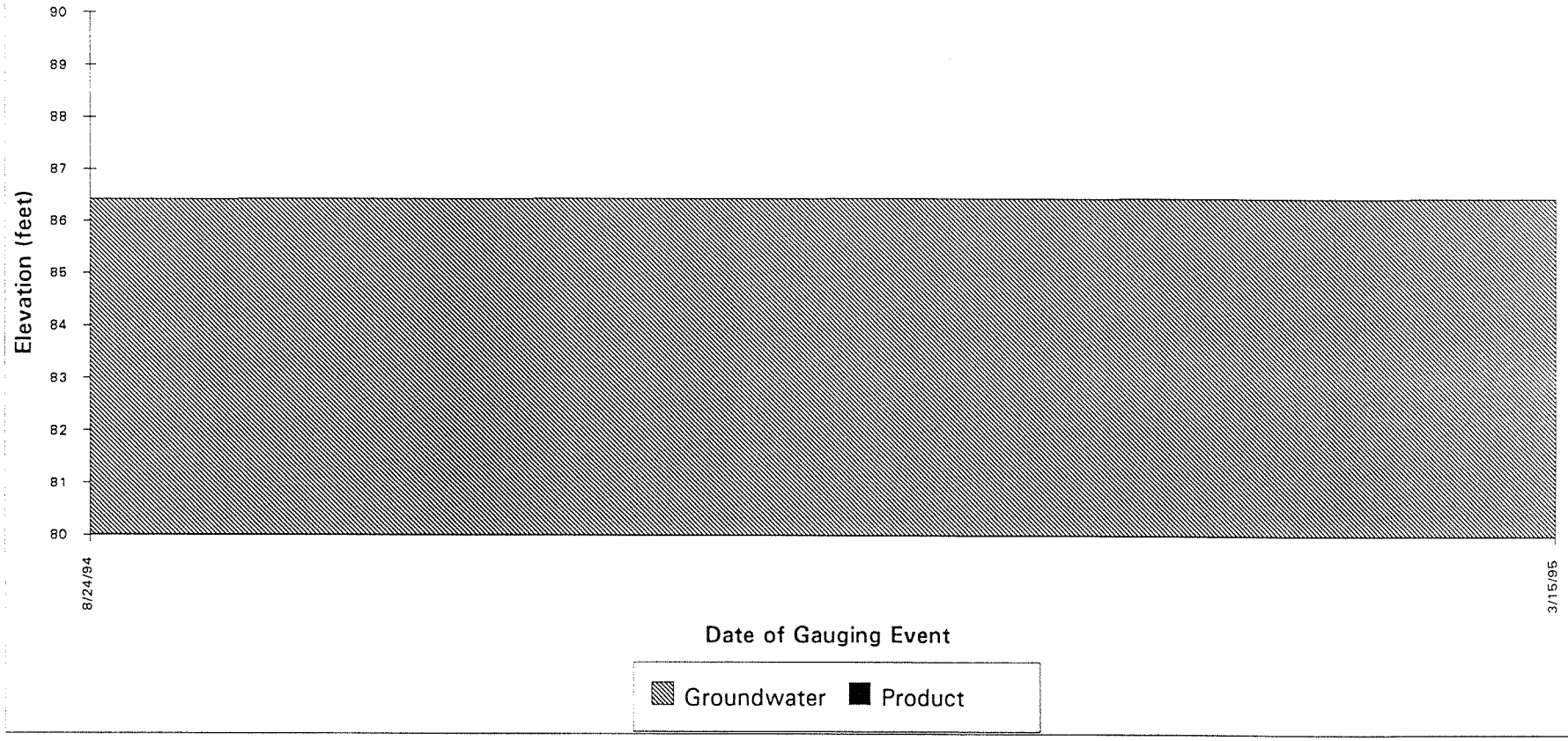
Product Thickness
MW-23

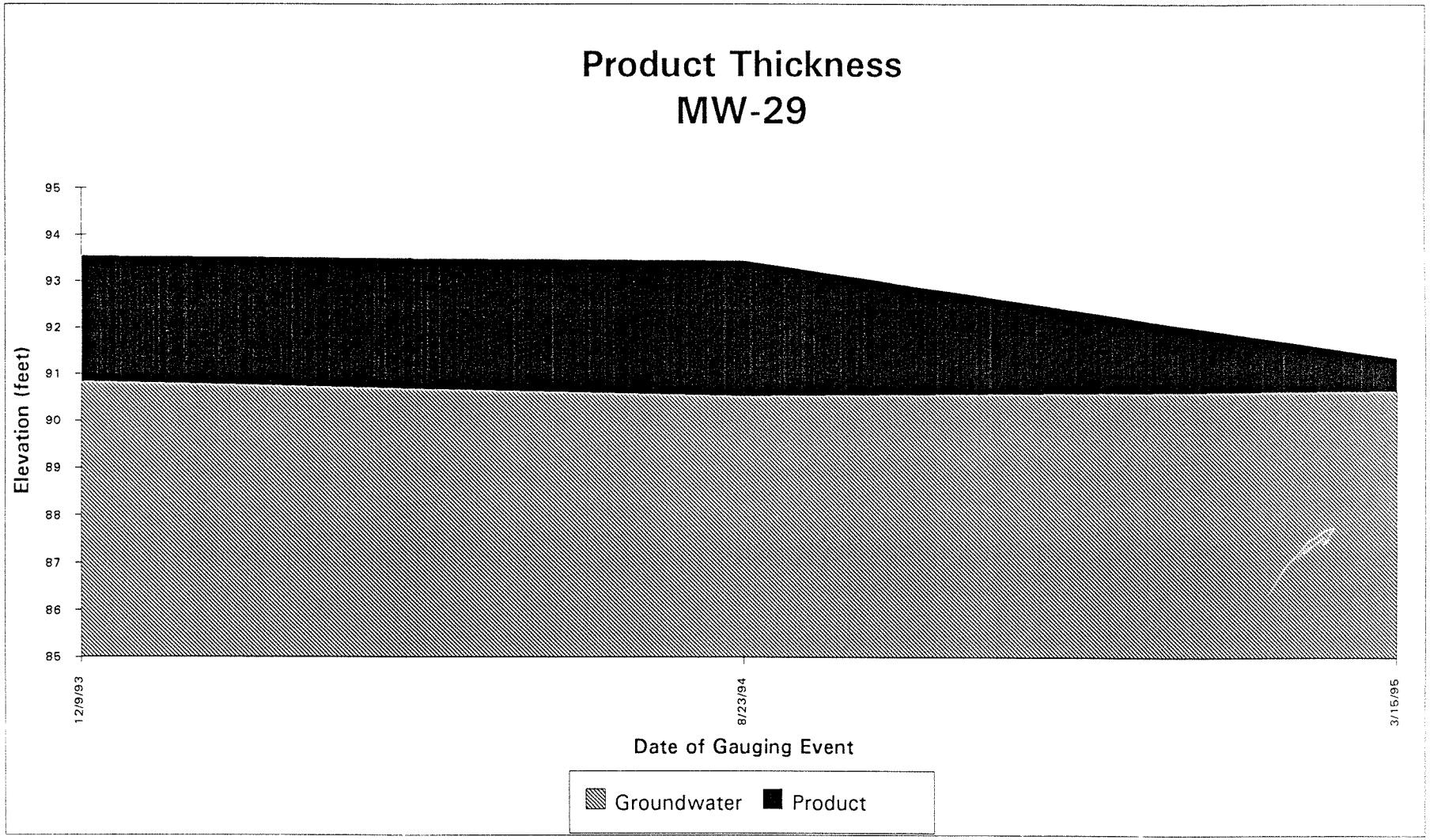


Product Thickness
MW-25

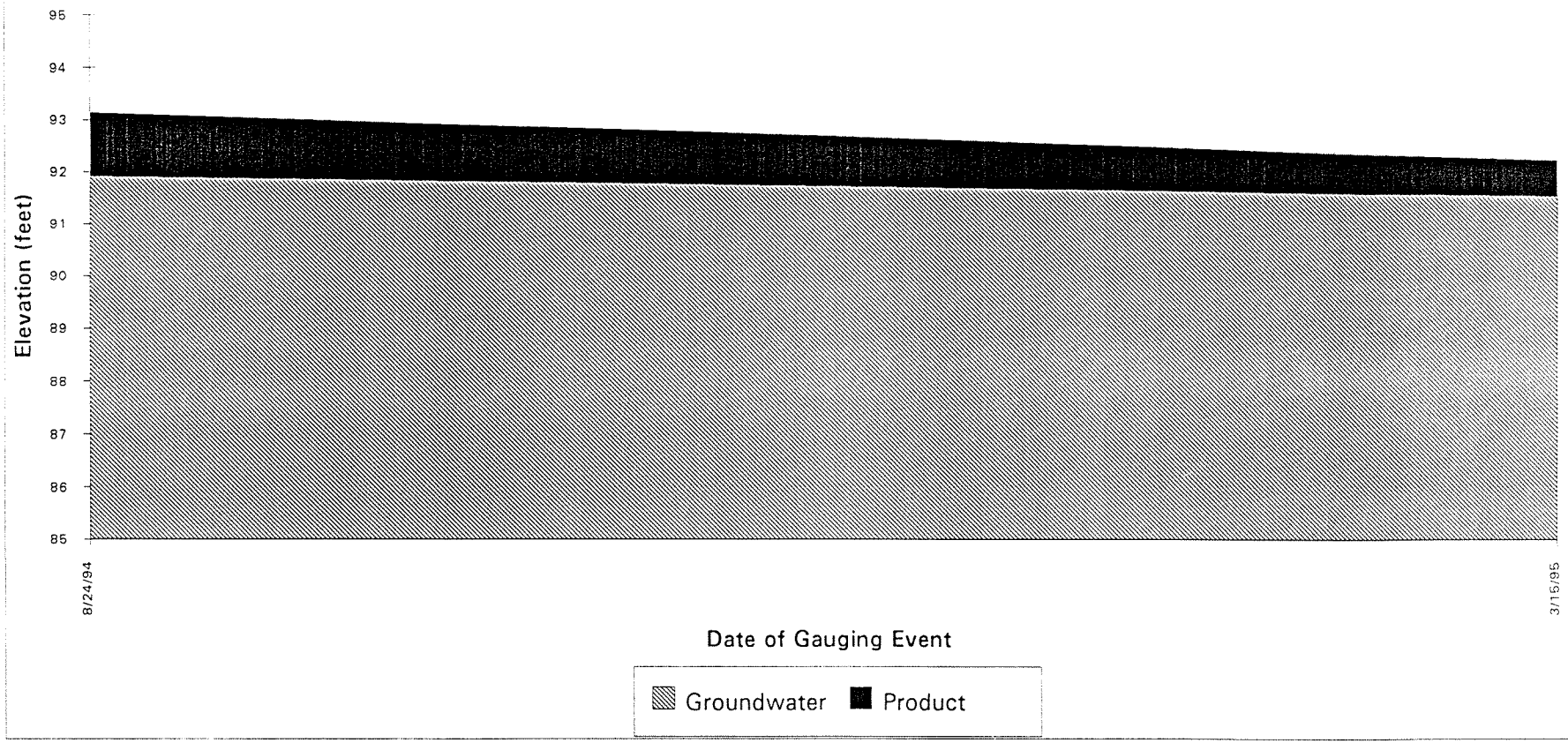


Product Thickness
MW-27




Product Thickness
MW-29
Elevation (feet)
95
94
93
92
91
90
89
88
87
86
85
12/9/93
8/23/94
3/15/95
Date of Gauging Event
Groundwater
Product

Product Thickness
MW-31



APPENDIX A

GROUNDWATER/PRODUCT GAUGING RECORD

GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION, YPSILANTI, MICHIGAN
WILLOW RUN PLANT
GROUNDWATER/PRODUCT GAUGING RECORD

Project No: 70172.03 Date: 01/16/95

Site Location: ATF AREA Field Personnel: JOSE CASTILLO

Well I.D.	Well Type	Inner Well			Outer Well			Comments
		Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	
RW-3	COMBINED	7.18	8.14	0.96	6.85	7.35	0.5	
RW-10	COMBINED	----	6.71	0.0	6.41	7.59	1.18	
RW-13	COMBINED	----	7.38	0.0	8.40	8.75	0.35	
RW-15	COMBINED	----	6.89	0.0	7.36	7.80	0.44	
RW-24	COMBINED	----	8.89	0.0	8.32	8.69	0.37	
RW-30	COMBINED	9.89	10.01	0.12	10.44	10.58	0.14	
RW-39	COMBINED	----	8.60	0.0	8.03	8.49	0.46	

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GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION, YPSILANTI, MICHIGAN
WILLOW RUN PLANT
GROUNDWATER/PRODUCT GAUGING RECORD

Project No: 70172.07 Date: 02/13/95

Site Location: ATF AREA Field Personnel: JOSE CASTILLO

Well I.D.	Well Type	Inner Well			Outer Well			Comments
		Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	
RW-3	COMBINED	7.81	8.10	0.29	7.14	7.20	0.06	
RW-10	COMBINED	----	8.18	0	6.95	7.24	0.29	
RW-13	COMBINED	----	7.88	0	8.91	9.01	0.10	
RW-15	COMBINED	----	6.74	0	7.76	7.81	0.05	
RW-24	COMBINED	----	8.78	0	8.56	8.70	0.14	
RW-30	COMBINED	9.91	10.03	0.12	10.48	10.55	0.07	
RW-39	COMBINED	----	8.75	0	8.29	8.52	0.23	

GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION, YPSILANTI, MICHIGAN
WILLOW RUN PLANT
GROUNDWATER/PRODUCT GAUGING RECORD

Project No: 70172.11 Date: 03/14/95

Site Location: ATF AREA Field Personnel: JOSE CASTILLO

Well I.D.	Well Type	Inner Well			Outer Well			Comments
		Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	
MW-1	COMBINED	----	5.21	0	5.31	6.11	0.79	
MW-2	COMBINED	----	5.91	0	----	6.55	0	
RW-3	COMBINED	6.51	7.40	0.89	6.55	6.85	0.3	
MW-4	COMBINED	----	5.20	0	----	5.54	0	
MW-5	SINGLE	-----	6.65	0	----	----	----	
MW-7	COMBINED	----	8.80	0	----	8.92	0	
MW-8	COMBINED	-----	5.51	0	5.5	6.10	0.60	
RW-10	COMBINED	----	7.24	0	6.50	6.75	0.25	
MW-11	COMBINED	----	7.20	0	6.75	7.14	0.39	
MW-12	SINGLE	6.4	7.14	0.74	----	----	----	
RW-13	COMBINED	----	8.13	0	7.61	7.72	0.11	
RW-15	COMBINED	----	6.32	0	7.28	7.31	0.03	
MW-17	COMBINED	----	6.4	0	7.35	8.29	0.94	

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GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION, YPSILANTI, MICHIGAN
WILLOW RUN PLANT
GROUNDWATER/PRODUCT GAUGING RECORD
CONTINUED

Project No: 70172.11
Site Location: ATF AREA

Date: 03/14/95
Field Personnel: JOSE CASTILLO

Well I.D.	Well Type	Inner Well			Outer Well			Comments
		Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	
MW-18	COMBINED	----	8.6	0	----	9.11	0	
MW-19	COMBINED	----	6.84	0	6.76	7.44	0.68	
MW-21	SINGLE	8.78	9.5	0.72	----	----	----	
MW-23	COMBINED	----	7.71	0	8.6	9.03	0.43	
RW-24	COMBINED	NR	NR	NR	NR	NR	NR	NOT RECORDED. RECOVERY WELL BROKE DOWN.
MW-25	COMBINED	----	7.17	0	8.41	9.33	0.92	
MW-27	COMBINED	----	8.60	0	----	8.85	0	
MW-29	SINGLE	8.35	9.05	0.70	----	----	----	
RW-30	COMBINED	9.98	10.10	0.12	10.50	10.75	0.25	
MW-31	COMBINED	----	7.12	0	7.66	8.35	0.69	
RW-39	COMBINED	----	8.51	0	8.24	8.39	0.15	

APPENDIX B

OPERATION AND MAINTENANCE LOGS

GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION
YPSILANTI, MICHIGAN

OPERATIONS AND MAINTENANCE LOG

Project No.: 70172.03
Site Location: ATF Area
Field Personnel: Jose Castillo

Date: 01/17/95
Time of Visit: 0800
Well Number: RW-3

	EQUIPMENT TYPE	PARAMETERS	MEASUREMENTS (UNITS)	COMMENTS
PULSE PUMP SYSTEM	Recovery Pump	Supply pressure		GOOD AND STEADY
		Pumping Rate	5 CYCLES/MIN	
		Collection system hardware		IN GOOD CONDITION
	Recovery Pump Screen	Inspected for fouling and clean (monthly)		CLEAN AND IN GOOD CONDITION
	Collection Tank	Inspect for fluid levels (monthly), check level (monthly)	N/A	N/A
	Recovery Pump Controller	Check pressure regulators		IN GOOD CONDITION
		Inspect fittings for leaks (monthly)		FITTINGS AND TRANSFER LINE IN GOOD CONDITION
		Inspect Pressure gauges and transfer lines	40 PSI	
		Adjust to max product recovery		SAME AS PREVIOUS MONTH
	Fluid Flow Meter (Counter)	Check operation - record reading	30 MIL/CYCLE	
SOLO PUMP SYSTEM	Float Control Dial	Maximize adjustments	N/A	N/A
	Pump Suction Lines	Check integrity and fouling	N/A	N/A
	Pump Discharge Lines	Check integrity and fouling	N/A	N/A
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
	Recovery Pump Screen	Inspect for fouling and clean (monthly)	N/A	N/A

GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION
YPSILANTI, MICHIGAN

OPERATIONS AND MAINTENANCE LOG

Project No.: 70172.03
Site Location: ATF Area
Field Personnel: Jose Castillo

Date: 01/17/95
Time of Visit: 0900
Well Number: RW-10

	EQUIPMENT TYPE	PARAMETERS	MEASUREMENTS (UNITS)	COMMENTS
PULSE PUMP SYSTEM	Recovery Pump	Supply pressure		GOOD & STEADY
		Pumping Rate	5 CYCLES/MIN	
		Collection system hardware		IN GOOD CONDITION
	Recovery Pump Screen	Inspected for fouling and clean (monthly)		CLEAN AND IN GOOD CONDITION
	Collection Tank	Inspect for fluid levels (monthly), check level (monthly)	N/A	N/A
	Recovery Pump Controller	Check pressure regulators		IN GOOD CONDITION
		Inspect fittings for leaks (monthly)		FITTINGS & TRANSFER LINES IN GOOD CONDITION
		Inspect Pressure gauges and transfer lines	40 PSI	
		Adjust to max product recovery		SAME AS PREVIOUS MONTH
	Fluid Flow Meter (Counter)	Check operation - record reading	580 MIL/CYCLE	
SOLO PUMP SYSTEM	Float Control Dial	Maximize adjustments	N/A	N/A
	Pump Suction Lines	Check integrity and fouling	N/A	N/A
	Pump Discharge Lines	Check integrity and fouling	N/A	N/A
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
	Recovery Pump Screen	Inspect for fouling and clean (monthly)	N/A	N/A

GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION
YPSILANTI, MICHIGAN

OPERATIONS AND MAINTENANCE LOG

Project No.: 70172.03
Site Location: ATF Area
Field Personnel: Jose Castillo

Date: 01/17/95
Time of Visit: 1030
Well Number: RW-15

	EQUIPMENT TYPE	PARAMETERS	MEASUREMENTS (UNITS)	COMMENTS
PULSE PUMP SYSTEM	Recovery Pump	Supply pressure		GOOD & STEADY
		Pumping Rate	5 CYCLES/MIN	
		Collection system hardware		IN GOOD CONDITION
	Recovery Pump Screen	Inspected for fouling and clean (monthly)		IN GOOD CONDITION
	Collection Tank	Inspect for fluid levels (monthly), check level (monthly)	N/A	N/A
	Recovery Pump Controller	Check pressure regulators		REGULATORS IN GOOD CONDITION
		Inspect fittings for leaks (monthly)		FITTINGS & LINES IN GOOD CONDITION
		Inspect Pressure gauges and transfer lines	40 PSI	
		Adjust to max product recovery		SAME AS PREVIOUS MONTH
	Fluid Flow Meter (Counter)	Check operation - record reading	300 MIL/CYCLE	
SOLO PUMP SYSTEM	Float Control Dial	Maximize adjustments	N/A	N/A
	Pump Suction Lines	Check integrity and fouling	N/A	N/A
	Pump Discharge Lines	Check integrity and fouling	N/A	N/A
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
	Recovery Pump Screen	Inspect for fouling and clean (monthly)	N/A	N/A

GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION
YPSILANTI, MICHIGAN

OPERATIONS AND MAINTENANCE LOG

Project No.: 70172.03
Site Location: ATF Area
Field Personnel: Jose Castillo

Date: 01/17/95
Time of Visit: 1145
Well Number: RW-13

	EQUIPMENT TYPE	PARAMETERS	MEASUREMENTS (UNITS)	COMMENTS
PULSE PUMP SYSTEM	Recovery Pump	Supply pressure		GOOD & STEADY
		Pumping Rate	4 CYCLES/MIN	
		Collection system hardware		IN GOOD CONDITION
	Recovery Pump Screen	Inspected for fouling and clean (monthly)		CLEAN & IN GOOD CONDITION
	Collection Tank	Inspect for fluid levels (monthly), check level (monthly)	N/A	N/A
	Recovery Pump Controller	Check pressure regulators		IN GOOD CONDITION
		Inspect fittings for leaks (monthly)		FITTINGS & TRANSFER LINES IN GOOD CONDITION
		Inspect Pressure gauges and transfer lines	40 PSI	
		Adjust to max product recovery		SAME AS PREVIOUS MONTH
	Fluid Flow Meter (Counter)	Check operation - record reading	410 MIL/CYCLE	
SOLO PUMP SYSTEM	Float Control Dial	Maximize adjustments	N/A	N/A
	Pump Suction Lines	Check integrity and fouling	N/A	N/A
	Pump Discharge Lines	Check integrity and fouling	N/A	N/A
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
	Recovery Pump Screen	Inspect for fouling and clean (monthly)	N/A	N/A

GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION
YPSILANTI, MICHIGAN

OPERATIONS AND MAINTENANCE LOG

Project No.: 70172.03
Site Location: ATF Area
Field Personnel: Jose Castillo

Date: 01/17/95
Time of Visit: 1245
Well Number: RW-24

	EQUIPMENT TYPE	PARAMETERS	MEASUREMENTS (UNITS)	COMMENTS
PULSE PUMP SYSTEM	Recovery Pump	Supply pressure		GOOD & STEADY
		Pumping Rate	4 CYCLES/MIN	
		Collection system hardware		CLEAN AND IN GOOD CONDITION
	Recovery Pump Screen	Inspected for fouling and clean (monthly)	N/A	N/A
	Collection Tank	Inspect for fluid levels (monthly), check level (monthly)		IN GOOD CONDITION
	Recovery Pump Controller	Check pressure regulators		FITTINGS AND TRANSFER LINES IN GOOD CONDITION
		Inspect fittings for leaks (monthly)	40 PSI	
		Inspect Pressure gauges and transfer lines		SAME AS PREVIOUS MONTH
		Adjust to max product recovery	340 MIL/CYCLE	
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
SOLO PUMP SYSTEM	Float Control Dial	Maximize adjustments	N/A	N/A
	Pump Suction Lines	Check integrity and fouling	N/A	N/A
	Pump Discharge Lines	Check integrity and fouling	N/A	N/A
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
	Recovery Pump Screen	Inspect for fouling and clean (monthly)	N/A	N/A

GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION
YPSILANTI, MICHIGAN

OPERATIONS AND MAINTENANCE LOG

Project No.: 70172.03
Site Location: ATF Area
Field Personnel: Jose Castillo

Date: 01/18/95
Time of Visit: 0800
Well Number: RW-30

	EQUIPMENT TYPE	PARAMETERS	MEASUREMENTS (UNITS)	COMMENTS
PULSE PUMP SYSTEM	Recovery Pump	Supply pressure		GOOD & STEADY
		Pumping Rate	5 CYCLES/MIN	
		Collection system hardware		IN GOOD CONDITION
	Recovery Pump Screen	Inspected for fouling and clean (monthly)		CLEAN & IN GOOD CONDITION
	Collection Tank	Inspect for fluid levels (monthly), check level (monthly)	N/A	N/A
	Recovery Pump Controller	Check pressure regulators		IN GOOD CONDITION
		Inspect fittings for leaks (monthly)		FITTING & TRANSFER LINES IN GOOD CONDITION
		Inspect Pressure gauges and transfer lines	40 PSI	
		Adjust to max product recovery		SAME AS PREVIOUS MONTH
	Fluid Flow Meter (Counter)	Check operation - record reading	285 MIL/CYCLE	
SOLO PUMP SYSTEM	Float Control Dial	Maximize adjustments	N/A	N/A
	Pump Suction Lines	Check integrity and fouling	N/A	N/A
	Pump Discharge Lines	Check integrity and fouling	N/A	N/A
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
	Recovery Pump Screen	Inspect for fouling and clean (monthly)	N/A	N/A

GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION
YPSILANTI, MICHIGAN

OPERATIONS AND MAINTENANCE LOG

Project No.: 70172.03
Site Location: ATF Area
Field Personnel: Jose Castillo

Date: 01/18/95
Time of Visit: 0920
Well Number: RW-39

	EQUIPMENT TYPE	PARAMETERS	MEASUREMENTS (UNITS)	COMMENTS
PULSE PUMP SYSTEM	Recovery Pump	Supply pressure		GOOD & STEADY
		Pumping Rate	5 CYCLE/MIN	
		Collection system hardware		IN GOOD CONDITION
	Recovery Pump Screen	Inspected for fouling and clean (monthly)		IN GOOD CONDITION
	Collection Tank	Inspect for fluid levels (monthly), check level (monthly)	N/A	N/A
	Recovery Pump Controller	Check pressure regulators		IN GOOD CONDITION
		Inspect fittings for leaks (monthly)		FITTINGS & TRANSFER LINES IN GOOD CONDITION
		Inspect Pressure gauges and transfer lines	40 PSI	
		Adjust to max product recovery		SAME AS PREVIOUS MONTH
	Fluid Flow Meter (Counter)	Check operation - record reading	262 MIL/CYCLE	
SOLO PUMP SYSTEM	Float Control Dial	Maximize adjustments	N/A	N/A
	Pump Suction Lines	Check integrity and fouling	N/A	N/A
	Pump Discharge Lines	Check integrity and fouling	N/A	N/A
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
	Recovery Pump Screen	Inspect for fouling and clean (monthly)	N/A	N/A

GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION
YPSILANTI, MICHIGAN

OPERATIONS AND MAINTENANCE LOG

Project No.: 70172.03
Site Location: Sub Test Area
Field Personnel: Jose Castillo

Date: 01/18/95
Time of Visit: 1045
Well Number: RW-19

	EQUIPMENT TYPE	PARAMETERS	MEASUREMENTS (UNITS)	COMMENTS
PULSE PUMP SYSTEM	Recovery Pump	Supply pressure	N/A	N/A
		Pumping Rate	N/A	N/A
		Collection system hardware	N/A	N/A
	Recovery Pump Screen	Inspected for fouling and clean (monthly)	N/A	N/A
	Collection Tank	Inspect for fluid levels (monthly), check level (monthly)	N/A	N/A
	Recovery Pump Controller	Check pressure regulators	N/A	N/A
		Inspect fittings for leaks (monthly)	N/A	N/A
		Inspect Presure gauges and transfer lines	N/A	N/A
		Adjust to max product recovery	N/A	N/A
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
SOLO PUMP SYSTEM	Float Control Dial	Maximize adjustments	70 PSI	
	Pump Suction Lines	Check integrity and fouling		IN GOOD CONDITION
	Pump Discharge Lines	Check integrity and fouling		IN GOOD CONDITION
	Fluid Flow Meter (Counter)	Check operation - record reading	150 MIL/CYCLE	

GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION
YPSILANTI, MICHIGAN

OPERATIONS AND MAINTENANCE LOG

Project No.: 70172.07
Site Location: ATF Area
Field Personnel: Jose Castillo

Date: 02/13/95
Time of Visit: 0800
Well Number: RW-3

	EQUIPMENT TYPE	PARAMETERS	MEASUREMENTS (UNITS)	COMMENTS
PULSE PUMP SYSTEM	Recovery Pump	Supply pressure		GOOD & STEADY
		Pumping Rate	5 CYCLES/MIN	
		Collection system hardware		IN GOOD CONDITION
	Recovery Pump Screen	Inspected for fouling and clean (monthly)		CLEAN & IN GOOD CONDITION
	Collection Tank	Inspect for fluid levels (monthly), check level (monthly)	N/A	N/A
	Recovery Pump Controller	Check pressure regulators		IN GOOD CONDITION
		Inspect fittings for leaks (monthly)		IN GOOD CONDITION
		Inspect Pressure gauges and transfer lines	40 PSI	TRANSFER LINES IN GOOD CONDITION
		Adjust to max product recovery		SAME AS PREVIOUS MONTH
	Fluid Flow Meter (Counter)	Check operation - record reading	80 MIL/CYCLE	
SOLO PUMP SYSTEM	Float Control Dial	Maximize adjustments	N/A	N/A
	Pump Suction Lines	Check integrity and fouling	N/A	N/A
	Pump Discharge Lines	Check integrity and fouling	N/A	N/A
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
	Recovery Pump Screen	Inspect for fouling and clean (monthly)	N/A	N/A

GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION
YPSILANTI, MICHIGAN

OPERATIONS AND MAINTENANCE LOG

Project No.: 70172.07
Site Location: ATF Area
Field Personnel: Jose Castillo

Date: 02/13/95
Time of Visit: 0915
Well Number: RW-10

	EQUIPMENT TYPE	PARAMETERS	MEASUREMENTS (UNITS)	COMMENTS
PULSE PUMP SYSTEM	Recovery Pump	Supply pressure		GOOD & STEADY
		Pumping Rate	5 CYCLES/MIN	
		Collection system hardware		IN GOOD CONDITION
	Recovery Pump Screen	Inspected for fouling and clean (monthly)		CLEAN & IN GOOD CONDITION
	Collection Tank	Inspect for fluid levels (monthly), check level (monthly)	N/A	N/A
	Recovery Pump Controller	Check pressure regulators		IN GOOD CONDITION
		Inspect fittings for leaks (monthly)		IN GOOD CONDITION
		Inspect Pressure gauges and transfer lines	40 PSI	TRANSFER LINES N GOOD CONDITION
		Adjust to max product recovery		SAM AS PREVIOUS MONTH
	Fluid Flow Meter (Counter)	Check operation - record reading	591 MIL/CYCLE	
SOLO PUMP SYSTEM	Float Control Dial	Maximize adjustments	N/A	N/A
	Pump Suction Lines	Check integrity and fouling	N/A	N/A
	Pump Discharge Lines	Check integrity and fouling	N/A	N/A
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
	Recovery Pump Screen	Inspect for fouling and clean (monthly)	N/A	N/A

GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION
YPSILANTI, MICHIGAN

OPERATIONS AND MAINTENANCE LOG

Project No.: 70172.07
Site Location: ATF Area
Field Personnel: Jose Castillo

Date: 02/13/95
Time of Visit: 1105
Well Number: RW-13

	EQUIPMENT TYPE	PARAMETERS	MEASUREMENTS (UNITS)	COMMENTS
PULSE PUMP SYSTEM	Recovery Pump	Supply pressure		GOOD & STEADY
		Pumping Rate	4 CYCLES/MIN	
		Collection system hardware		IN GOOD CONDITION
	Recovery Pump Screen	Inspected for fouling and clean (monthly)		CLEAN & IN GOOD CONDITION
	Collection Tank	Inspect for fluid levels (monthly), check level (monthly)	N/A	N/A
	Recovery Pump Controller	Check pressure regulators		IN GOOD CONDITION
		Inspect fittings for leaks (monthly)		IN GOOD CONDITION
		Inspect Pressure gauges and transfer lines	40 PSI	TRANSFER LINES IN GOOD CONDITION
		Adjust to max product recovery		SAME AS PREVIOUS MONTH
	Fluid Flow Meter (Counter)	Check operation - record reading	390 MIL/CYCLE	
SOLO PUMP SYSTEM	Float Control Dial	Maximize adjustments	N/A	N/A
	Pump Suction Lines	Check integrity and fouling	N/A	N/A
	Pump Discharge Lines	Check integrity and fouling	N/A	N/A
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
	Recovery Pump Screen	Inspect for fouling and clean (monthly)	N/A	N/A

GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION
YPSILANTI, MICHIGAN

OPERATIONS AND MAINTENANCE LOG

Project No.: 70172.07
Site Location: ATF Area
Field Personnel: Jose Castillo

Date: 02/13/95
Time of Visit: 1000
Well Number: RW-15

	EQUIPMENT TYPE	PARAMETERS	MEASUREMENTS (UNITS)	COMMENTS
PULSE PUMP SYSTEM	Recovery Pump	Supply pressure		GOOD & STEADY
		Pumping Rate	5 CYCLES/MIN	
		Collection system hardware		IN GOOD CONDITION
	Recovery Pump Screen	Inspected for fouling and clean (monthly)		IN GOOD CONDITION
	Collection Tank	Inspect for fluid levels (monthly), check level (monthly)	N/A	N/A
	Recovery Pump Controller	Check pressure regulators		IN GOOD CONDITION
		Inspect fittings for leaks (monthly)		IN GOOD CONDITION
		Inspect Pressure gauges and transfer lines	40 PSI	TRANSFER LINES IN GOOD CONDITION
		Adjust to max product recovery		SAME AS PREVIOUS MONTH
	Fluid Flow Meter (Counter)	Check operation - record reading	326 MIL/CYCLE	
SOLO PUMP SYSTEM	Float Control Dial	Maximize adjustments	N/A	N/A
	Pump Suction Lines	Check integrity and fouling	N/A	N/A
	Pump Discharge Lines	Check integrity and fouling	N/A	N/A
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
	Recovery Pump Screen	Inspect for fouling and clean (monthly)	N/A	N/A

GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION
YPSILANTI, MICHIGAN

OPERATIONS AND MAINTENANCE LOG

Project No.: 70172.07
Site Location: ATF Area
Field Personnel: Jose Castillo

Date: 02/13/95
Time of Visit: 1245
Well Number: RW-24

	EQUIPMENT TYPE	PARAMETERS	MEASUREMENTS (UNITS)	COMMENTS
PULSE PUMP SYSTEM	Recovery Pump	Supply pressure		GOOD & STEADY
		Pumping Rate	4 CYCLES/MIN	
		Collection system hardware		IN GOOD CONDITION
	Recovery Pump Screen	Inspected for fouling and clean (monthly)		PUMP SCREEN DIRTY WITH SCUM & BLACK PARTICULATE. THOROUGHLY WASHED & CLEAN NOW.
	Collection Tank	Inspect for fluid levels (monthly), check level (monthly)	N/A	N/A
	Recovery Pump Controller	Check pressure regulators		IN GOOD CONDITION
		Inspect fittings for leaks (monthly)		IN GOOD CONDITION
		Inspect Pressure gauges and transfer lines	40 PSI	TRANSFER LINES IN GOOD CONDITION
		Adjust to max product recovery		SAME AS PREVIOUS MONTH
	Fluid Flow Meter (Counter)	Check operation - record reading	361 MIL/CYCLE	
SOLO PUMP SYSTEM	Float Control Dial	Maximize adjustments	N/A	N/A
	Pump Suction Lines	Check integrity and fouling	N/A	N/A
	Pump Discharge Lines	Check integrity and fouling	N/A	N/A
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
	Recovery Pump Screen	Inspect for fouling and clean (monthly)	N/A	N/A

GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION
YPSILANTI, MICHIGAN

OPERATIONS AND MAINTENANCE LOG

Project No.: 70172.07
Site Location: ATF Area
Field Personnel: Jose Castillo

Date: 02/14/95
Time of Visit: 0745
Well Number: RW-30

	EQUIPMENT TYPE	PARAMETERS	MEASUREMENTS (UNITS)	COMMENTS
PULSE PUMP SYSTEM	Recovery Pump	Supply pressure		GOOD & STEADY
		Pumping Rate	5 CYCLES/MIN	
		Collection system hardware		IN GOOD CONDITION
	Recovery Pump Screen	Inspected for fouling and clean (monthly)		DIRTY WITH BIOLGICAL GROWTH & BLACK PARTICULATE. CLEANED THOROUGHLY NOW.
	Collection Tank	Inspect for fluid levels (monthly), check level (monthly)		COLLECTION TANK WAS LEAKING FROM THE BOTTOM. SCHEDULED TO BE REPAIRED SOON PER WALTER MIXON.
	Recovery Pump Controller	Check pressure regulators		IN GOOD CONDITION
		Inspect fittings for leaks (monthly)		IN GOOD CONDITION
		Inspect Pressure gauges and transfer lines	40 PSI	TRANSFER LINES IN GOOD CONDITION
		Adjust to max product recovery	300 MIL/CYCLE	
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
SOLO PUMP SYSTEM	Float Control Dial	Maximize adjustments	N/A	N/A
	Pump Suction Lines	Check integrity and fouling	N/A	N/A
	Pump Discharge Lines	Check integrity and fouling	N/A	N/A
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
	Recovery Pump Screen	Inspect for fouling and clean (monthly)	N/A	N/A

GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION
YPSILANTI, MICHIGAN

OPERATIONS AND MAINTENANCE LOG

Project No.: 70172.07
Site Location: ATF Area
Field Personnel: Jose Castillo

Date: 02/14/95
Time of Visit: 0900
Well Number: RW-39

	EQUIPMENT TYPE	PARAMETERS	MEASUREMENTS (UNITS)	COMMENTS
PULSE PUMP SYSTEM	Recovery Pump	Supply pressure		GOOD & STEADY
		Pumping Rate	5 CYCLES/MIN	
		Collection system hardware		IN GOOD CONDITION
	Recovery Pump Screen	Inspected for fouling and clean (monthly)		CLEAN & IN GOOD CONDITION
	Collection Tank	Inspect for fluid levels (monthly), check level (monthly)	N/A	N/A
	Recovery Pump Controller	Check pressure regulators		IN GOOD CONDITION
		Inspect fittings for leaks (monthly)		IN GOOD CONDITION
		Inspect Pressure gauges and transfer lines	40 PSI	TRANSFER LINES IN GOOD CONDITION
		Adjust to max product recovery		SAME AS PREVIOUS MONTH
	Fluid Flow Meter (Counter)	Check operation - record reading	270 MIL/CYCLE	
SOLO PUMP SYSTEM	Float Control Dial	Maximize adjustments	N/A	N/A
	Pump Suction Lines	Check integrity and fouling	N/A	N/A
	Pump Discharge Lines	Check integrity and fouling	N/A	N/A
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
	Recovery Pump Screen	Inspect for fouling and clean (monthly)	N/A	N/A

GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION
YPSILANTI, MICHIGAN

OPERATIONS AND MAINTENANCE LOG

Project No.: 70172.11
Site Location: ATF Area
Field Personnel: Jose Castillo

Date: 03/14/95
Time of Visit: 0800
Well Number: RW-3

	EQUIPMENT TYPE	PARAMETERS	MEASUREMENTS (UNITS)	COMMENTS
PULSE PUMP SYSTEM	Recovery Pump	Supply pressure		GOOD & STEADY
		Pumping Rate	4 CYCLES/MIN	
		Collection system hardware		IN GOOD CONDITION
	Recovery Pump Screen	Inspected for fouling and clean (monthly)		FULL OF SCUM & PARTICULATE THOROUGHLY CLEAN NOW & OPERATING WELL
	Collection Tank	Inspect for fluid levels (monthly), check level (monthly)		IN GOOD CONDITION
	Recovery Pump Controller	Check pressure regulators		IN GOOD CONDITION
		Inspect fittings for leaks (monthly)		FITTINGS IN GOOD CNDITION
		Inspect Pressure gauges and transfer lines	40 PSI	TRANSFER LINES IN GOOD CONDITION
		Adjust to max product recovery	PRODUCT REFILL: SET AT C PRODUCT DISCHARGE: SET AT A POINT	MOVED TO B
	Fluid Flow Meter (Counter)	Check operation - record reading	75 MIL/CYCLE	
SOLO PUMP SYSTEM	Float Control Dial	Maximize adjustments	N/A	N/A
	Pump Suction Lines	Check integrity and fouling	N/A	N/A
	Pump Discharge Lines	Check integrity and fouling	N/A	N/A
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
	Recovery Pump Screen	Inspect for fouling and clean (monthly)	N/A	N/A

GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION
YPSILANTI, MICHIGAN

OPERATIONS AND MAINTENANCE LOG

Project No.: 70172.11
Site Location: ATF Area
Field Personnel: Jose Castillo

Date: 03/14/95
Time of Visit: 0930
Well Number: RW-10

	EQUIPMENT TYPE	PARAMETERS	MEASUREMENTS (UNITS)	COMMENTS
PULSE PUMP SYSTEM	Recovery Pump	Supply pressure		GOOD & STEADY
		Pumping Rate	5 CYCLES/MIN	
		Collection system hardware		IN GOOD CONDITION
	Recovery Pump Screen	Inspected for fouling and clean (monthly)		VERY DIRTY WITH SCUM & BLACK PARTICULATE. VERY CLEAN NOW.
	Collection Tank	Inspect for fluid levels (monthly), check level (monthly)	N/A	N/A
	Recovery Pump Controller	Check pressure regulators		IN GOOD CONDITION
		Inspect fittings for leaks (monthly)		IN GOOD CONDITION
		Inspect Pressure gauges and transfer lines	20 PSI	INCREASED TO 40 PSI
		Adjust to max product recovery	PRODUCT REFILL: SET AT B PRODUCT DISCHARGE: SET AT A	
	Fluid Flow Meter (Counter)	Check operation - record reading	250 MIL/CYCLE	
SOLO PUMP SYSTEM	Float Control Dial	Maximize adjustments	N/A	N/A
	Pump Suction Lines	Check integrity and fouling	N/A	N/A
	Pump Discharge Lines	Check integrity and fouling	N/A	N/A
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
	Recovery Pump Screen	Inspect for fouling and clean (monthly)	N/A	N/A

GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION
YPSILANTI, MICHIGAN

OPERATIONS AND MAINTENANCE LOG

Project No.: 70172.11
Site Location: ATF Area
Field Personnel: Jose Castillo

Date: 03/14/95
Time of Visit: 1230
Well Number: RW-13

	EQUIPMENT TYPE	PARAMETERS	MEASUREMENTS (UNITS)	COMMENTS
PULSE PUMP SYSTEM	Recovery Pump	Supply pressure		GOOD & STEADY
		Pumping Rate	5 CYCLES/MIN	
		Collection system hardware		IN GOOD CONDITION
	Recovery Pump Screen	Inspected for fouling and clean (monthly)		DIRTY WITH SCUM & PARTICULATE CLEANED THOROUGHLY
	Collection Tank	Inspect for fluid levels (monthly), check level (monthly)	N/A	N/A
	Recovery Pump Controller	Check pressure regulators		IN GOOD CONDITION
		Inspect fittings for leaks (monthly)		IN GOOD CONDITION
		Inspect Pressure gauges and transfer lines	40 PSI	PRODUCT DISCHARGE LINES WAS BROKEN & LEAKING. CUT BROKEN SECTION OFF & RECONNECT LINE
		Adjust to max product recovery	PRODUCT REFILL: SET AT A PRODUCT DISCHARGE: SET AT A	MOVE TO B
	Fluid Flow Meter (Counter)	Check operation - record reading	200 MIL/CYCLE	
SOLO PUMP SYSTEM	Float Control Dial	Maximize adjustments	N/A	N/A
	Pump Suction Lines	Check integrity and fouling	N/A	N/A
	Pump Discharge Lines	Check integrity and fouling	N/A	N/A
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
	Recovery Pump Screen	Inspect for fouling and clean (monthly)	N/A	N/A

GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION
YPSILANTI, MICHIGAN

OPERATIONS AND MAINTENANCE LOG

Project No.: 70172.11
Site Location: ATF Area
Field Personnel: Jose Castillo

Date: 03/14/95
Time of Visit: 1100
Well Number: RW-15

	EQUIPMENT TYPE	PARAMETERS	MEASUREMENTS (UNITS)	COMMENTS
PULSE PUMP SYSTEM	Recovery Pump	Supply pressure		GOOD PRESSURE SUPPLY
		Pumping Rate	5 CYCLES/MIN	
		Collection system hardware		IN GOOD CONDITION
	Recovery Pump Screen	Inspected for fouling and clean (monthly)		VERY DIRTY WITH SCUM & BLACK PARTICULATE. THOROUGHLY CLEAN NOW.
	Collection Tank	Inspect for fluid levels (monthly), check level (monthly)	N/A	N/A
	Recovery Pump Controller	Check pressure regulators		IN GOOD CONDITION
		Inspect fittings for leaks (monthly)		IN GOOD CONDITION
		Inspect Pressure gauges and transfer lines	20 PSI	INCREASED TO 40 PSI
		Adjust to max product recovery	PRODUCT REFILL: SET AT B PRODUCT DISCHARGE: SET AT A	
	Fluid Flow Meter (Counter)	Check operation - record reading	250 ML/CYCLE	
SOLO PUMP SYSTEM	Float Control Dial	Maximize adjustments	N/A	N/A
	Pump Suction Lines	Check integrity and fouling	N/A	N/A
	Pump Discharge Lines	Check integrity and fouling	N/A	N/A
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
	Recovery Pump Screen	Inspect for fouling and clean (monthly)	N/A	N/A

GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION
YPSILANTI, MICHIGAN

OPERATIONS AND MAINTENANCE LOG

Project No.: 70172.11
Site Location: ATF Area
Field Personnel: Jose Castillo

Date: 03/15/95
Time of Visit: 0900
Well Number: RW-30

	EQUIPMENT TYPE	PARAMETERS	MEASUREMENTS (UNITS)	COMMENTS
PULSE PUMP SYSTEM	Recovery Pump	Supply pressure		GOOD & STEADY
		Pumping Rate	5 CYCLES/MIN	
		Collection system hardware		IN GOOD CONDITION
	Recovery Pump Screen	Inspected for fouling and clean (monthly)		CLEAN AND IN GOOD CONDITION
	Collection Tank	Inspect for fluid levels (monthly), check level (monthly)	N/A	N/A
	Recovery Pump Controller	Check pressure regulators		IN GOOD CONDITION
		Inspect fittings for leaks (monthly)		IN GOOD CONDITION
		Inspect Pressure gauges and transfer lines	40 PSI	TRANSFER LINES IN GOOD CONDITION
		Adjust to max product recovery	300 MIL/CYCLE	
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
SOLO PUMP SYSTEM	Float Control Dial	Maximize adjustments	N/A	N/A
	Pump Suction Lines	Check integrity and fouling	N/A	N/A
	Pump Discharge Lines	Check integrity and fouling	N/A	N/A
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
	Recovery Pump Screen	Inspect for fouling and clean (monthly)	N/A	N/A

GENERAL MOTORS CORPORATION
GM POWERTRAIN DIVISION
YPSILANTI, MICHIGAN

OPERATIONS AND MAINTENANCE LOG

Project No.: 70172.11
Site Location: ATF Area
Field Personnel: Jose Castillo

Date: 03/15/95
Time of Visit: 1045
Well Number: RW-39

	EQUIPMENT TYPE	PARAMETERS	MEASUREMENTS (UNITS)	COMMENTS
PULSE PUMP SYSTEM	Recovery Pump	Supply pressure		GOOD & STEADY
		Pumping Rate	5 CYCLES/MIN	
		Collection system hardware		IN GOOD CONDITION
	Recovery Pump Screen	Inspected for fouling and clean (monthly)		IN GOOD CONDITION
	Collection Tank	Inspect for fluid levels (monthly), check level (monthly)	N/A	N/A
	Recovery Pump Controller	Check pressure regulators		IN GOOD CONDITION
		Inspect fittings for leaks (monthly)		IN GOOD CONDITION
		Inspect Pressure gauges and transfer lines	40 PSI	TRANSFER LINES IN GOOD CONDITION
		Adjust to max product recovery	PRODUCT REFILL: SET AT C PRODUCT DISCHARGE: SET AT B	
	Fluid Flow Meter (Counter)	Check operation - record reading	280 MIL/CYCLE	
SOLO PUMP SYSTEM	Float Control Dial	Maximize adjustments	N/A	N/A
	Pump Suction Lines	Check integrity and fouling	N/A	N/A
	Pump Discharge Lines	Check integrity and fouling	N/A	N/A
	Fluid Flow Meter (Counter)	Check operation - record reading	N/A	N/A
	Recovery Pump Screen	Inspect for fouling and clean (monthly)	N/A	N/A

APPENDIX C

FLUID COLLECTION RATES, VOLUMES, AND DESCRIPTIONS FROM RECOVERY WELL LOCATIONS

TABLE 1

FLUID COLLECTION RATES, VOLUMES, AND DESCRIPTIONS FROM SINGLE RECOVERY WELL LOCATIONS

ATF AREA
GM POWERTRAIN
WILLOW RUN PLANT

MONTH: JANUARY 1995

WELL	VOLUME COLLECTED	ELAPSED TIME (minutes)	NO. OF PUMP CYCLES	FLUID DESCRIPTION
RW-3	0.20 GAL	5	25	GROUNDWATER, THIN LAYER OF PRODUCT BLACK PARTICULATE, ODOR
RW-10	3.83 GAL	5	25	GROUNDWATER, THIN LAYERY OF PRODUCT, STRONG ODOR
RW-13	2.16 GAL	5	20	GROUNDWATER, BLACK PARTICULATE, STRONG ODOR
RW-15	1.98 GAL	5	25	GROUNDWATER, THICK LAYER OF PRODUCT, STRONG ODOR
RW-24	1.79 GAL	5	20	GROUNDWATER, MILKY PRODUCT, STRONG ODOR
RW-30	1.88 GAL	5	25	GROUNDWATER, THIN LAYER OF PRODUCT, BLACK PARTICULATE
RW-39	1.73 GAL	5	25	GROUNDWATER, THICK PRODUCT, STRONG ODOR

[P:\WP51\IH\REPORTS\ASBESTOS\PWRTRNOM\70172\COLLECT.ATF]

TABLE 1

FLUID COLLECTION RATES, VOLUMES, AND DESCRIPTIONS FROM SINGLE RECOVERY WELL LOCATIONS

ATF AREA
GM POWERTRAIN
WILLOW RUN PLANT

MONTH: FEBRUARY 1995

WELL	VOLUME COLLECTED	ELAPSED TIME (minutes)	NO. OF PUMP CYCLES	FLUID DESCRIPTION
RW-3	0.53 GAL	5	25	GROUNDWATER, PRODUCT BLACK PARTICULATE, STRONG ODOR
RW-10	3.90 GAL	5	25	GROUNDWATER, MILKY PRODUCT, STRONG ODOR
RW-13	2.06 GAL	5	20	GROUNDWATER, THIN LAYER OF PRODUCT, BLACK PARTICULATE
RW-15	2.15 GAL	5	25	GROUNDWATER, THICK LAYER OF PRODUCT, STRONG ODOR
RW-24	1.91 GAL	5	20	GROUNDWATER, MILKY PRODUCT, STRONG ODOR
RW-30	1.98 GAL	5	25	GROUNDWATER, PRODUCT, BLACK PARTICULATE
RW-39	1.78 GAL	5	25	GROUNDWATER, PRODUCT, STRONG ODOR

[P:\WP51\IH\REPORTS\ASBESTOS\PWRTRNOM\70172\COLLECT.ATF]

TABLE 1

FLUID COLLECTION RATES, VOLUMES, AND DESCRIPTIONS FROM SINGLE RECOVERY WELL LOCATIONS

ATF AREA
GM POWERTRAIN
WILLOW RUN PLANT

MONTH: MARCH 1995

WELL	VOLUME COLLECTED	ELAPSED TIME (minutes)	NO. OF PUMP CYCLES	FLUID DESCRIPTION
RW-3	0.40 GAL	5	20	GROUNDWATER, PRODUCT BLACK PARTICULATE
RW-10	1.65 GAL	5	25	GROUNDWATER, MILKY PRODUCT, STRONG ODOR
RW-13	1.32 GAL	5	25	GROUNDWATER, THIN LAYER OF PRODUCT, BLACK PARTICULATE
RW-15	1.65 GAL	5	25	GROUNDWATER, PRODUCT BLACK PARTICULATE, STRONG ODOR
RW-30	1.98 GAL	5	25	GROUNDWATER, PRODUCT BLACK PARTICULATE
RW-39	1.85 GAL	5	25	GROUNDWATER, PRODUCT BLACK PARTICULATE, STRONG ODOR

[P:\WP51\IH\REPORTS\ASBESTOS\PWRTRNOM\70172\COLLECT.ATF]

APPENDIX D

ANALYTICAL DATA AND CHAIN OF CUSTODY

TOLTEST, INC.

Founded in 1927
Toledo, Ohio • Detroit, Michigan • Monroe, Michigan • Pittsburgh, Pennsylvania

TEST REPORT

CLIENT: TolTest, Inc.
44191 Plymouth Oaks Blvd #1200
Plymouth, Michigan 48170

DATE: April 4, 1995

ATTN: Mr. Joe E. Cook

Job No.: 70172.12

Lab Receiving No.: 9503000163

Date Received: March 25, 1995

Date Sampled: March 23, 1995

Project Location: GM Powertrain
Willow Run Plant

Sample Point(s): GM-01, GM-02, GM-03, GM-04, GM-05, GM-06, GM-07, GM-08, GM-09, GM-10, GM-11, GM-12, GM-13, GM-14

Analysis Performed: TPH (8015M) Lube Oil

Reviewed and Approved by: Bruce P. DeMaine Date: 4/4/95
Bruce P. DeMaine
Manager, Analytical Services

ANALYTICAL NARRATIVE

The note(s) below pertain to the sample(s) and analytical data reported herein:

The sample(s) received by the laboratory under chain of custody met EPA guidelines for container type, labeling and preservation technique.

ANALYTICAL DATA

TOTAL PETROLEUM HYDROCARBONS
ANALYTICAL RESULTS

JOB NUMBER: 70172.12
METHOD NO.: 8015M (Ca Luft)
UNITS: mg/l
BATCH NO.: 1GCS015195

SAMPLE ID:		GM-01	GM-02	GM-03	GM-04	GM-05	GM-06
TTL SAMPLE No.:		16150	16151	16152	16153	16154	16155
PARAMETERS	METHOD BLANK						
Lube-Oil Range Organics	<1.00	53.0	60.7	189.	80.1	67.6	81.2

TOTAL PETROLEUM HYDROCARBONS
ANALYTICAL RESULTS

JOB NUMBER: 70172.12
METHOD NO.: 8015M (Ca Luft)
UNITS: mg/l
BATCH NO.: 1GCS015195

SAMPLE ID:		GM-07	GM-08	GM-09	GM-10	GM-11	GM-12
TTL SAMPLE No.:		16156	16157	16158	16159	16160	16161
PARAMETERS	METHOD BLANK						
Lube-Oil Range Organics	<1.00	86.0	14.3	2.87	137.	<1.00	133.

TOTAL PETROLEUM HYDROCARBONS
ANALYTICAL RESULTS

JOB NUMBER: 70172.12
METHOD NO.: 8015M (Ca Luft)
UNITS: mg/l
BATCH NO.: 1GCS015195

SAMPLE ID:		GM-13	GM-14
TTL SAMPLE No.:		16162	16163
PARAMETERS	METHOD BLANK		
Lube-Oil Range Organics	<1.00	6.63	<1.00

QUALITY CONTROL DATA

The laboratory is accredited or approved by the following agencies:

State of Ohio; Certification No.: 7016
American Industrial Hygiene Association
Food and Drug Administration
U.S. Army Corps of Engineers
City of Toledo

REPORT KEY

BTU/lb	=	British Thermal Units per pound
CV	=	Conventionals
Deg. C	=	Degrees Celsius
EP TOX	=	Extraction Procedure Toxicity
GC	=	Gas Chromatograph Instrument
GC/MS	=	Gas Chromatography/Mass Spectrometer Instrument
gm/cc	=	grams per cubic centimeter
IR	=	Infrared Instrument
mE/100grams	=	milliequivalant/100 grams soil
mg/m^3	=	milligram per 1000 liters of air
mg/kg	=	milligram per kilogram (ppm)
mg/l	=	milligram per liter (ppm)
mg/W	=	milligram per wipe
MTM	=	Michigan Test Method
mV	=	milliVolts
n/a	=	not applicable
PCB	=	Polychlorinated Biphenyls (PCBs)
pCi/l	=	picocurie per liter
ppb	=	parts per billion
ppm	=	parts per million
RCRA	=	Resource Conservation and Recovery Act
SM	=	Standard Method, 17th Edition
std	=	result is relative to standard pH units
TCLP	=	Toxicity Characteristic Leaching Procedure
µg/kg	=	microgram per kilogram (ppb)
µg/l	=	microgram per liter (ppb)
µg/S	=	microgram per sample
µg/W	=	microgram per wipe
>	=	greater than
<	=	less than
%	=	percent

EA	=	Elaine Ault
AAI	=	Analytical Associates, Inc.
OHM	=	OHM Corporation
ATE	=	Aqua Tech Environmental Laboratories, Inc.
BEC	=	Biological Environmental Control Laboratories, Inc.
BD	=	Bruce DeMaine
GE	=	Greg Eppink
JF	=	Jeff Fesko
BG	=	Barb Gould
PM	=	Patricia McElroy
SL	=	Steve Lambright
SP	=	Susan Pellitieri
RR	=	Ron Recknagel
TMA	=	Thermal Analytical
LW	=	Lorene Watts
TH	=	Tracy Howard
PG	=	Paul Genzman
DG	=	Diann Gillette

BATCH QC SUMMARY

BATCH No.	DATE EXTRACTED	DATE ANALYZED	ANALYST	TOTAL PETROLEUM HYDROCARBONS PARAMETERS	% RECOVERY METHOD SPIKE	% RECOVERY MATRIX SPIKE	% RECOVERY MATRIX DUPLICATE	% RPD
1GCS015195	03/30/95	03/31/95	SL	Lube-Oil Range Organics	99	102	97	5

CHAIN OF CUSTODY

TOLEDO, INC. 1810 N. 12th St., P.O. Box 2186, Toledo, OH 43603; Phone (419) 241-7175; FAX (419) 241-1808

Chain of Custody Record

NO 7386 Page 1 of 2

Job No.: 70172.12	Client: Tollest, Plymouth Branch
P.O. No.:	Project/Location: GM-Powertrain/Willow Run Plant
Project Mgr.: Jose Castillo	TAT: 5 day
Phone No.: 800-487-8175	Sampler's Name: Jose Castillo
	Sampler's Signature: Jose Castillo

Item No.	Sample I.D.	Date Sampled	Time Sampled	Type	Matrix	Sample Location	Total No. of Containers	Parameters: TPH 8015	Parameters: Lead 6010	Preserved Yes/No	Remarks
1	GM-01	3/23	AM	G	W	Monitoring Well N-1 Inner Well (ATF)	1	✓		N	16150
2	GM-02	3/23	AM	G	W	Monitoring Well N-2 Inner Well (ATF)	1	✓		N	16151
3	GM-03	3/23	AM	G	W	Monitoring Well N-4 Inner Well (ATF)	1	✓			16152
4	GM-04	3/23	AM	G	W	Monitoring Well N-5 Inner Well (ATF)	1	✓			16153
5	GM-05	3/23	AM	G	W	Monitoring Well N-11 Inner Well (ATF)	1	✓			16154
6	GM-06	3/23	AM	G	W	Monitoring Well N-28 Inner Well (ATF)	1	✓			16155
7	GM-07	3/23	AM	G	W	Monitoring Well N-17 Inner Well (ATF)	1	✓			16156
8	GM-08	3/23	AM	G	W	Monitoring Well N-18 Inner Well (ATF)	1	✓			16157
9	GM-09	3/23	AM	G	W	Monitoring Well N-19 Inner Well (ATF)	1	✓			16158
10	GM-10	3/23	AM	G	W	Monitoring Well N-25 Inner Well (ATF)	1	✓			16159

Item No.	Relinquished By:	Date / Time	Received By:	Date / Time
1-10	Jose Castillo	3/25 PM	[illegible]	3/25 12:25 PM
		/		/
		/		/
		/		/
		/		/

LAB USE ONLY

- Were samples delivered: X in person; ___ by courier
- Were samples preserved: ___ in field; ___ in lab; X N/A
- Temp inside cooler: 9 °C
- Did samples arrive intact and sealed? X yes ___ no ___ N/A
- Were proper containers used? X yes ___ no
- Comments: Use Sample ID on labels - Not the ID on lid!

Distribution: Original plus one accompanies shipment (white and yellow); copy to coordinator field files (pink)

TOLTEST, INC. 1916 N. 12th St., P.O. Box 2104, Toledo, OH 43603; Phone (419) 241-7127, FAX (419) 321-6257

Chain of Custody Record

No 8226 Page 2 of 2

Job No.: 70172.12	Client: To Test, Plymouth Branch		
P.O. No.:	Project/Location: GM Powertrain Willow Run Plant		
Project Mgr.: Jose Castillo	TAT: 5	Sampler's Name: Jose Castillo	
Phone No.: 800 487-8475		Sampler's Signature: Jose Castillo	

Item No.	Sample I.D.	Date Sampled	Time Sampled	Type	Matrix	Sample Location	Total No. of Containers	TPH	Parameters								Preserved Yes/No	Remarks
1	GM-11	3/23	AM	G	W	Monitoring well N-27 (ATF) Inner well	1	✓									Y	16160
2	GM-12	3/23	AM	G	W	Monitoring well N-31 (ATF) Inner well	1	✓										16161
3	GM-13	3/23	AM	G	W	Duplicate QC	1	✓										16162
4	GM-14	3/23	AM	G	W	Field Blank	1	✓										16163
5																		
6																		
7																		
8																		
9																		
10																		

Item No.	Relinquished By:	Date / Time	Received By:	Date / Time
1-4	Jose Castillo	3/25 PM		3/25 1220PM
	Relinquished By:	Date / Time	Received By:	Date / Time
	Relinquished By:	Date / Time	Received By:	Date / Time
	Relinquished By:	Date / Time	Received By:	Date / Time

LAB USE ONLY

Were samples delivered: ✓ in person ___ by courier

Were samples preserved: ___ in field ___ in lab ✓ N/A

Temp inside cooler: 1 °C

Did samples arrive intact and sealed? ✓ yes ___ no ___ N/A

Were proper containers used? ✓ yes ___ no

Comments: No sample ID on label - NOT ID on COC

Distribution: Original plus one accompanies shipment (white and yellow); copy to coordinator field files (pink)

APPENDIX E

HISTORICAL PRODUCT THICKNESS

TABLE F-1
HISTORICAL APPARENT PRODUCT THICKNESS
GM-POWERTRAIN/WILLOW RUN PLANT
WRP AREA

AUGUST 1995

WELL I.D.	DATE	APPARENT PRODUCT THICKNESS
MW-1	08/23/94 03/14-95	0.2 0.79
MW-2	08/23/94 03/14/95	0.02 0.0
RW-3	12/09/93 05/10/94 08/23/94 10/14/94 11/15/94 12/12/94 01/16/95 02/13/95 03/14/95	0.03 0.02 0.97 1.18 1.19 0.93 0.50 0.06 0.30
MW-4	08/23/94 03/14/95	0.04 0.0
MW-5	08/23/94 03/14/95	0.0 0.0
MW-7	08/23/94 03/14/95	0.0 0.0
MW-8	08/23/94 03/14/95	3.43 0.60
RW-10	12/09/93 08/23/94 10/14/94 11/15/94 12/12/94 01/16/95 02/13/95 03/14/95	1.29 1.81 1.10 1.60 1.63 1.18 0.29 0.25
MW-11	08/23/94 03/14/95	1.37 0.39
MW-12	08/23/94 03/14/95	1.75 0.74

TABLE F-1
HISTORICAL APPARENT PRODUCT THICKNESS
GM-POWERTRAIN/WILLOW RUN PLANT
WRP AREA

AUGUST 1995

WELL I.D.	DATE	APPARENT PRODUCT THICKNESS
RW-13	12/09/93	2.14
	05/10/94	0.0
	08/23/94	0.04
	10/14/94	0.30
	11/15/94	0.37
	12/12/94	0.20
	01/16/95	0.35
	02/13/95	0.10
	03/14/95	0.11
RW-15	12/09/93	0.05
	05/10/94	1.03
	08/23/94	1.39
	10/14/94	1.29
	11/15/94	1.45
	12/12/94	0.64
	01/16/95	0.44
	02/13/95	0.05
	03/14/95	0.03
MW-17	08/23/94	2.1
	03/14/95	0.94
MW-18	08/23/94	0.05
	03/14/95	0.0
MW-19	08/23/94	2.31
	03/14/95	0.68
MW-21	08/23/94	0.0
	03/14/95	0.72
MW-23	08/23/94	2.67
	03/14/95	0.43
RW-24	12/09/93	2.93
	05/10/94	2.79
	08/24/94	1.43
	10/14/94	1.85
	11/15/94	1.60
	12/12/94	1.08
	01/16/95	0.37
	02/13/95	0.14
	03/14/95	NR

TABLE F-1
HISTORICAL APPARENT PRODUCT THICKNESS
GM-POWERTRAIN/WILLOW RUN PLANT
WRP AREA

AUGUST 1995

WELL I.D.	DATE	APPARENT PRODUCT THICKNESS
MW-25	08/23/94 03/14/95	3.28 0.92
MW-27	08/23/95 03/14/95	0.0 0.0
MW-28	08/23/94 03/14/95	0.0 NR
MW-29	08/23/94 03/14/95	2.92 0.70
RW-30	12/09/99 05/10/94 08/24/94 10/14/94 11/15/94 12/12/94 01/16/95 02/13/95 03/14/95	2.93 2.78 1.43 1.85 1.60 1.08 0.37 0.14 NR
MW-31	08/24/94 03/14/95	1.30 0.43
RW-39	08/24/94 10/14/94 11/15/94 12/12/94 01/16/95 02/13/95 03/14/95	0.65 0.63 0.20 0.05 0.46 0.23 0.15