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March 26, 1993

Mr. James Shafer  
Northern Division  
NAVFACENGCOM 1821 J/S  
10 Industrial Highway; Mail Stop #82  
Lester, PA 19113-2090

Re: Naval Industrial Reserve Ordnance Plant  
Fridley, Minnesota  
Contract No. N62472-90-C-1024  
RMT Project No. 2313.28

Dear Jim:

Enclosed, for your use, are two copies of the final notes from Technical Review Committee (TRC) Meeting #16, held at the Naval Industrial Reserve Ordnance Plant on January 21, 1993. Other copies of these notes have been distributed according to the attached Distribution List.

All persons receiving these notes are requested to note that the next TRC meeting has been scheduled for **Thursday, April 29, 1993, at 1:00 p.m.** at the NIROP.

Sincerely,

A handwritten signature in black ink that reads "Eric Gredell". The signature is written in a cursive, flowing style.

Eric Gredell, P.E.  
Project Manager

jld

Enclosures

**DISTRIBUTION LIST  
MEETING NOTES  
TRC MEETING #16**

Number of Copies

U.S. Army Corps of Engineers Omaha District Attn: Gene Liu 215 North 17th Street Omaha, NE 68102-4973	1
City of Fridley Department of Public Works Fridley Municipal Center Attn: Mark Winson 6431 University Avenue, N.E Fridley, MN 55432	1
Northern Division NAVFACENGCOM 1821 J/S Attn: Jim Shafer 10 Industrial Highway; Mail Stop #82 Lester, PA 19113-2090	2
Dick Hanson NAVSEA Technical Representative Naval Industrial Reserve Ordnance Plant; Code 55 5001 East River Road Minneapolis, MN 55421-1406	1
Naval Sea Systems Command Attn: Steven Hoffman CSEA 654-C Washington, DC 20362-5101	1
Minnesota Pollution Control Agency Site Response Section Ground Water and Solid Waste Division Attn: Steven Giddings 520 Lafayette Road St. Paul, MN 55155	1
U.S. Environmental Protection Agency Region V Remedial & Enforcement Response Branch OH/MN Section, Unit 1 (HSRM-6J) Attn: Tom Bloom 77 W. Jackson Blvd. Chicago, IL 60604-3590	1

**DISTRIBUTION LIST  
MEETING NOTES  
TRC MEETING #16**

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FMC Corporation Attn: Doug Hildre 4800 East River Road Minneapolis, MN 55421	1
Metropolitan Waste Control Commission Attn: Leo H. Hermes, P.E./Michael Flaherty Mears Park Centre 230 East 5th Street St. Paul, MN 55101	1
Environmental Services Anoka County Courthouse Attn: Robert Hutchison, Director 325 East Main Street Anoka, MN 55303	1
Minnesota Department of Natural Resources Attn: Mr. Evan Drivas 500 Lafayette Road St. Paul, MN 55115	1
Minneapolis Water Works Attn: Mr. Adam Kramer 4300 Marshall Street NE Minneapolis, MN 55421	1
Defense Plant Representative Office FMC-Minneapolis Attn: Commander Daniel Hogan 4800 East River Road Minneapolis, MN 55421-5094	1
FMC Corporation Attn: Diane Maki 4800 East River Road Minneapolis, MN 55421	1
B&V Waste Science & Technology Corp. Attn: Margaret Casserly 230 West Monroe St.; Suite 2250 Chicago, IL 60606	1

**Minutes of Meeting  
Technical Review Committee Meeting #16  
January 21, 1993**

**Naval Industrial Reserve Ordnance Plant  
Fridley, Minnesota**

Technical Review Committee (TRC) meeting #16 was held at the Naval Industrial Reserve Ordnance Plant (NIROP) in Fridley, Minnesota, on January 21, 1993. A copy of the agenda distributed at the meeting and an attendance list are attached.

**A. Introductions**

1. Jim Shafer was unable to travel to the meeting due to weather problems. Eric Gredell opened the meeting at approximately 1:00 p.m.
2. All attendees introduced themselves, announcing their name and affiliation.
3. Michael Flaherty has replaced Michael Pliml as the TRC representative from the MWCC.
4. There were no comments on the notes for the last TRC meeting.

**B. Actions Since Last TRC Meeting**

1. The groundwater extraction and pretreatment systems were started up briefly in mid-August 1992. However, the systems had to be shut down to make equipment repairs. Sustained operation of the systems began on September 14, 1992. The "shakedown" period ended on September 20, and the formal "startup" period began on September 21.
2. A report titled "Determination of Groundwater Containment System Effectiveness - Revision 0" (the "Determination Document") was issued on December 18, 1992. A copy of review comments on this document was provided to RMT during the meeting by the MPCA; the comments were addressed and mailed to Jim Shafer of the Navy on January 20, 1993. Review comments from the USEPA were not provided.
3. It was reported that extraction well AT-1A has been shut down for approximately four weeks, due to equipment problems. The USACE is evaluating approaches to correct the problems.
4. Eric Gredell presented a summary of information contained in the Determination Document. Monitoring data obtained after the submittal date of the Determination Document were also presented.

A preliminary conclusion presented in the Determination Document is that the existing extraction well system will capture contaminated groundwater over the majority of the site, based on preliminary operating and monitoring data. However, the preliminary

conclusions also indicate that areas of impacted groundwater, particularly to the south of the plant and in the county park, are not being recovered by the extraction wells under current operating conditions. It was determined that upgrading of the extraction well system will be required to provide effective containment and extraction of impacted groundwater at the site. It was recommended in the Determination Document that additional hydraulic monitoring data be collected under sustained and stable operating conditions of the groundwater extraction system to complete calibration of the groundwater flow model. The calibrated flow model should then be used to assist in developing plans for upgrading the extraction system.

5. It was reported that the groundwater pretreatment system has operated satisfactorily since startup. All samples of the treated water discharged to the sanitary sewer have been in compliance with the MWCC permit limits. The air discharge from the activated carbon unit has also been in compliance with the MPCA requirements.
6. Monitoring for the groundwater extraction and pretreatment systems has been performed according to the approved Remedial Action Workplan - Revision 2.
7. Tom Bloom asked if the groundwater flow model and monitoring data provided sufficient information to determine the behavior of impacted groundwater beneath the plant buildings. Eric Gredell responded that the flow model appears to give a reasonable representation of the groundwater flow system over the entire site, including the area under plant buildings. However, the nature and locations of specific sources which may exist under the buildings are unknown. The model can be used to make estimates of the likelihood that VOCs entering the groundwater at various assumed locations under the buildings will be captured and removed by the groundwater extraction system. Use of the model to identify specific locations of currently unknown sources under the building is probably limited.
8. The Groundwater Appropriation Permit has been issued by the MDNR for some time.
9. The Remedial Action Workplan - Revision 2 was approved by the USEPA and MPCA in September 1992.
10. The Operation and Maintenance (O&M) Plan will be issued in two volumes. Volume I was completed by RMT several months ago. This volume will include the information which the USEPA and MPCA have already reviewed. Volume II, which is still under preparation by the USACE's contractor, will include mechanical O&M details. The USACE will reproduce the final copies of Volume II and send them to RMT. RMT will provide final copies of Volume I, and will issue the complete O&M Plan. The USACE cannot provide an estimate of the date for completion of Volume II. However, it is expected that the O&M Plan will be issued before the next TRC meeting.
11. Steven Giddings said that the NPDES permit process is on hold, pending receipt of the projected flow rates for the final extraction system from the Navy. He said that after the MPCA receives the flow rate information, they will proceed with the public notice process for the permit. He said it is important for the Navy to have further discussions with the Minneapolis City Engineer and representatives of the Water Works regarding the planned discharge of treated groundwater to the river. Eric Gredell said that Jim Shafer has mentioned his intent to meet with the City Engineer and Water Works staff to receive their comments which may be applicable to determining design criteria for the new groundwater treatment facility.

12. A USACE contractor has collected air samples at the discharge from the activated carbon unit in the groundwater pretreatment system since startup, according to the MPCA permit. In response to laboratory results from analysis of an air sample which showed that VOC breakthrough may have occurred, the carbon tank (or canister) was replaced with a canister containing fresh carbon. A sample of carbon from the canister that was removed from service was sent to a carbon regeneration facility for laboratory analysis. The laboratory results showed that the carbon was not saturated with VOCs. This indicated that the laboratory results from analysis of the air sample were incorrect, and that breakthrough of the carbon had not occurred. An additional sample of the carbon is being analyzed by the regeneration facility. When these laboratory results are available, it is expected that the canister can be hauled to the regeneration facility by the end of February.
13. Linda Hicken and Ron Vaughn presented a summary of findings from the remedial investigation (RI) fieldwork for soil. It was noted that DDT was found in several surface samples collected at various locations across the site, including samples from the Anoka County Park. Typical concentrations ranged from 50 to 100 ppb. The significance of these findings is not known at this time. RMT is currently compiling and evaluating the data, and preparing the draft RI Report. A baseline risk assessment will also be prepared and included in the report. The risk assessment will not quantify the potential release of contaminants from soil to the groundwater migration pathway or the risk associated with the groundwater or surface water pathways. The potential for leaching of contaminants from soil to groundwater will be addressed in the feasibility study. The soil RI will consider only soil outside the plant buildings. The Minnesota soil cleanup model may drive the target cleanup criteria, even though the model is a "To-Be-Considered" (TBC) criteria, not an Applicable or Relevant and Appropriate Requirement (ARAR).
14. Linda Hicken presented the following schedule for completion of the RI Report for the soil operable unit:
- Draft report to agencies 5-22-93
  - Receive agencies' comments 6-21-93
  - Draft-final report to agencies 8-5-93
  - Draft-final report becomes final unless  
dispute resolution is invoked 9-4-93
15. Michael Flaherty of the MWCC mentioned his concern regarding the capacity of the existing interim pretreatment system to accept additional flow from an expanded groundwater extraction system. Doug Hildre of FMC also mentioned his opinion that the existing system is currently operating at its maximum capacity, and that the system could not accept additional flow. It was noted that the capacity and performance of the pretreatment system will be evaluated during design of the upgraded groundwater extraction system. Eric Gredell said that the pretreatment system may have been designed by the USACE to accept the additional flow produced by a fifth extraction well.

16. Thirty-one drums excavated from a disposal area in the north 40 which were found during the soil RI fieldwork were shipped during August 1992 to ENSCO for incineration. A public notice of this action was issued in the Fridley Focus on August 25, 1992. No comments were received as a result of the public notice.
17. In December 1992, debris removed during excavation of the 31 drums was shipped to a hazardous waste landfill in Emelle, Alabama for disposal. A total of 120,000 lb. of debris was removed in 6 trucks. The total cost for removal of the 31 drums and 120,000 lb. of debris was \$145,000.
18. Some soil removed during the drum excavation was placed back into the excavation. This soil will be addressed during remedial action for soil as part of the soil operable unit.
19. Bob Hutchison requested FMC to send him a summary report on the removal action.

**C. Actions for Next Quarter**

1. The USEPA and MPCA agree that the schedule defined in the Record of Decision for the Navy to resubmit the Determination Document within 60 days should be modified due to the lack of sufficient operating data for the groundwater extraction system. Instead of resubmitting the document within 60 days, the Navy will be requested to submit a new schedule to proceed with upgrading the groundwater extraction system on an expedited basis.
2. Design of the groundwater treatment facility is currently expected to begin in February. It is necessary to resolve plans for upgrading the extraction system in the near future, to address the effects of the upgraded system on design of the treatment facility.
3. Monitoring of the groundwater extraction and pretreatment systems will continue, according to the approved Remedial Action Workplan. A transition of responsibility for sampling from RMT to FMC is occurring in January.
4. The target date for transition of responsibility for operation and maintenance of the groundwater extraction and pretreatment systems from the USACE to FMC is April 13, 1993. At least 30 days prior to this transition date, the USACE's contractor will train FMC personnel in operation and maintenance of the systems.
5. The MWCC permit is valid until July 31, 1995. The groundwater treatment facility is expected to startup during 1995. It is expected that additional schedule information regarding construction and startup of the treatment facility can be provided to the USEPA and MPCA prior to the next TRC meeting.

**D. RCRA Status**

1. Darlene Weber presented a summary of RCRA activities, and distributed a schedule of upcoming actions (copy attached).

Construction of the soil vapor extraction (SVE) system at the former Hazardous Waste Storage Area (HWSA) "C" is scheduled to occur from March 31 to July 9, 1993. FMC

has awarded the construction contract for this work. A notification of intent to begin the construction in April was sent to the MPCA in December 1992.

2. FMC submitted a RCRA Part B permit application to the MPCA in December 1992. The current interim status permit will expire on June 30, 1993. Fred Jenness said that the permit application was complete and well prepared. A Closure Plan for former HWSA "C" was submitted as an appendix to the Part B application. A 45-day public notice and comment period is required for the permit.
3. Doug Hildre said that FMC intends to landfarm some contaminated soil on the NIROP property in the spring, at a location to the west of Area A, as designated for the soil RI. Three separate soil stockpiles will be landfarmed. One stockpile contains soil with only oil contamination; one stockpile contains soil with oil and TCE contamination; and one stockpile contains about 40 cubic yards of soil with TCE contamination, that fails the TCLP test.

**E. Community Relations**

1. A fact sheet was issued by the Navy to all persons on the official site mailing list, announcing startup of the groundwater extraction system.
2. Commander Hogan hosted a media event at the NIROP to inform the public of the beginning of the groundwater cleanup action. Three television stations and one radio station covered the event. Articles describing the event were also published in the Minneapolis and local newspapers.
3. Dick Hanson will check that copies of the fact sheet and newspaper articles are placed in the public information repository.

**F. General Topics**

1. Scott Erickson of the City of Fridley said that the city is still in favor of the Navy providing treated groundwater to supplement the city's municipal drinking water supply. Eric Gredell said that this option was evaluated with several other alternatives for reuse of treated groundwater in a report previously prepared by RMT for the Navy. The alternative was considered not to be practical at this time. However, the Navy has agreed to reconsider this alternative in the future, after the longer-term groundwater treatment facility is in operation and the performance of that treatment system has been demonstrated. The Navy will be advised of this additional request by the city that the Navy consider providing treated groundwater of potable water quality to the city.
2. There are currently no plans to include reuse of treated groundwater within the NIROP for non-contact cooling water. However, piping has been installed by FMC that would allow use of contaminated groundwater from wells AT-1A and/or AT-4 as non-contact cooling water, prior to on-site treatment of the groundwater.
3. Bob Hutchison requested to receive copies of all submittals related to the soil RI.

4. The next TRC meeting was tentatively scheduled for April 22, 1993, at 1:00 p.m. in the Defense Plant Representative Office at the NIROP Fridley.

**(Note: The Navy has revised the date for the next TRC meeting to Thursday, April 29, at 1:00 p.m. at the NIROP.)**

TECHNICAL REVIEW COMMITTEE (TRC) MEETING #16  
21 JANUARY 1993  
NIROP FRIDLEY, MINNESOTA

EXPECTED (See attached sign-in  
sheet for actual list  
of attendees)  
LIST OF ATTENDEES:

<u>NAME</u>	<u>ORGANIZATION</u>
James Shafer	NORTHDIVNAVFAC
Chris Bartku	SOUTHDIVNAVFAC
David Criswell	SOUTHDIVNAVFAC
John Betcher	MPCA
Steve Giddings	MPCA
Fred Jenness	MPCA
Gary Eddy	MPCA
Dawn Duncanson	MPCA
Doug Hildre	FMC/NSD
Darlene Weber	FMC/NSD
Scott Erickson	City of Fridley
Robert Hutchinson	County of Anoka
Keith Lura	DPRO FMC Minneapolis
John Dresch	DPRO FMC Minneapolis
Sue Oetterer	DPRO FMC Minneapolis
Richard Hanson	NAVSEA
Jeff Allison	NAVSEA
Kerry Morrow	NAVSEA
Eric Gredell	RMT, Inc.
Linda Hicken	RMT, Inc.
Tom Koch	RMT, Inc.
Adam Kramer	Minneapolis Water Works
Larry Cole	Minneapolis Water Works
Thomas Bloom	USEPA
Margaret Casserly	Black and Veatch
Evan Drivas	DNR
Eugene Liu	COE
Janet Ehresmann	COE
Sam Bass	COE
Mark Koenig	COE
Michael Flaherty	MWCC

**AGENDA**

**1. INTRODUCTION**

**2. ACTIONS SINCE LAST TRC MEETING**

**\* PHASE I GROUND WATER EXTRACTION SYSTEM**

- SYSTEM START UP - SEPTEMBER 21, 1992
- MWCC SAMPLING/REPORTING
- RAMP SAMPLING/REPORTING
- OPERATION & MAINTENANCE PLAN

**\* DETERMINATION OF PHASE 1 GW CONTAINMENT SYSTEM EFFECTIVENESS**

- FINDINGS AND CONCLUSIONS
- RECOMMENDATIONS
- USEPA/MPCA COMMENT

**\* PHASE II TREATMENT PLANT DESIGN SCHEDULE**

**\* STATUS OF PERMITS**

- NPDES
- MWCC AUGUST 1, 1992 - JULY 31, 1995
- GROUNDWATER APPROPRIATIONS - FINAL

**\* STATUS OF PHASE I DOCUMENTS**

- REMEDIAL ACTION WORK PLAN - APPROVED SEPTEMBER 1992
- PHASE I OPERATION & MAINTENANCE PLAN

**\* REMOVAL ACTION - DISPOSAL OF SOIL & DEBRIS**

**\* COMMUNITY RELATIONS**

- FACT SHEET/PRESS RELEASE/MEDIA EVENT

**3. ACTIONS SCHEDULED FOR NEXT QUARTER**

**\*LONG TERM MONITORING PER REMEDIAL ACTION WORK PLAN**

**\* SOILS OPERABLE UNIT**

- PRELIMINARY FINDINGS
- SCHEDULE UPDATE

**\* AREA C RCRA SITE**

**4. OTHER ISSUES/COMMENTS**

**5. NEXT TRC MEETING**

TECHNICAL REVIEW COMMITTEE (TRC) MEETING #16  
 21 JANUARY 1993  
 NIROP FRIDLEY, MINNESOTA

LIST OF ATTENDEES:

<u>NAME</u>	<u>ORGANIZATION</u>	
James Shafer	NORTHDIVNAVFAC	
Chris Bartku	SOUTHDIVNAVFAC	<i>CR Bartku</i>
David Criswell	SOUTHDIVNAVFAC	<i>David Criswell</i>
John Betcher	MPCA	<i>John Betcher</i>
Steve Giddings	MPCA	<i>Steve Giddings</i>
Fred Jenness	MPCA	<i>Fred Jenness</i>
Gary Eddy	MPCA	
Dawn Duncanson	MPCA	
Doug Hildre	FMC/NSD	<i>Doug Hildre</i>
Darlene Weber	FMC/NSD	
Scott Erickson	City of Fridley	<i>Scott Erickson</i>
Robert Hutchinson	County of Anoka	<i>Robert Hutchinson</i>
Keith Lura	DPRO FMC Minneapolis	<i>Keith Lura</i>
John Dresch	DPRO FMC Minneapolis	<i>John Dresch</i>
Sue Oetterer	DPRO FMC Minneapolis	
Jeff Allison	NAVSEA	<i>Jeff S. Allison</i>
Richard Hanson	NAVSEA	<i>Richard Hanson</i>
Kerry Morrow	NAVSEA	
Eric Gredell	RMT, Inc.	<i>Eric Gredell</i>
Linda Hicken	RMT, Inc.	<i>Linda E. Hicken</i>
<del>Ron Vaughn</del>	<del>RMT, Inc.</del>	<i>Ronald H. Vaughn</i>
<del>Tom Koch</del>		
Adam Kramer	Minneapolis Water Works	
Larry Cole	Minneapolis Water Works	<i>Larry Cole</i>
Thomas Bloom	USEPA	<i>Thomas Bloom</i>
Margaret Casserly	Black and Veatch	<i>M. Casserly</i>
Evan Drivas	DNR	

Eugene Liu COE

Janet Ehresmann COE

Sam Bass COE

Mark Koenig COE

Michael Flaherty MWCC

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*Michael V. Flaherty*

Schedule Name : SOIL REMEDIATION PROJECT  
 Responsible : DERRICK E. MILLER  
 Date of Date : 8/10/92 Schedule File : ENVIRON3

THIS SCHEDULE INCORPORATE THE PRIME CONTRACT TIME EXTENSION

Dependencies : NOTICE TO PROCEED DATE

Task Name	Start Date	Duratn (Days)	End Date	Pct Achv	93												
					Jan 11	Feb 8	Mar 1	Apr 22	May 19	Jun 17	Jul 14	Aug 6	Sep 26	Oct 23	Oct 12		
+ DESIGN PREPARATION	2/10/9	130	8/12/9	96													
+ REVIEW PERIOD /NON-CIVI	8/20/9	25	9/24/9	0													
BID AND AWARD PERIOD	8/27/9	146	3/30/9	0	=====												
+ BID PERIOD	8/27/9	32	10/13/	100													
BID DATE	10/14/	0	10/14/	0													
AWARD PERIOD	10/14/	114	3/30/9	0	=====												
FMC AWARD REVIEW	10/14/	10	10/27/	100													
NAVY AWARD REVIEW	10/28/	10	11/10/	100													
PREPARE NOTICE OF	11/12/	5	11/18/	100													
NOTICE OF AWARD D	1/14/9	0	1/14/9	100	▲												
SUBMIT AND OK BON	1/14/9	15	2/4/93	30	■	■											
NOTICE TO PROCEED	2/5/93	0	2/5/93	0		○											
SHOP DRAWING APPR	2/5/93	37	3/30/9	0		■	■	■	■	■	■	■	■	■	■	■	■
SVE CONSTRUCTION PERIOD	3/31/9	70	7/8/93	0					=====								
SOIL VAPOR EXTRACTIO	3/31/9	70	7/8/93	0					=====								
DEMOLITION	3/31/9	5	4/6/93	0				■									
GENERAL CONSTRUCT	4/7/93	35	5/25/9	0				■	■	■	■	■	■	■	■	■	■
MECHANICAL CONSTR	5/26/9	15	6/16/9	0					■	■	■	■	■	■	■	■	■
ELECTRICAL CONSTR	6/17/9	15	7/8/93	0						■	■	■	■	■	■	■	■
DATE OF BENEFICAL	7/9/93	0	7/9/93	0								○					
TRAINING FMC PERSONEL	7/9/93	5	7/15/9	0								■	■	■	■	■	■
AIR EMISSION SAMPLING	7/16/9	50	9/24/9	0								=====					
SEV SYSTEM START UP	7/16/9	1	7/16/9	0								■	■	■	■	■	■
FIRST SAMPLING EVENT	7/20/9	1	7/20/9	0								■	■	■	■	■	■
SECOND SAMPLING EVEN	7/28/9	1	7/28/9	0								■	■	■	■	■	■
THRID SAMPLING EVENT	8/6/93	5	8/12/9	0								■	■	■	■	■	■
LABORATORY RESULTS	8/13/9	5	8/19/9	0								■	■	■	■	■	■
INSTALL CARBON ABSOR	8/20/9	5	8/26/9	0								■	■	■	■	■	■
AIR EMISSION SAMPLIN	8/27/9	20	9/24/9	0								■	■	■	■	■	■
CAROL BECKER DIRT(STROM	2/5/93	40	4/2/93	0				■	■	■	■	■	■	■	■	■	■
THERMAL TREATMENT	2/5/93	61	5/3/93	0				■	■	■	■	■	■	■	■	■	■
OUT STATE LANDFILLING	2/5/93	61	5/3/93	0				■	■	■	■	■	■	■	■	■	■
LAND FARMING CONSTRUCTI	4/2/93	10	4/15/9	0				■	■	■	■	■	■	■	■	■	■
+ LAND FRAMING APPLICA	4/2/93	10	4/15/9	0				■	■	■	■	■	■	■	■	■	■
+ MONITORING AND REPORTIN	5/14/9	126	11/12/	0								=====					
OCT.29,1993 END OF SEAS	10/29/	0	10/29/	0													△
PHYSICAL WORK MUST BE F	10/28/	0	10/28/	0													△
+ CLOSEOUT PERIOD	11/15/	40	1/12/9	0													

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 ■ Detail Task    ■■■■ Summary Task    ○○○○ Baseline  
 ■■■ (Progress)    ■■■■ (Progress)    ▶▶▶ Conflict  
 ■■■ (Slack)    ■■■■ (Slack)    .. Resource delay  
 Progress shows Percent Achieved on Actual    △ Milestone  
 ----- Scale: 4 days per character -----

TIME LINE Gantt Chart Report, Strip 1