File 4/19/00

Los Alamos National Laboratory

UNIVERSITY OF CALIFORNIA

Environmental Restoration

Environmental Science and Waste Technology (E)
Environmental Restoration, MS M992
Los Alamos, New Mexico 87545
505-667-0808/FAX 505-665-4747

Date: February 15, 2000
Refer to: E/ER:00-041

TA-49 (MDA AB)

LANL/ER/OU 1144

Mr. John Kieling
NMED-HRMB
P.O. Box 26110
Santa Fe, NM 87502

SUBJECT: NOTIFICATION OF MOISTURE MONITORING AT TECHNICAL AREA (TA)-49, MDA AB, POTENTIAL RELEASE SITES (PRSs) 49-001 (c, d, and g)

Dear Mr. Kieling:

Pursuant to recent discussions with Ms. Lee Winn of your staff and in accordance with our letter and fact sheet dated January 28, 2000 (E/ER:00-025), the Los Alamos National Laboratory (LANL) Environmental Restoration (ER) Project is planning to restart the collection of moisture content data from TA-49, MDA AB, PRSs (49-001(b, c, d and g)) during the third week of February 2000. This month's moisture monitoring will consist of one round of neutron probe moisture content monitoring in the eight existing boreholes (TH-1 through TH-5, 2A-0, 2A-Y, and 2B-Y) located outside the cap area.

Implementation of the moisture monitoring plan described in the fact sheet is planned for March 2000 and will involve monthly monitoring data from three boreholes on the cap, the time domain reflectometry (TDR) sensors, and the eight existing boreholes around the cap. Monitoring readings from the boreholes will consist of 16-second counts at 1-foot intervals in addition to moisture content measurements from four TDR sensors at two locations reported to a data logger. Sampling is summarized in the following table:

Plan/Document	Location	Number of Samples	Sample Type	Analyses
1. Stabilization Plan for Implementing Interim Measures and BMPs at PRSs 49-001 (b, c, d, and g). (LA-UR-98-1534)	TA-49, MDA AB	1-foot intervals initially in eight boreholes (approx. 800 measurements). Feb 2000	Neutron log using CPN 503DR moisture probe.	Subsurface moisture
		1-foot intervals in ten boreholes (approx. 850 measurements). March 2000-2002	Neutron log using CPN 503DR moisture probe.	Subsurface moisture

2. Technical Area 49 Moisture Monitoring Fact Sheet, (E/ER:00-025)	TA-49, MDA AB	1-foot intervals initially in eight boreholes (approx. 800 measurements). Feb. 2000	Neutron log using CPN 503DR moisture probe.	Subsurface moisture
		1-foot intervals in ten boreholes (approx. 850 measurements) plus TDR measurements. March 2000-2002	Neutron log using CPN 503DR moisture probe, plus data from four TDR sensors.	Subsurface moisture

Pursuant to your request, we are providing the schedule for the collection of moisture content data from TA-49, MDA AB, PRSs (49-001(b, c, d and g)). We anticipate collecting the moisture data during the last week of each month and following selected precipitation events. We will keep NMED-HRMB apprised of any changes in this proposed schedule. Please don't hesitate to contact John Hopkins at (505) 667-9551 or myself if you or your staff would like to be present during a moisture content data collection event.

If you have any questions or concerns please feel free to give me a call at (505) 667-0819.

Sincerely,

for

David McInroy
Environmental Restoration Project

DM/PB/ev

Enclosure: MDA AB Moisture Monitoring Data Collection Schedule

Cy (w/enc.):
P. Bertino, E/ER, MS M992
M. Buksa, E/ET, MS M992
J. Hopkins, E/ER, MS M992
J. Mose, LAAO, MS A316
V. Rhodes, Aurora, MS M992
T. Taylor, LAAO, MS A316
W. Woodworth, LAAO, MS A316
J. Parker, NMED-AIP
S. Yanicak, NMED-AIP, MS J993
L. Winn, NMED-HRMB
E/ER File, MS M992
RPF, (ER Catalog # 200000___), MS M707

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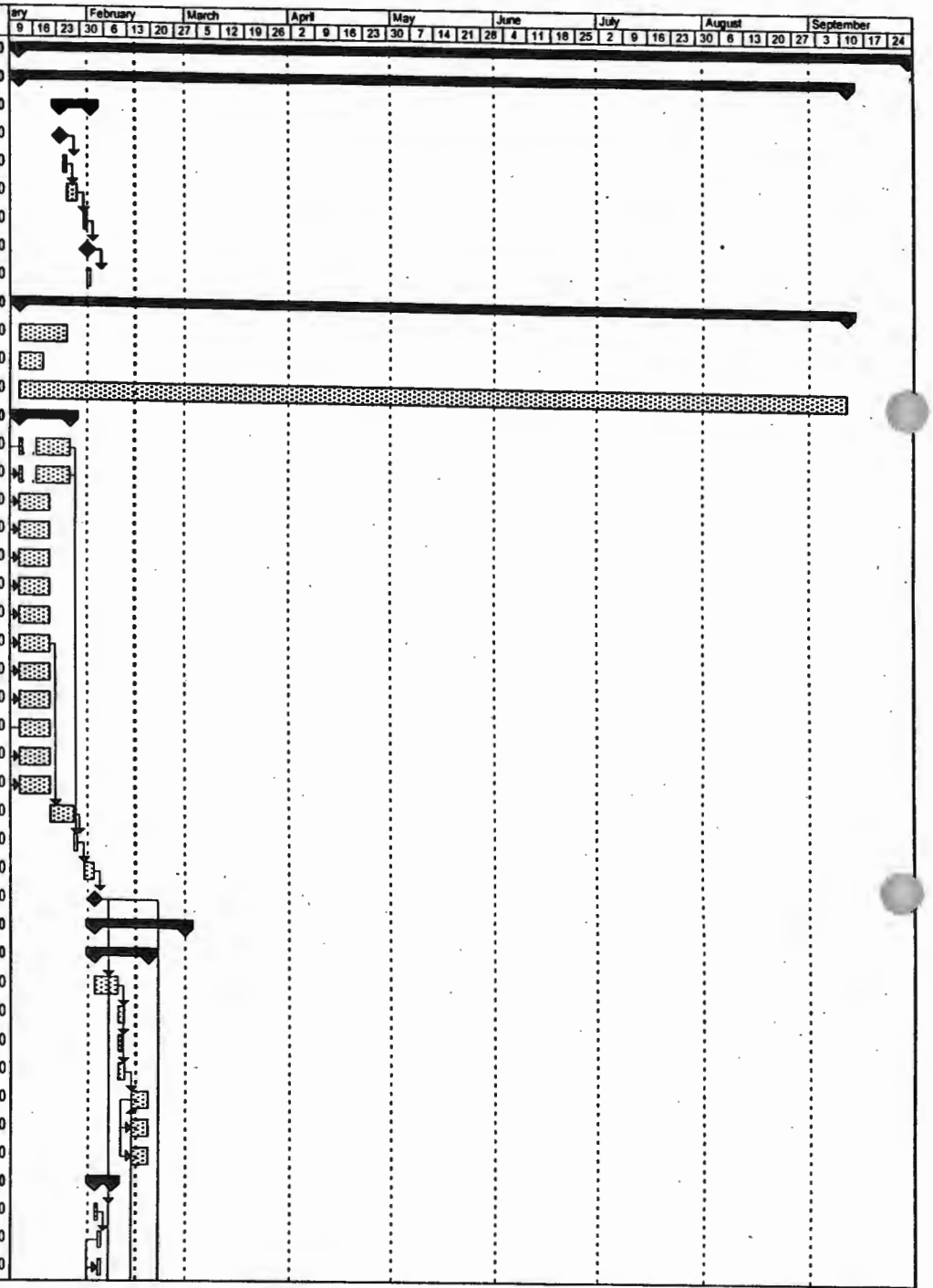
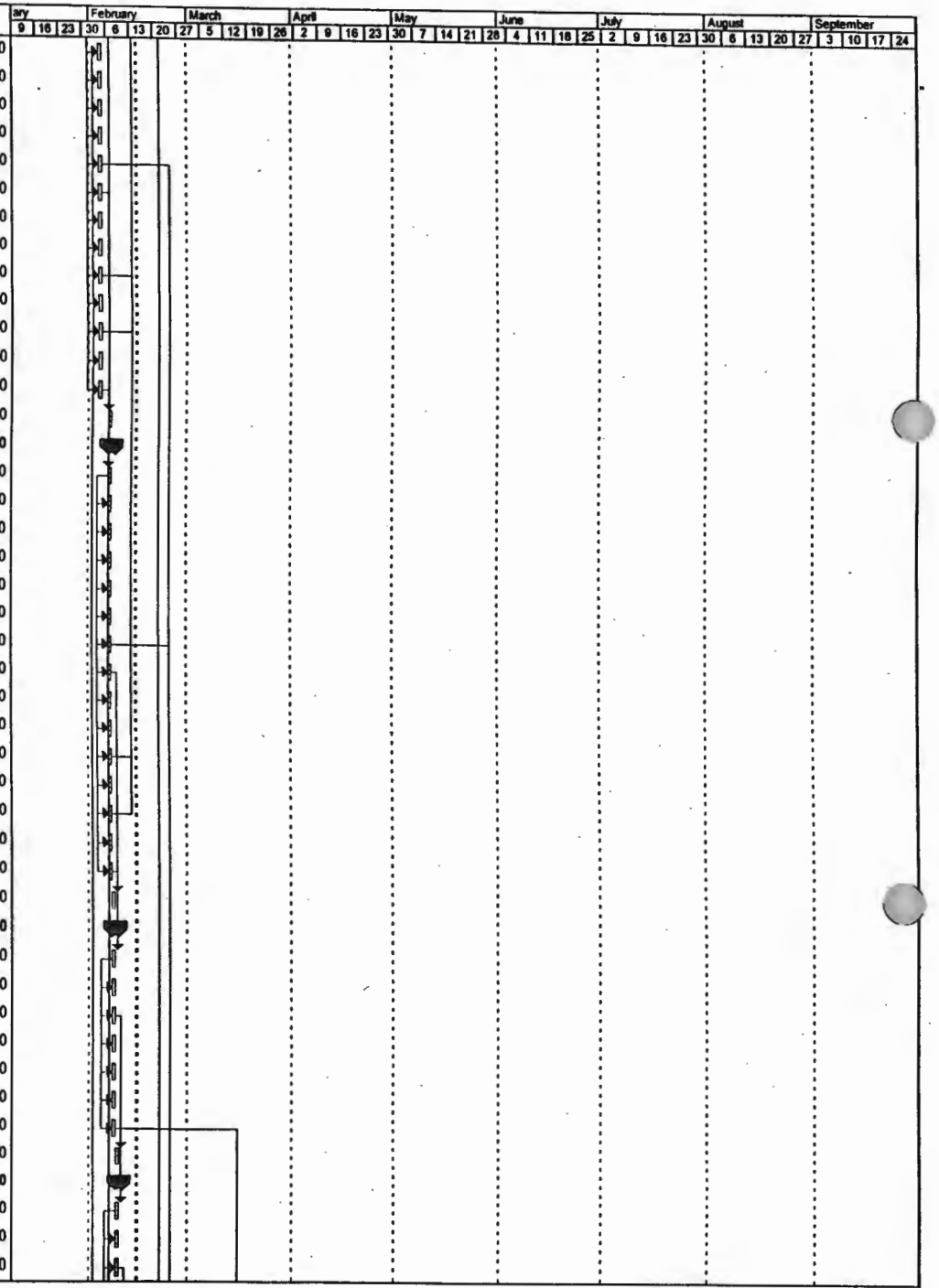
Cy (w/o enc.):
M. Backsen, E/ER, MS M992
J. Canepa, E/ER, MS M992
D. McInroy, E/ER, MS M992
J. Bearzi, NMED-HRMB

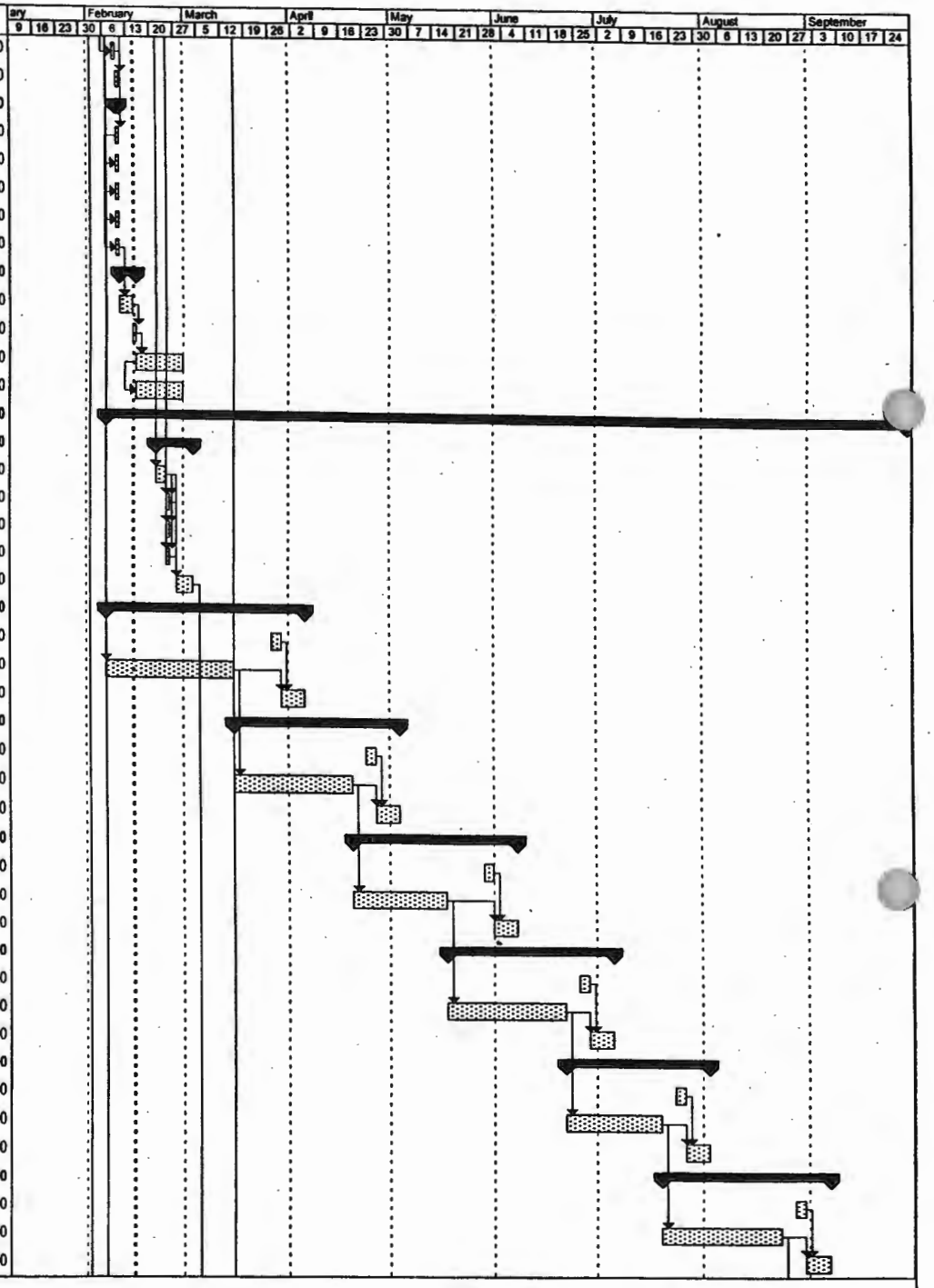
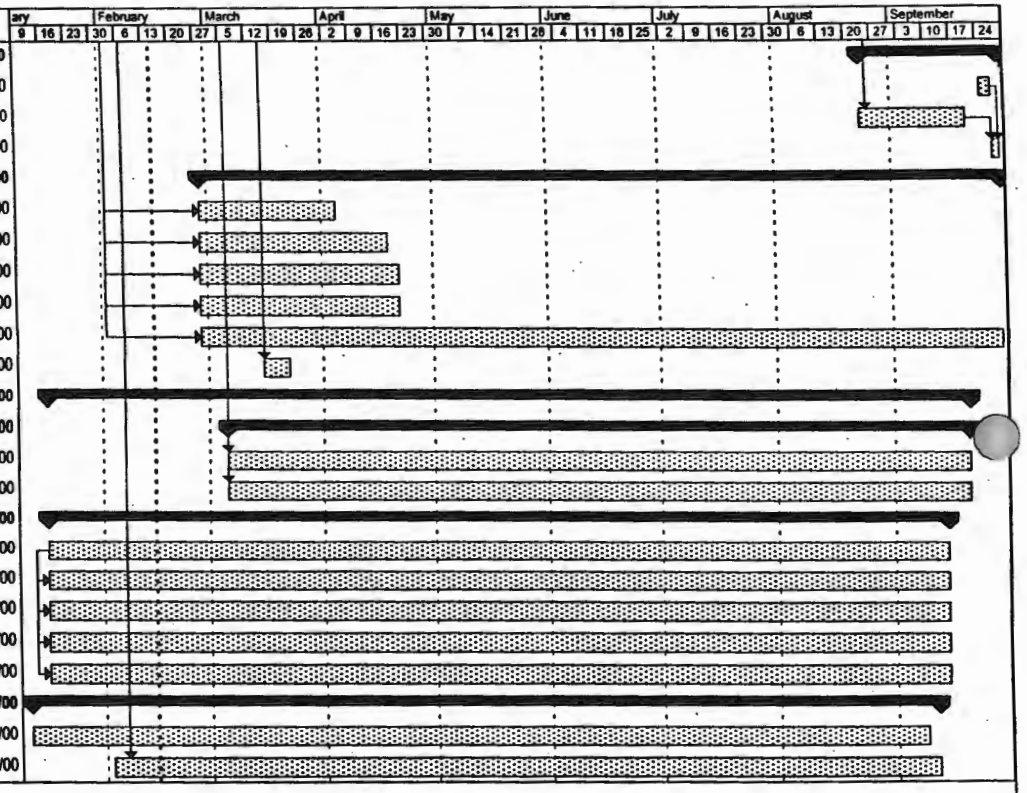
ID	WBS	Task Name	Duration	Start	Finish
1	1	**TA-49 Moisture Monitoring Project**	**188 days**	**Wed 1/12/00**	**Fri 9/29/00**
2	1.1	**Subtask 1.A: Field Preparation Activities**	**174 days**	**Wed 1/12/00**	**Mon 9/11/00**
3	1.1.1	**Project Startup Activities**	**7 days**	**Mon 1/24/00**	**Tue 2/1/00**
4	1.1.1.1	Notification of Contract Award	0 days	Mon 1/24/00	Mon 1/24/00
5	1.1.1.2	Project Coordination Meeting	1 day	Tue 1/25/00	Tue 1/25/00
6	1.1.1.3	Prepare Project Schedule	3 days	Wed 1/26/00	Fri 1/28/00
7	1.1.1.4	LANL Schedule Approval	1 day	Mon 1/31/00	Mon 1/31/00
8	1.1.1.5	Approval by UTR/Notice to Proceed	0 days	Mon 1/31/00	Mon 1/31/00
9	1.1.1.6	Project Kick-Off meeting	1 day	Tue 2/1/00	Tue 2/1/00
10	1.1.2	**Project Health and Safety Program**	**174 days**	**Wed 1/12/00**	**Mon 9/11/00**
11	1.1.2.1	Submit H&S Program/Implementation Plan	10 days	Wed 1/12/00	Tue 1/25/00
12	1.1.2.2	Medical Surveillance Certification	5 days	Wed 1/12/00	Tue 1/18/00
13	1.1.2.3	Incident Reports w/in 24 hr.	174 days	Wed 1/12/00	Mon 9/11/00
14	1.1.3	**Prepare or Update Plans and Permits**	**11 days**	**Wed 1/12/00**	**Wed 1/26/00**
15	1.1.3.1	SSHASP	9 days	Wed 1/12/00	Wed 1/26/00
16	1.1.3.2	WCSF	9 days	Wed 1/12/00	Wed 1/26/00
17	1.1.3.3	Excavation Permit	7 days	Wed 1/12/00	Thu 1/20/00
18	1.1.3.4	ESH ID	7 days	Wed 1/12/00	Thu 1/20/00
19	1.1.3.5	SWMU SWPP SSF	7 days	Wed 1/12/00	Thu 1/20/00
20	1.1.3.6	Radiation Work Permit	7 days	Wed 1/12/00	Thu 1/20/00
21	1.1.3.7	Hot Work Permit	7 days	Wed 1/12/00	Thu 1/20/00
22	1.1.3.8	Other Required Permits	7 days	Wed 1/12/00	Thu 1/20/00
23	1.1.4	Conduct and Document Training	7 days	Wed 1/12/00	Thu 1/20/00
24	1.1.5	Coordinate with Laboratory Groups	7 days	Wed 1/12/00	Thu 1/20/00
25	1.1.6	Procure Materials and Supplies	7 days	Wed 1/12/00	Thu 1/20/00
26	1.1.7	Procure Construction Services	7 days	Wed 1/12/00	Thu 1/20/00
27	1.1.8	Acquire Other Permits/Licenses	7 days	Wed 1/12/00	Thu 1/20/00
28	1.1.9	Prepare for Readiness Review	5 days	Fri 1/21/00	Thu 1/27/00
29	1.1.10	Conduct Readiness Review	1 day	Fri 1/28/00	Fri 1/28/00
30	1.1.11	Resolve Issues	3 days	Mon 1/31/00	Wed 2/2/00
31	1.1.12	Notice to Proceed w/ Field Work	0 days	Wed 2/2/00	Wed 2/2/00
32	1.2	**Subtask 2: Installation of Equipment**	**19 days**	**Thu 2/3/00**	**Tue 2/29/00**
33	1.2.1	**Construct Data Logger Facility**	**12 days**	**Thu 2/3/00**	**Fri 2/18/00**
34	1.2.1.1	Program and Test Data Logger w/ Temperature and TDR Sensors	5 days	Thu 2/3/00	Wed 2/9/00
35	1.2.1.2	Install Stand/Enclosure	2 days	Thu 2/10/00	Fri 2/11/00
36	1.2.1.3	Install Solar Power	1 day	Thu 2/10/00	Thu 2/10/00
37	1.2.1.4	Install Data Logger	2 days	Thu 2/10/00	Fri 2/11/00
38	1.2.1.5	Connect and Test Sensors for Location 20 ft East of Shaft 2-O	5 days	Mon 2/14/00	Fri 2/18/00
39	1.2.1.6	Connect and Test Sensors for 49-2906	5 days	Mon 2/14/00	Fri 2/18/00
40	1.2.1.7	Install, Connect and Test Precipitation Guage	5 days	Mon 2/14/00	Fri 2/18/00
41	1.2.2	**Install Moisture Monitoring Facilities Adjacent to BH 49-2906**	**3 days**	**Thu 2/3/00**	**Mon 2/7/00**
42	1.2.2.1	Mobilize Drilling Contractor and Equipment to TA-49	1 day	Thu 2/3/00	Thu 2/3/00
43	1.2.2.2	Setup Drilling Rig at Location Adjacent to BH 49-2906	1 day	Fri 2/4/00	Fri 2/4/00
44	1.2.2.3	Prepare Site and Open Gopher Barrier	1 day	Fri 2/4/00	Fri 2/4/00



ID	WBS	Task Name	Duration	Start	Finish
45	1.2.2.4	Drill Core Hole Thru Cover and Fill into Undisturbed Tuff (~ 15 ft)	1 day	Fri 2/4/00	Fri 2/4/00
46	1.2.2.5	Collect and Seal Core Samples	1 day	Fri 2/4/00	Fri 2/4/00
47	1.2.2.6	Submit Core Samples to SMO	1 day	Fri 2/4/00	Fri 2/4/00
48	1.2.2.7	Log Depth of Top Soil, Crushed Tuff, Old Fill, Undisturbed Tuff	1 day	Fri 2/4/00	Fri 2/4/00
49	1.2.2.8	Install 2 in. Aluminum Access Pipe, Backfill Anulus w/ Cuttings	1 day	Fri 2/4/00	Fri 2/4/00
50	1.2.2.9	Drill Core Hole to New-Cover/Old-Fill Interface	1 day	Fri 2/4/00	Fri 2/4/00
51	.2.2.10	Collect and Seal Core Samples	1 day	Fri 2/4/00	Fri 2/4/00
52	.2.2.11	Submit Core Samples to SMO	1 day	Fri 2/4/00	Fri 2/4/00
53	.2.2.12	Install TDR Vertical Probe & Temp. Sensor in Surface of Old Fill	1 day	Fri 2/4/00	Fri 2/4/00
54	.2.2.13	Hand Excavate Thru Top Soil to Crushed Tuff in New Cap	1 day	Fri 2/4/00	Fri 2/4/00
55	.2.2.14	Install TDR Horiz. Probe & Temp. Sensor in Top of Crushed Tuff	1 day	Fri 2/4/00	Fri 2/4/00
56	.2.2.15	Backfill Excavation	1 day	Fri 2/4/00	Fri 2/4/00
57	.2.2.16	Backfill Core Hole w/ Cuttings	1 day	Fri 2/4/00	Fri 2/4/00
58	.2.2.17	Demobilize from Location, Repair Gopher Barrier	1 day	Mon 2/7/00	Mon 2/7/00
59	**1.2.3**	**Install Moisture Monitoring Facilities 20 ft East of Shaft 2-O**	**2 days**	**Mon 2/7/00**	**Tue 2/8/00**
60	1.2.3.1	Setup Drilling Rig at Location 20ft East of Shaft 2-O	1 day	Mon 2/7/00	Mon 2/7/00
61	1.2.3.2	Prepare Site and Open Gopher Barrier	1 day	Mon 2/7/00	Mon 2/7/00
62	1.2.3.3	Drill Core Hole Thru Cover and Fill into Undisturbed Tuff (~ 15 ft)	1 day	Mon 2/7/00	Mon 2/7/00
63	1.2.3.4	Collect and Seal Core Samples	1 day	Mon 2/7/00	Mon 2/7/00
64	1.2.3.5	Submit Core Samples to SMO	1 day	Mon 2/7/00	Mon 2/7/00
65	1.2.3.6	Log Depth of Top Soil, Crushed Tuff, Old Fill, Undisturbed Tuff	1 day	Mon 2/7/00	Mon 2/7/00
66	1.2.3.7	Install 2 in. Aluminum Access Pipe, Backfill Anulus w/ Cuttings	1 day	Mon 2/7/00	Mon 2/7/00
67	1.2.3.8	Drill Core Hole to New-Cover/Old-Fill Interface	1 day	Mon 2/7/00	Mon 2/7/00
68	1.2.3.9	Collect and Seal Core Samples	1 day	Mon 2/7/00	Mon 2/7/00
69	.2.3.10	Submit Core Samples to SMO	1 day	Mon 2/7/00	Mon 2/7/00
70	.2.3.11	Install TDR Vertical Probe & Temp. Sensor in Surface of Old Fill	1 day	Mon 2/7/00	Mon 2/7/00
71	.2.3.12	Hand Excavate Thru Top Soil to Crushed Tuff in New Cap	1 day	Mon 2/7/00	Mon 2/7/00
72	.2.3.13	Install TDR Horiz. Probe & Temp. Sensor in Top of Crushed Tuff	1 day	Mon 2/7/00	Mon 2/7/00
73	.2.3.14	Backfill Excavation	1 day	Mon 2/7/00	Mon 2/7/00
74	.2.3.15	Backfill Core Hole w/ Cuttings	1 day	Mon 2/7/00	Mon 2/7/00
75	.2.3.16	Demobilize from Location, Repair Gopher Barrier	1 day	Tue 2/8/00	Tue 2/8/00
76	**1.2.4**	**Install Moisture Monitoring Facilities Adjacent to BH 49-2907**	**2 days**	**Tue 2/8/00**	**Wed 2/9/00**
77	1.2.4.1	Setup Drilling Rig at Location Adjacent to BH 49-2907	1 day	Tue 2/8/00	Tue 2/8/00
78	1.2.4.2	Prepare Site and Open Gopher Barrier	1 day	Tue 2/8/00	Tue 2/8/00
79	1.2.4.3	Drill Core Hole Thru Cover and Fill into Undisturbed Tuff (~ 15 ft)	1 day	Tue 2/8/00	Tue 2/8/00
80	1.2.4.4	Collect and Seal Core Samples	1 day	Tue 2/8/00	Tue 2/8/00
81	1.2.4.5	Submit Core Samples to SMO	1 day	Tue 2/8/00	Tue 2/8/00
82	1.2.4.6	Log Depth of Top Soil, Crushed Tuff, Old Fill, Undisturbed Tuff	1 day	Tue 2/8/00	Tue 2/8/00
83	1.2.4.7	Install 2 in. Aluminum Access Pipe, Backfill Anulus w/ Cuttings	1 day	Tue 2/8/00	Tue 2/8/00
84	1.2.4.8	Demobilize from Location, Repair Gopher Barrier	1 day	Wed 2/9/00	Wed 2/9/00
85	**1.2.5**	**Abandon BH 49-2907**	**2 days**	**Wed 2/9/00**	**Thu 2/10/00**
86	1.2.5.1	Setup Drilling Rig at BH 49-2907	1 day	Wed 2/9/00	Wed 2/9/00
87	1.2.5.2	Prepare Site, Remove or Cut-off Casing	1 day	Wed 2/9/00	Wed 2/9/00
88	1.2.5.3	Grout Borehole	1 day	Wed 2/9/00	Wed 2/9/00



ID	WBS	Task Name	Duration	Start	Finish
89	1.2.5.4	Repair Cover	1 day	Wed 2/9/00	Wed 2/9/00
90	1.2.5.5	Demobilize from Location, Repair Gopher Barrier	1 day	Thu 2/10/00	Thu 2/10/00
91	**1.2.6**	**Abandon BH 49-2906**	**1 day**	**Thu 2/10/00**	**Thu 2/10/00**
92	1.2.6.1	Setup Drilling Rig at BH 49-2906	1 day	Thu 2/10/00	Thu 2/10/00
93	1.2.6.2	Prepare Site, Remove or Cut-off Casing	1 day	Thu 2/10/00	Thu 2/10/00
94	1.2.6.3	Grout Borehole	1 day	Thu 2/10/00	Thu 2/10/00
95	1.2.6.4	Repair Cover	1 day	Thu 2/10/00	Thu 2/10/00
96	1.2.6.5	Demobilize from Location, Repair Gopher Barrier	1 day	Thu 2/10/00	Thu 2/10/00
97	**1.2.7**	**Demobilize/Restore Site**	**3 days**	**Fri 2/11/00**	**Tue 2/15/00**
98	1.2.7.1	Decon/Demobilize Drilling Subcontractor and Equipment	2 days	Fri 2/11/00	Mon 2/14/00
99	1.2.7.2	Repair Disturbed Areas, Reseed as Needed	1 day	Tue 2/15/00	Tue 2/15/00
100	1.2.8	Prepare Field Summary Report	10 days	Wed 2/16/00	Tue 2/29/00
101	1.2.9	Dev. Calibration of Neutron Moisture Probe for Each Hole	10 days	Wed 2/16/00	Tue 2/29/00
102	**1.3**	**Subtask 1.B: Moisture Monitoring Fieldwork**	**170 days**	**Mon 2/7/00**	**Fri 9/29/00**
103	**1.3.1**	**Monitor Existing Boreholes - Feb 2000**	**9 days**	**Tue 2/22/00**	**Fri 3/3/00**
104	1.3.1.1	Monitor 10 Existing BH (TH-1-5; 2A-0,Y;2B-Y;29-2906,7)	3 days	Tue 2/22/00	Thu 2/24/00
105	1.3.1.2	Monitor New Well Adjacent to 49-2906	1 day	Fri 2/25/00	Fri 2/25/00
106	1.3.1.3	Monitor New Well 20 ft East of Shaft 2-O	1 day	Fri 2/25/00	Fri 2/25/00
107	1.3.1.4	Monitor New Well Adjacent to 49-2907	1 day	Fri 2/25/00	Fri 2/25/00
108	1.3.1.5	Prepare and Submit Monthly Data	5 days	Mon 2/28/00	Fri 3/3/00
109	**1.3.2**	**Monitor Boreholes - Mar 2000**	**43 days**	**Mon 2/7/00**	**Wed 4/5/00**
110	1.3.2.1	Monitor 12 BH (TH-1-5; 2A-0,Y;2B-Y;29-2906,7,6A,7A;East of 2-O)	3 days	Mon 3/27/00	Wed 3/29/00
111	1.3.2.2	Acquire TDR Data	28 days	Mon 2/7/00	Wed 3/15/00
112	1.3.2.3	Prepare and Submit Monthly Data	5 days	Thu 3/30/00	Wed 4/5/00
113	**1.3.3**	**Monitor Boreholes - Apr 2000**	**35 days**	**Thu 3/16/00**	**Wed 5/3/00**
114	1.3.3.1	Monitor 12 BH (TH-1-5; 2A-0,Y;2B-Y;29-2906,7,6A,7A;East of 2-O)	3 days	Mon 4/24/00	Wed 4/26/00
115	1.3.3.2	Acquire TDR Data	25 days	Thu 3/16/00	Wed 4/19/00
116	1.3.3.3	Prepare and Submit Monthly Data	5 days	Thu 4/27/00	Wed 5/3/00
117	**1.3.4**	**Monitor Boreholes - May 2000**	**35 days**	**Thu 4/20/00**	**Wed 6/7/00**
118	1.3.4.1	Monitor 12 BH (TH-1-5; 2A-0,Y;2B-Y;29-2906,7,6A,7A;East of 2-O)	3 days	Mon 5/29/00	Wed 5/31/00
119	1.3.4.2	Acquire TDR Data	20 days	Thu 4/20/00	Wed 5/17/00
120	1.3.4.3	Prepare and Submit Monthly Data	5 days	Thu 6/1/00	Wed 6/7/00
121	**1.3.5**	**Monitor Boreholes -Jun 2000**	**35 days**	**Thu 5/18/00**	**Wed 7/5/00**
122	1.3.5.1	Monitor 12 BH (TH-1-5; 2A-0,Y;2B-Y;29-2906,7,6A,7A;East of 2-O)	3 days	Mon 6/26/00	Wed 6/28/00
123	1.3.5.2	Acquire TDR Data	25 days	Thu 5/18/00	Wed 6/21/00
124	1.3.5.3	Prepare and Submit Monthly Data	5 days	Thu 6/29/00	Wed 7/5/00
125	**1.3.6**	**Monitor Boreholes -Jul 2000**	**30 days**	**Thu 6/22/00**	**Wed 8/2/00**
126	1.3.6.1	Monitor 12 BH (TH-1-5; 2A-0,Y;2B-Y;29-2906,7,6A,7A;East of 2-O)	3 days	Mon 7/24/00	Wed 7/26/00
127	1.3.6.2	Acquire TDR Data	20 days	Thu 6/22/00	Wed 7/19/00
128	1.3.6.3	Prepare and Submit Monthly Data	5 days	Thu 7/27/00	Wed 8/2/00
129	**1.3.7**	**Monitor Boreholes -Aug 2000**	**35 days**	**Thu 7/20/00**	**Wed 9/6/00**
130	1.3.7.1	Monitor 12 BH (TH-1-5; 2A-0,Y;2B-Y;29-2906,7,6A,7A;East of 2-O)	3 days	Mon 8/28/00	Wed 8/30/00
131	1.3.7.2	Acquire TDR Data	25 days	Thu 7/20/00	Wed 8/23/00
132	1.3.7.3	Prepare and Submit Monthly Data	5 days	Thu 8/31/00	Wed 9/6/00



ID	WBS	Task Name	Duration	Start	Finish
133	1.3.8	**Monitor Boreholes -Sep 2000**	**27 days**	**Thu 8/24/00**	**Fri 9/29/00**
134	1.3.8.1	Monitor 12 BH (TH-1-5; 2A-0,Y;2B-Y;29-2906,7,6A,7A;East of 2-O)	3 days	Mon 9/25/00	Wed 9/27/00
135	1.3.8.2	Acquire TDR Data	20 days	Thu 8/24/00	Wed 9/20/00
136	1.3.8.3	Prepare and Submit Monthly Data	2 days	Thu 9/28/00	Fri 9/29/00
137	1.4	**Subtask 1.C: Moisture Monitoring Support Fieldwork**	**155 days**	**Mon 2/28/00**	**Fri 9/29/00**
138	1.4.1	Drum IDW and Cuttings	27 days	Mon 2/28/00	Tue 4/4/00
139	1.4.2	Transport and Store Waste Drums	37 days	Mon 2/28/00	Tue 4/18/00
140	1.4.3	Prepare WCSF, WPF, CWDR Forms	40 days	Mon 2/28/00	Fri 4/21/00
141	1.4.4	Coordinate Radioactive and DOT Waste Characterization	40 days	Mon 2/28/00	Fri 4/21/00
142	1.4.5	Provide Monthly Summary of Stored Wastes	155 days	Mon 2/28/00	Fri 9/29/00
143	1.4.6	Survey Borehole Sampling Locations, Load into FIMAD	5 days	Thu 3/16/00	Wed 3/22/00
144	1.5	**Subtask 3: Monthly, Quarterly and Annual Reports**	**178 days**	**Mon 1/17/00**	**Wed 9/20/00**
145	1.5.1	Technical reports (Monthly, Quarterly, Annual)	143 days	Mon 3/6/00	Wed 9/20/00
146	1.5.1.1	Assess Data	143 days	Mon 3/6/00	Wed 9/20/00
147	1.5.1.2	Prepare Reports	143 days	Mon 3/6/00	Wed 9/20/00
148	1.5.2	**Project Tracking and Control**	**174 days**	**Mon 1/17/00**	**Thu 9/14/00**
149	1.5.2.1	Schedule Tracking	174 days	Mon 1/17/00	Thu 9/14/00
150	1.5.2.2	Cost Tracking	174 days	Mon 1/17/00	Thu 9/14/00
151	1.5.2.3	Daily Field Activity Report	174 days	Mon 1/17/00	Thu 9/14/00
152	1.5.2.4	Weekly Field Activity Report	174 days	Mon 1/17/00	Thu 9/14/00
153	1.5.2.5	Monthly Accrual Report	174 days	Mon 1/17/00	Thu 9/14/00
154	1.6	**Subtask 4: Cover Maintenance**	**174 days**	**Wed 1/12/00**	**Mon 9/11/00**
155	1.6.1	Monthly Cover Inspections	173 days	Wed 1/12/00	Fri 9/8/00
156	1.6.2	Maintenance as Needed	158 days	Thu 2/3/00	Mon 9/11/00