

START

0018275

Final

Meeting Minutes Transmittal/Approval
Unit Managers Meeting: Low Level Burial Grounds

Meeting Held September 11, 1991
EPA Region 10
712 Swift, Suite 700
Richland, Washington

Appvl. *Clifford E. Clark* Date: 11/7/91
Clifford E. Clark, Environmental Policy and Permitting, RL

Appvl. Not Present Date: 11/7/91
Daniel L. Duncan, EPA Region 10, RCRA Program Manager

Appvl. *Joe Witczak* Date: _____
Joe Witczak, Unit Manager, Washington State Department of Ecology

Appvl. *Richard Pierce* Date: 11/7/91
Richard Pierce, Unit Manager, Contractor Representative, WHC

PURPOSE:

Meeting Minutes are attached. These minutes are from the Unit Managers Meeting held Septmeber 11, 1991. Minutes are comprised of the following:

- Attachment 1 - Summary of Discussion and Commitments
- Attachment 2 - Attendance List
- Attachment 3 - Agenda
- Attachment 4 - Action Items List with Status
- Attachment 5 - Project W-025 Landfill (Presentation Synopsis)



Distribution:

R.C. Bowman WHC (H4-57)
R.M. Carosino RL (A4-52)
C.E. Clark RL (A6-95)
D.L. Duncan EPA (HW-074)
G.C. Evans WHC (H4-57)
M. French DOE-NR
R.A. Gilbert RL (A5-21)
T.M. Greager WHC (G6-47)
R.D. Izatt RL (A6-95)
J.D. King SWEC (A4-35)
B. Koch PSNS
M. Jaraysi Ecology
R.D. Pierce WHC (N3-13)
J.J. Witczak Ecology
T.J. Woebkenberg SWEC (A4-35)
T.L. Yount WHC (G6-47)

ADMINISTRATIVE RECORD (Low Level Burial Grounds)
[Care of Susan Wray, WHC (H4-22C)]

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Attachment #1

Low Level Burial Grounds
Unit Managers Meeting
EPA Region 10 Office, 712 Swift, Suite 700
Richland, Washington
September 11, 1991

Summary of Discussion and Commitments

- The first topic of discussion was the Notice of Deficiency Responses. There were no Notice of Deficiency comments referred to by number for comments during discussion. Ecology's comments on the Design Package for the LLBG leachate liner and collection will be combined with the NOD comments. Ecology expects the combined package to be ready by the end of the first week of October 1991.
- Ecology (Moses Jaraysi) gave some heads-up comments on the CQA Plan. Mr. Jaraysi stated that one of the lessons learned from LERF's CQA Plan was the incompatibility between the test sampling and the testing procedure as related to actual on-site operations; the speed with which the tests were carried out was not compatible with progress on site. Mr. Jaraysi gave the example that a membrane should be tested for certain properties before it is buried, but the length of time taken to gather results of this test were incompatible with the progress on site. This left the choice of either delaying work on site or going ahead, and the latter choice took the risk of coming up with failing results on these tests. This is the major item in the CQA for this project that Mr. Jaraysi noted.
- Golder (Frank Shuri) gave a presentation on the 9090 test results and design life for Project W-025 Landfill. (See Attachment 5). Mr. Shuri noted that the W-025 Landfill site is located in the 200 West Area; it will be a double-lined RCRA-compliant facility; it will cover approximately two acres (450 feet x 300 feet at ground level); and it will have the capacity for 50,000 to 150,000 55-gallon drums, depending on cover slopes and backfilling practices.

Mr. Shuri of Golder covered some information about 9090 testing. The purpose of EPA 9090 testing is to evaluate chemical compatibility of geomembranes and leachate and to eliminate clearly incompatible materials. 9090 testing applies to geomembranes, but is extrapolated to other materials. The 9090 testing protocol establishes in detail: The test duration, test temperatures, types of tests (strength and dimensional, and the number of samples. The data analysis approach and acceptance criteria are not specified by the 9090 method.

The materials for 9090 Test on W-025 was discussed. WHC (Tim Greager) noted the legal restriction against designating in the construction specification a specific manufacturer. Ecology (Joe Witczak) stated that Ecology doesn't like to use a different material than was tested. Mr. Witczak suggested for future projects possibly going through vendor selection before doing 9090 testing and then having a contract specify

Attachment 2

Low Level Burial Grounds
(W-025 Mixed Waste Trench)
Unit Managers Meeting
September 11, 1991

Attendance List

<u>NAME</u>	<u>ORGANIZATION</u>	<u>PHONE #</u>
D. Armstrong	WHC	(509) 373-9240
R. Bowman	WHC	(509) 376-4876
C. Clark	RL	(509) 376-9333
J. Divine	ChemMet	(509) 967-2309
E. Erpenbeck	WHC	(509) 376-8032
G. Evans	WHC	(509) 376-8939
D. Fassett	SWEC	(509) 376-5011
T. Greager	WHC	(509) 376-0312
M. Jaraysi	Ecology	(509) 546-2995
K. Knox	CNES	(509) 376-5011
R. Pierce	WHC	(509) 376-5681
F. Shuri	Golder	(206) 883-0777
J. Witczak	Ecology	(206) 438-7557

Attachment 3

Low Level Burial Grounds
(W-025 Mixed Waste Trench)
Unit Managers Meeting
September 11, 1991

Agenda

LOW-LEVEL BURIAL GROUNDS

- I Opening Remarks (C. Clark)
- II Discuss Responses to the Notice of Deficiencies (J. Witczak)
- III Status of Ecology Comments on Design Package for LLBG Leachate Liner and Collection System (J. Witczak)
- IV Discuss 9090 Test results and Design Life for Mixed Waste Trench (W-025). (T. Greager and Golder & Associates)

Attachment 4

Low Level Burial Grounds -
(W-025 Mixed Waste Trench)
Unit Managers Meeting
September 11, 1991

Commitments/Agreements Status

ACTION ITEM

COMMITMENTS/AGREEMENTS STATUS LIST

5-30-91:1 Provide a letter on interim status construction authorization and regulatory criteria for design. Action: Joe Witczak (Ecology) and Dan Duncan (EPA)

OPEN

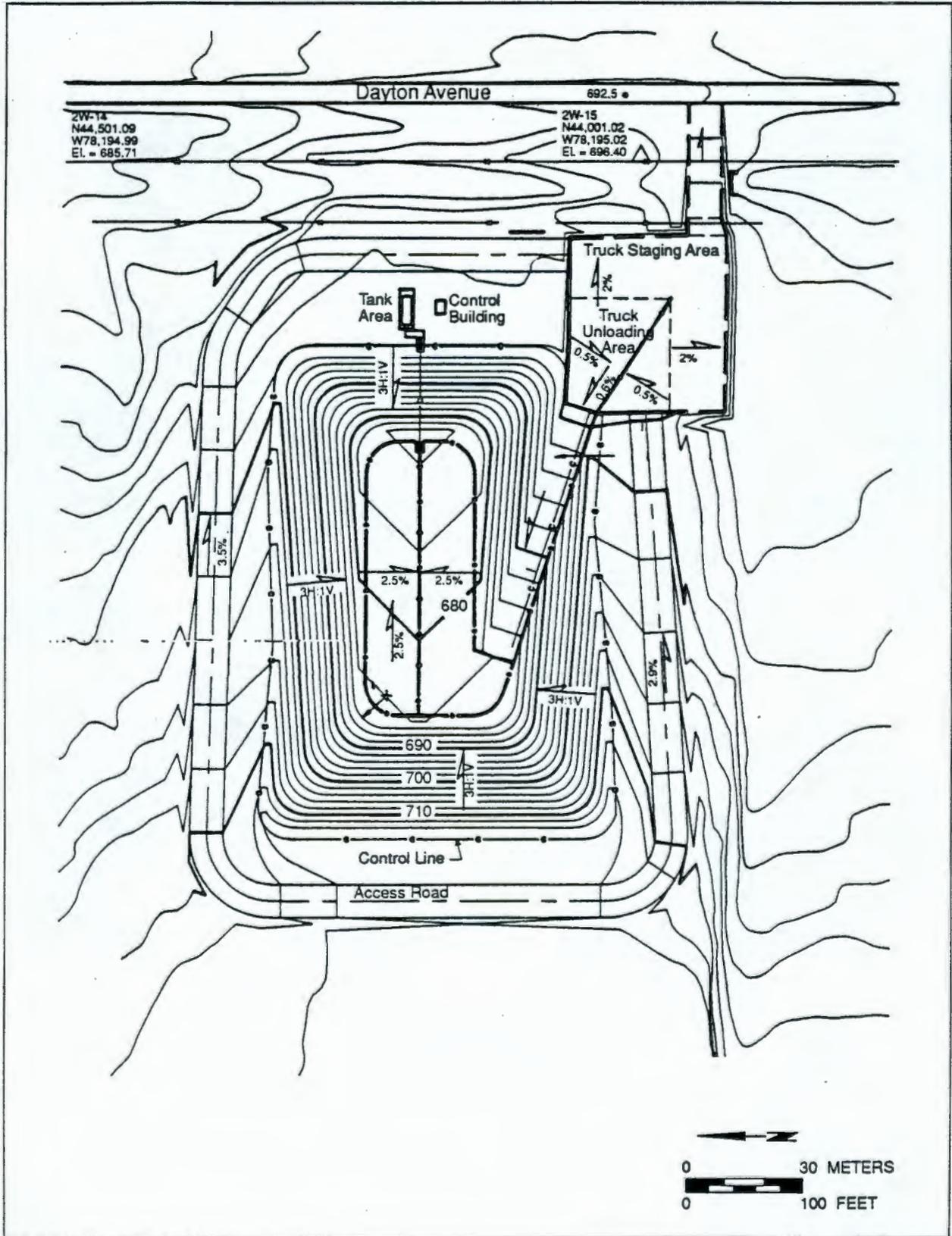
Attachment 5

Notice of Deficiency Response Table with Responses

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Project W-025 Landfill

- Located in 200 West Area
- Double Lined RCRA-Compliant Facility
- 450 ft x 300 ft at Ground Surface (About 2 Acres)
- 30 ft deep, 3H:1V Sideslopes
- Capacity About 50,000 to 150,000 55-gal Drums (Depends on Cover Slopes and Backfilling Practice)



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903-1250/26459/9-6-91

Figure 3-2a. Current Landfill Design - Plan View.

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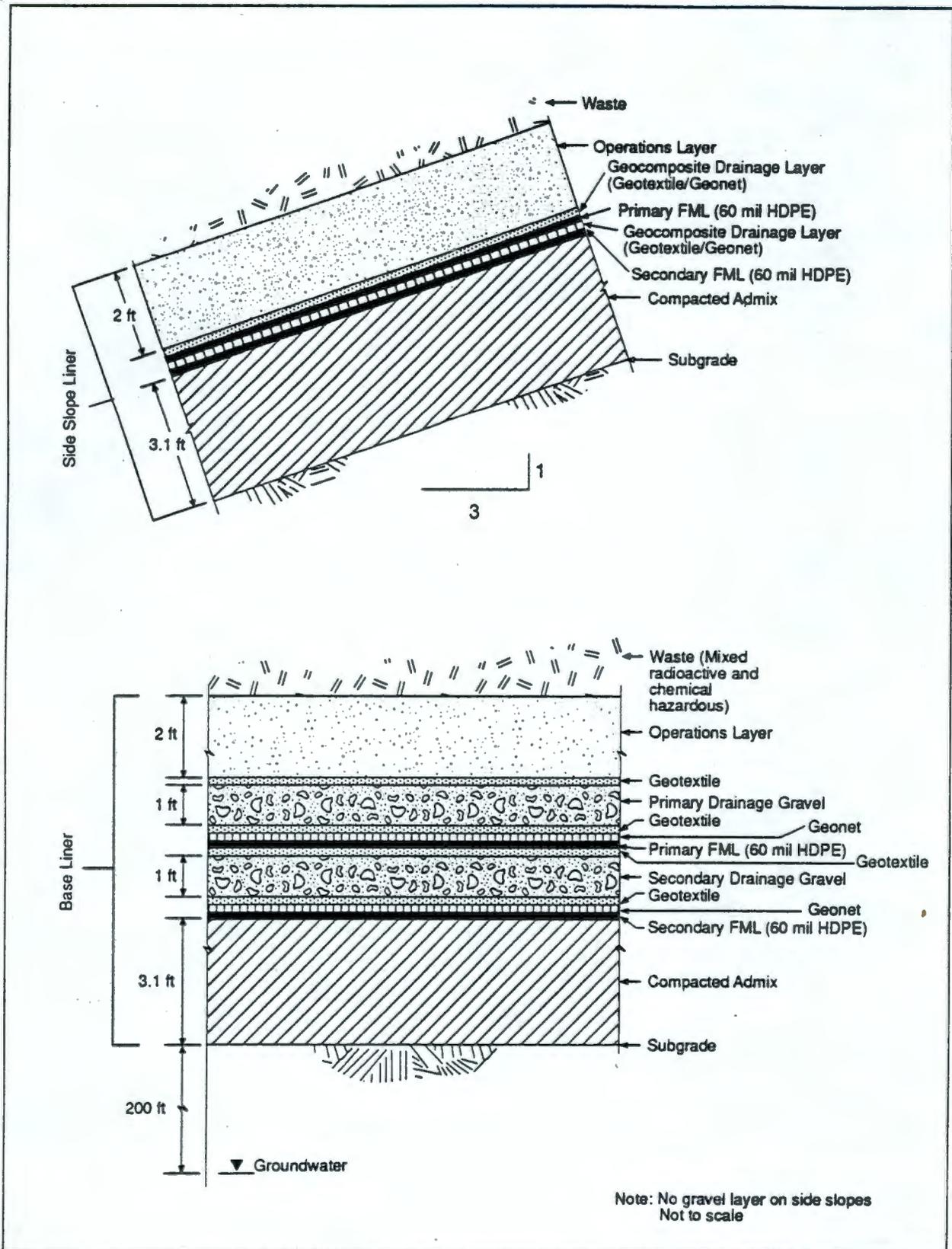
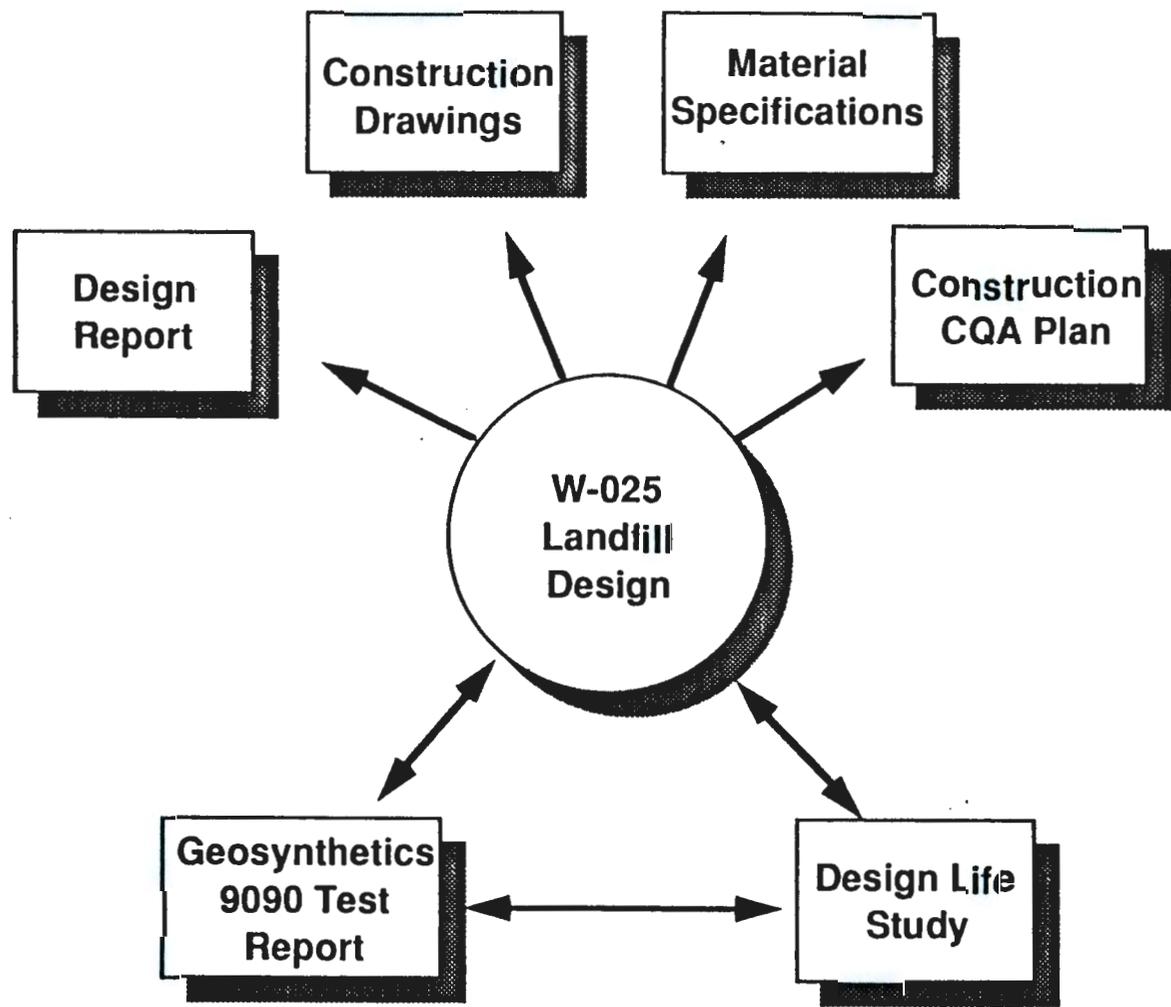


Figure 3-2b. Current Landfill Design-Liner Sections.

Liner System

- **2-ft-Thick Operations Layer: Protection**
- **Primary LCRS: Leachate Collection and Removal**
- **Primary 60 mil HDPE Geomembrane: Moisture Barrier**
- **Secondary LCRS: Leachate Detection, Collection and Removal**
- **Secondary Liner System: Moisture Barrier**
 - 60 mil HDPE Geomembrane
 - 3-ft-Thick Low Permeability Soil/Bentonite Admix Layer
- **Geotextiles: Cushioning, Separating Soils, Providing Interface Shear Strength**



EPA Test Method 9090

- **Purpose:**
 - Evaluate Chemical Compatibility of Geomembranes and Leachate
 - Eliminate Clearly Incompatible Materials
- **Applies to Geomembranes, Extrapolated to Other Materials**
- **Testing Protocol Established in Detail**
 - Duration
 - Test Temperatures
 - Types of Tests (Strength and Dimensional)
 - Number of Samples
- **Data Analysis Approach and Acceptance Criteria not Specified by EPA Method 9090**

9090 Test Program for W-025 Materials

- Tests at 0, 30, 60, 90, and 120 days
- Immersion Temperatures of 23° C or 50° C
- Radiation Exposure of 50kRad
- Synthesized Leachate
- Standard Suite of 9090 Strength and Dimensional Tests
- Non-Standard "Fingerprinting" Tests on HDPE Geomembrane (DSC, TGA)

Leachate Development

- Review WHC Waste Profile
- Define Results of Disposal Processes & Treatments
- Prepare Waste Mix
- Filter
- Analysis & Results
- Production of Large Volumes of Leachate

Number of Tests

● HDPE Geomembrane	734
● Polyester Geotextiles	1021
● HDPE Geonet	120
● HDPE Drainage Pipe	<u>247</u>
Total:	2122

Results

- **HDPE Materials:** Stable, No Deterioration
- **Polyester Geotextiles:** Slight Change in Properties Over Time

Comparison of 9090 Testing Programs

● Grout Facility

- Materials: HDPE, Polypropylene, Polyester, XR-5
- Max. Temp: 70°C and 90°C
- Radiation: 930 kRad and 39,000 kRad
- Leachate Composition: W-025 + Heavy Metals + Inorganic Salts + Organics
- Leachate pH: >13.9

● W-025 Landfill

- HDPE, Polyester
- 50°C
- 50kRad
- NaNO₃ + Minor Anions
- 9.2

W-025 Design Life Study

- **Effects of Increasing Operating Life From 2 to 20 Years**
- **If Concerns Exist, Identify Potential Engineering Modifications**

Approach

- **Develop Conceptual Model of Landfill System and Processes**
- **Identify Potential Deterioration Mechanisms (Include 9090 Test Results)**
- **Identify Detailed Parameters That Affect Deterioration**
- **Determine Most Significant Parameters**
- **Assess Likelihood of Changes With Time**
- **Evaluate Engineering Options to Mitigate Adverse Changes**

Preliminary Results

● Deterioration

- Admix Layer:
 - Desiccation
 - Freeze/Thaw
- Geomembrane:
 - Stress Cracking
 - Landfill Operations
- Geotextile:
 - Chemical Deterioration

● Design Modifications

- Increase Operations Layer Thickness
- Bentonite Mat of Admix Layer Under Primary FML
- Increase Operations Layer Thickness
- Use Polypropylene Geotextile
- Increase Geotextile Thickness

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