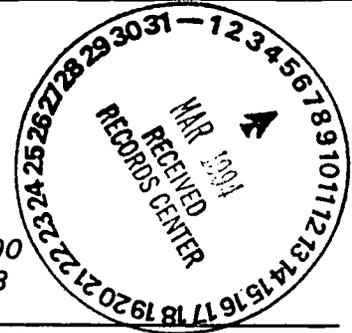




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**ENGINEERING-SCIENCE, INC.**

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**MEETING NOTES**

**TO:** Distribution

**DATE:** February 15, 1994

**FROM:** Philip Nixon

**MEMO #:** SP307:022294:01

**PROJECT #:** Solar Pond IM/IRA

**ATTENDANCE:**

Randy Ogg, EG&G  
Phil Nixon, ES  
Richard Henry, ES  
Andy Ledford, EG&G  
Dave Ericson, EG&G  
Peg Witherill, DOE  
Ted Kearns, DOE/KMI  
Lee Pivonka, G&M  
Mark Austin, EG&G  
Arturo Duran, EPA  
Steve Howard, DOE/SMS  
Shaleigh Whitsell, PRC  
Toni Moore, EG&G  
Harlen Ainscough, CDH  
Harry Heidkamp, ES

**DISTRIBUTION:**

Attendees  
L. Benson, ES  
A. Conklin, ES  
P. Breen, ES  
K. Cutter, ES  
S. Stenseng, ES  
A. Fricke, ES  
T. Kuykendall, ES  
T. Evans, ES  
B. Cropper, ES  
C. Montes, ES  
R. McConn, ES  
W. Edmonson, ES  
B. Wallace EG&G (Admin.  
Record) (2)  
S. Hughes, ES  
K. London, EG&G  
Martin McBride, DOE  
Helen Belencan, DOE

**DISTRIBUTION (CONT.)**

Steve Cooke, EG&G  
Joe Schieffelin, CDH  
Steve Keith, EG&G  
Dave Myers, ES  
R. Wilkinson, ES  
S. Winston, ES  
Kim Ruger, EG&G  
Michelle McKee, EG&G  
Marcia Dibiasi, IGO  
Rich Stegen, ES  
Cindy Gee, ES  
Alan MacGregor, ERM  
Bob Siegrist, LATO  
John Rampe, DOE  
Kevin Loos, DOE  
Steve Paris, EG&G  
Scott Surovchak, DOE  
Frazer Lockhart, DOE  
John Haasbeek, ERM

**SUBJECT:** Weekly Status Meeting

**1) Review of Meeting Minutes**

It was confirmed that Arturo Duran had specified that the EPA would require the removal of Building 788 if the soils beneath the building were contaminated. In addition Arturo specified that the EPA would require a demonstration of 3 additional criteria before they would approve leaving the building in place:

- 1) Leaving the building would need to be cost effective.
- 2) Leaving the building would not provide a physical impediment to completing the SEP closure construction.
- 3) Future uses of the building would be possible without having an adverse impact on the engineered cover.

Andy Ledford introduced Toni Moore with the EG&G Community Relations Department and indicated that she would be working with the team to prepare for public meetings. Harlen Ainscough and Arturo Duran specified that they had also held discussions with their own public relations representatives. It was agreed that the public relations personnel would meet to strategize how this information would be presented to the Public.

Lee Pivonka added clarification that not only had ERM/Geraghty and Miller frozen their design concept on the engineered cover footprint that existed on the February 8, 1994 team meeting (as agreed at that meeting), but their current understanding of the site hydrogeology was based on the March 1, 1993 RCRA Ground Water Monitoring report.

It was agreed that the Tuesday March 1 team meeting would be rescheduled for Wednesday March 2, 1994 to accommodate Harlen Ainscough's schedule conflict.

## 2) IM/IRA Decision Document

It was agreed to modify the IM/IRA review schedule as follows:

February 22, 1994 - Part I  
March 2, 1994 - Part II/Part III  
March 8, 1994 - Part IV  
March 15, 1994 - Part V  
March 22, 1994 - Part VI

The Goal is to have all the comments on these sections ready for review/discussion at the specified team meeting. However, additional comments would be accepted one week later at the next sequential team meeting. All comments must be submitted on Part VI on March 22, 1994.

Phil Nixon and Richard Henry reported that the Parts I, II, and III of the IM/IRA decision document were essentially complete with all the tables, figures, and text sections. However, the table of contents may not be totally complete and page numbers have not been placed on all of the figures and tables.

Randy Ogg asked if enough data were available to address the IAG requirement to characterize the contaminant sources and soils. Pat Breen responded that the RFI/RI program was adequate to meet the IAG requirements. However, Pat indicated that the investigation program could have been improved to be more functional for making remediation decisions. Richard Henry

indicated that their might be some follow on activities that would be helpful, such as re-activating the neutron access probes to monitor the ground water elevation. Additional samples might also be warranted to help determine more precisely the depth of excavation for the remediation. Harlen Ainscough specified that it is important to consider whether any additional data would change the proposed IM/IRA. If the answer is no, then additional confirmational sampling could be performed as a function of the IM/IRA implementation.

It was agreed that the comment/response form that was delivered with the round table review document would be used with a few minor changes. The team members were asked to specify their name and phone number in the Commentor box. Comments would be classified as:

- N- Necessary
- S- Suggested
- E- Editorial

These designators would be specified directly after the "Comment:" label on the form before the comment was written.

It was discussed that the different review groups would try to consolidate their comments so that each group has a single set of comments. Additionally, it was agreed that the round table review meetings would focus on the Necessary comments (N) in the following order:

- 1) CDH
- 2) EPA
- 3) DOE
- 4) EG&G
- 5) ERM/G&M

It was agreed that a formal comment/response document did not have to be generated for the round table review draft as it is an informal draft and the schedule is very restrictive.

### **3) Summary of the Working Group Decisions/Agreements**

Phil Nixon presented a draft document which specified the major agreements that the working group has made since the first team meeting. The major agreements were discussed and ES will re-issue the document to address specific team comments.

It was discussed that Jefferson County should be notified that a demonstration of compliance with the substantive requirements of the Colorado Hazardous Waste Landfill Siting Requirements was being prepared, but that a formal Certificate of Designation was not required pursuant to the IAG. The EPA/CDH will take the lead on notifying the Jefferson County Officials and specifying that the Lead Agency (CDH) will determine whether the requirements are achieved. The DOE/EG&G community relations department will also be involved.

#### 4) Update on Modeling

Harlen Ainscough discussed the CDH position on the consolidation of contaminated soils below the subsurface drainage system. The issue focuses on being able to demonstrate that the consolidated soils that have COC concentrations exceeding vadose zone PRGs would not leach at concentrations that would not be safe to drink in the event that the ground water table rose to an elevation that would put these soils in contact with the ground water. DOE can either demonstrate that the groundwater would not have the potential to rise to the elevation where contact with contaminated soils would occur, or demonstrate that the COCs would not be mobile under saturated conditions at concentrations that exceed appropriate comparison criteria. Harlen specified the reasons why this additional demonstration is required:

- 1) the vadose zone is shallow,
- 2) the recent RFI/RI data showing the extent of the seasonal groundwater fluctuation, and
- 3) the VLEACH results only addressed leaching under unsaturated condition.

The CDH is also considering that any contaminated soils remaining below the engineered cover but above the historic high water table elevation may be in a zone which can not be effectively remediated by proposed remediation activities. The engineered cover will prevent precipitation from percolating into these soils. A groundwater remediation system may be implemented to remediate the contaminants below the seasonal high water table elevation, but the zone above the seasonal high water table elevation to the historic high water table elevation may not be routinely flushed by contact with groundwater. Therefore this zone may not be remediated during the period that a groundwater remediation system operates, and contamination may remain as a potential source of future groundwater degradation. Phil Nixon presented the mean of the seasonal high water table elevations over the period from 1986 to 1993 (as determined under the RFI/RI program). The average water table elevation was approximately 1 foot lower than the historic high water table elevation. It was agreed that DOE would prepare the IM/IRA-EA decision document to state that clean closure would be achieved by one of the following methods:

- 1) Excavating contaminated media until all the COC concentrations are less than or equal to the vadose zone PRGs or PRGs established for ground water; or
- 2) Excavating to the elevation of the mean of the seasonal high water table elevations (in the event that COC concentrations exceed the vadose zone or ground water PRGs).

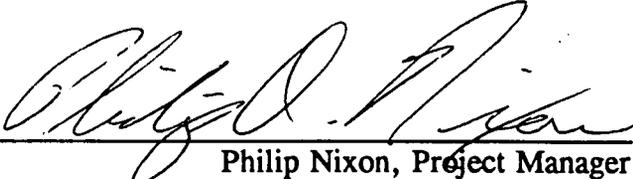
Leigh Benson provided an update with respect to the status of the saturated subsurface modeling efforts. The modeling exercise is far more complicated than previously anticipated due to the lack of site-specific data and the broad range of  $K_d$  values in the literature. There are also

several inappropriate assumptions inherent in the current methodology that make the modeling very conservative.  $K_d$  values are developed to express the adsorption of contaminants onto soils. The modeling assumes that the  $k_d$  also mathematically describes the desorption of contaminants from the soils upon saturation. However, contaminants typically desorb from soils to a lesser extent than they adsorb (meaning that some level of contamination will be irretrievably sorbed to the soils, even under complete saturation). The range of available  $K_d$  values provides conflicting data for the site. Using high  $K_d$  values in the calculations suggest that the vadose zone PRGs may be protective of ground water quality. However, the use of low  $K_d$  values suggests that there is a potential for leachate to have an adverse impact upon ground water quality. Therefore the working group needs to identify an appropriate  $k_d$  value which is specific to the OU4 site. It was discussed that simple column leaching and geochemical analysis would be useful in developing a site specific  $K_d$  value. ES indicated that it may take one month to get  $K_d$  results back from the laboratory if samples already exist in an appropriate archive form from previous OU4 borings. EG&G and DOE will discuss whether it is appropriate to initiate additional studies.

It was also discussed as to what the appropriate groundwater comparison criteria should be in order to determine whether the vadose zone PRGs are protective of ground water quality. The CDH originally stated that the required level of protection would be equivalent to drinking water standards at the point of leachate generation (e.g., leachate would be suitable for human consumption). However, ES, EG&G, and DOE question this approach. Comparison criteria should be developed for the point-of-compliance, which may be the downgradient toe of the engineered cover system for subsurface compliance requirements. ES asserted that a risk-based approach could be developed to specify ground water comparison criteria. This approach would account for receptor location, exposure potential, and fate & transport mechanisms. For example, groundwater protection criteria could be developed under the IM/IRA in concert with CDH to be protective of hypothetical potential future receptors using the appropriate exposure assumptions.

## 5) Open Issues

Harlen Ainscough specified that the CDH/EPA were preparing a letter for transmittal to DOE concerning Building 788. The letter will request that the removal of Building 788 be put back into the OU4 IM/IRA. The letter should be issued prior to the next team meeting.

  
Philip Nixon, Project Manager

OPERABLE UNIT 4/SOLAR EVAPORATION PONDS

FEBRUARY 15, 1994

AGENDA

MEETING MINUTES REVIEW	8:00-8:30
IM/IRA DECISION DOCUMENT-ES	8:30-9:30
ROUND TABLE SCHEDULE REVIEW	
DOCUMENT FORMAT/STRUCTURE	
DOCUMENT DEFICIENCIES/CONSIDERATIONS	
COMMENT CRITERIA/DISC DISTRIBUTION	
BREAK	9:30-9:45
SUMMARY OF WORKING GROUP DECISIONS/AGREEMENTS	9:45-11:00
UPDATE ON MODELLING-ES/ERM	11:00-11:30
OPEN ISSUES	11:30-12:00

**OPERABLE UNIT 4 SOLAR EVAPORATION POND  
INTERIM MEASURE/INTERIM REMEDIAL  
ACTION - ENVIRONMENTAL ASSESSMENT  
DECISION DOCUMENT**

- PART I      Introduction**
- PART II      Operable Unit 4 Phase I RCRA Facility  
Investigation/Remedial Investigation Report**
- PART III     Interim Measures/Interim Remedial Action  
Decision Analysis**
- PART IV     Recommended IM/IRA Alternative**
- PART V      Post Closure Monitoring and Assessment Plan**
- PART VI     Operable Unit 4 Phase II RCRA Facility  
Investigation/Remedial Investigation Work  
Plan**

## **PART I INTRODUCTION**

- I.0 Introduction**
- I.1 IM/IRA Objective and Purpose**
- I.2 Site History and OU4 Background**
- I.4 Site Characteristics and Environmental Setting**
- I.5 References for Part I**

# **PART II OPERABLE UNIT 4 PHASE I RCRA FACILITY INVESTIGATION/REMEDIAL INVESTIGATION REPORT**

- II.1 Introduction**
- II.2 OU4 Field Investigation**
- II.3 Results of the Phase I RFI/RI**
- II.4 Nature and Extent of Contamination**
- II.5 Contaminant Fate and Transport**
- II.6 Conclusions**
- II.7 References for Part II**

## **PART III INTERIM MEASURES/INTERIM REMEDIAL ACTION DECISION ANALYSIS**

- III.1 Remedial Action Objectives**
- III.2 Risk Analysis**
- III.3 Technology Identification and Screening**
- III.4 Detailed Analysis Evaluation Criteria**
- III.5 Detailed Analysis of General Response Actions**
- III.6 Evaluation Summary and Selection of the Preferred IM/IRA**
- III.7 References for Part III**

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February 11, 1993  
SP307:021194:03

Mr. Randy T. Ogg  
Environmental Restoration Program Manager  
EG&G Rocky Flats  
P.O. Box 464, Building 080  
Golden, Colorado 80402-0464

Subject: Summary of the Working Group Agreements

Dear Mr. Ogg:

Enclosed are a series of tables that summarize the agreements that have been made during the weekly working group meetings. These tables cover the weekly meetings from October 6, 1993 until February 8, 1994.

If you have any questions, please do not hesitate calling me at 831-8100 extension 207.

Sincerely,



Philip A. Nixon  
Project Manager: Solar Pond IM/IRA

cc: D. Ericson, EG&G  
M. Austin, EG&G  
K. Ruger, EG&G  
M. McKee, EG&G  
B. Wallace, EG&G (2)  
R. Wilkinson, ES  
T. Kuykendall, ES

H:\PROJECT\IM-IRA\SUMWKAGR.LTR

#1	DATE: October 6, 1993	SUPPORTING REFERENCE: MM: SP307: 100793:01
<b>DECISION:</b>  It was agreed that EG&G needed to identify contaminants of concern to:		
<b>WHY/RATIONALE FOR DECISION:</b> <ul style="list-style-type: none"><li>• Identify the magnitude and extent of contamination to determine whether an action is required.</li><li>• Help select and justify the recommended action.</li><li>• Provide the basis/design criteria for the design of the recommended action.</li></ul>		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 2	DATE: October 6, 1993	SUPPORTING REFERENCE: MM: SP307: 100793:01
<b>DECISION:</b>  It was agreed that the requirements of NEPA would be integrated into the IM/IRA decision document. The title of the document will be OU 4 Solar Evaporations Pond Phase I IM/IRA-EA Decision Document.		
<b>WHY/RATIONALE FOR DECISION:</b>  DOE/EG&G did not want a separate Environmental Assessment.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

#3	DATE: October 6, 1993	SUPPORTING REFERENCE: MM: SP307: 100793:01
<b>DECISION:</b>  It was agreed that the 9 CERCLA selection criteria would be used for the detailed evaluation of alternatives.		
<b>WHY/RATIONALE FOR DECISION:</b>  The IM/IRA needed to have a feasibility section. RCRA does not have guidance for evaluating alternatives, therefore the CERCLA guidance was chosen to be the model.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 4	DATE: October 13, 1993	SUPPORTING REFERENCE: MM: SP307: 101393:01
<b>DECISION:</b>  It was decided that the infiltrometer tests that were specified in the workplan would not be performed.		
<b>WHY/RATIONALE FOR DECISION:</b>  EG&G has performed a groundwater recharge study which included infiltration tests. This data may be utilized in the OU4 IM/IRA report.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 5	DATE: October 13, 1993	SUPPORTING REFERENCE: MM: SP307: 101393:01
<b>DECISION:</b>  It was agreed that it would be best if Building 788 was not used as a model/pilot study for the D&D of nuclear facilities at the Rocky Flats Plant because of the attention that this could draw.		
<b>WHY/RATIONALE FOR DECISION:</b>  It was feared that the overall schedule for project completion could be impacted if building 788 was used as the D&D pilot study for the RFP.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 6	DATE: October 28, 1993	SUPPORTING REFERENCE: MM: SP307: 102893:01
<b>DECISION:</b>  It was agreed that OU4 should consider accepting portions of the OU9 process waste lines within the scope of the OU4 IM/IRA. The potential segments are as follows: <ul style="list-style-type: none"><li>- Line 121 South of the OU4 SEPs</li><li>- Line 121 West of the OU4 Ponds from the elbow to the discharge point</li><li>- Line 149.2 on the south of C Pond</li><li>- Line 149.1 North of Pond C and A</li></ul>		
<b>WHY/RATIONALE FOR DECISION:</b>  These line segments would likely be impacted by the SEP closure.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 7	DATE: October 28, 1993	SUPPORTING REFERENCE: MM: SP307: 102893:01
<b>DECISION:</b>  It was agreed that the dermal exposure pathway will be incorporated into the PRGs, the crop ingestion pathway will not be addressed in the PRGs (this will be addressed by the future baseline risk assessment), and a forward cumulative risk assessment will not be required since the PRGs will be modified to account for the cumulative risk. ES will calculate the onsite resident scenario for both adults and children. In addition, target organs may be addressed individually while modifying the PRGs.		
<b>WHY/RATIONALE FOR DECISION:</b>  The final Baseline Risk assessment will be completed after the additional hydrogeological studies. The IM/IRA only addresses the direct exposure, inhalation, and ingestion routes of exposure for sources and soils.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 8	DATE: November 2, 1993	SUPPORTING REFERENCE: MM: SP307: 110493:01
<b>DECISION:</b>  It was agreed that the carbon tetrachloride contamination that is identified in groundwater under the south berm of C Pond was originating from Buildings 777 and/or 779 and was not a COC for the OU4 IM/IRA. Therefore, OU4 will not be expected to remediate the carbon tetrachloride.		
<b>WHY/RATIONALE FOR DECISION:</b>  Carbon tetrachloride is not coming from the SEPs and therefore, the closure of the SEPs is not likely to have a positive impact on the carbon tetrachloride concentration in ground water.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 9	DATE: November 2, 1993	SUPPORTING REFERENCE: MM: SP307: 110493:01
<b>DECISION:</b>  It was decided that only constituents that were on the OU4 RFI/RI analyte list could be COCs. It is expected that all the TICs will be eliminated by this screen since chemicals on the OU4 analyte list should not have included any TICs. In addition, the TICs could also be screened (if necessary) with respect to the historical data base. If a TIC is a COC due to the concentrations in the historical data, then it will be removed from the COC list.		
<b>WHY/RATIONALE FOR DECISION:</b>  The RFI/RI list of analytes were selected based on historical monitoring results and process knowledge. As such, constituents not on the list of analytes have a very low probability of being COCs in the IM/IRA.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 10	DATE: November 2, 1993	SUPPORTING REFERENCE: MM: SP307: 110493:01
<b>DECISION:</b>  It was decided that chemical specific ARARs/TBCs for ecological receptors will not be considered in the OU4 IM/IRA. It was agreed that the ecology of the site is heavily modified by industrial activities. It was agreed that the ecological impacts would be minimal with respect to the OU4 IM/IRA, and that the PRGs for human health exposures would likely be more stringent than ecological TBCs.		
<b>WHY/RATIONALE FOR DECISION:</b>  An ecological assessment is not of significant importance for the OU4 IM/IRA. The ecological assessment will be addressed in the follow-on hydrogeological studies.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 11	DATE: November 2, 1993	SUPPORTING REFERENCE: MM: SP307: 110493:01
<b>DECISION:</b>  It was decided that To-Be-Considered documents (TBCs) would not be considered for identifying potential clean-up standards. The clean-up standards will be driven by the PRG calculations and any promulgated standards. Groundwater protection standards will not be considered as chemical specific ARARs for the OU4 IM/IRA.		
<b>WHY/RATIONALE FOR DECISION:</b>  The TBCs for this project would mostly be ecological risk based standards that were not deemed to be relevant because the OU4 is a heavily disturbed site that does not have an established ecosystem.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 12	DATE: November 9, 1993	SUPPORTING REFERENCE: MM: SP307: 111193:01
<b>DECISION:</b>  It was agreed that OU4 will not be required to implement further characterization studies on these annexed lines.		
<b>WHY/RATIONALE FOR DECISION:</b>  The OU4 RFI/RI characterization data should be adequate for assessing the potential contamination from these lines.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 13	DATE: November 15, 1993	SUPPORTING REFERENCE: MM: SP307: 111693:01
<b>DECISION:</b>  In regards to developing the constituents of concern, it was agreed that the 95% UCLs can be used. The background data will be compared to the 95% UCLs and the readjusted PRGs would be calculated as the arithmetic mean plus two standard deviations.		
<b>WHY/RATIONALE FOR DECISION:</b>  This is consistent with CDH guidance.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input checked="" type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 14	DATE: November 15, 1993	SUPPORTING REFERENCE: MM: SP307: 111693:01
<b>DECISION:</b>  It as confirmed that the removal of Building 788 (including its NEPA documentation) would not be included as a component of the OU4 IM/IRA.		
<b>WHY/RATIONALE FOR DECISION:</b>  DOE wanted the removal of Building 788 to be a separate project so that it could be removed in the Fall of 1994 before the IM/IRA is approved.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input checked="" type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 15	DATE: November 15, 1993	SUPPORTING REFERENCE: MM: SP307: 111693:01
<b>DECISION:</b>  It was agreed that final ARAR compliance is not required until the final action. Therefore, the IM/IRA should comply with the ARARs to the maximum extent practicable. However, it was agreed that the closure requirements for a hazardous waste management unit should be complied with for the IM/IRA.		
<b>WHY/RATIONALE FOR DECISION:</b>  Some ARARs will be difficult to comply with until after the groundwater is characterized and it is determined if remediation is necessary.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 16	DATE: November 23, 1993	SUPPORTING REFERENCE: MM: SP307: 112993:01
<b>DECISION:</b>  It was agreed that the Colorado Hazardous Waste Landfill Siting criteria would be added to the ARAR table. The CDH has determined that a Certificate of Designation for a new hazardous waste landfill is not required for the OU4 IM/IRA based on Section 18 of the IAG. However, the CDH specifies that the substantive requirements of the siting criteria would need to be met in order for DOE to leave the liners in-place. The DOE will need to provide a technical demonstration that the closure alternative meets the substantive requirements of the siting criteria if the liners are left in place.		
<b>WHY/RATIONALE FOR DECISION:</b>  ES and EG&G questioned the applicability of the Colorado Hazardous Waste Landfill siting criteria to the OU4 IM/IRA.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input checked="" type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 17	DATE: December 15, 1993	SUPPORTING REFERENCE: MM: SP307: 121593:01
<b>DECISION:</b>  It was agreed that DOE would prepare the IM/IRA specifying that radiologically-contaminated hillside soils and soils that do not have an LDR concern may be consolidate under the covered area. It is likely that contaminated soils from the berms to the seep areas will be consolidated, but that soils north of the seep areas that are impacted by groundwater will be addressed by the Phase II program. It will be assumed that the CAMU concept will be adopted by CDH.		
<b>WHY/RATIONALE FOR DECISION:</b>  This will be possible since it is assumed that the State of Colorado will promulgate the CAMU concept.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input checked="" type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 18	DATE: December 15, 1993	SUPPORTING REFERENCE: MM: SP307: 121593:01
<b>DECISION:</b>  It was agreed that the liners could remain in place if it could be demonstrated that the entire remedial alternative would be protective of human health and the environment and prevent groundwater contact with the liners and contaminated media for 1000 years. Protection of groundwater must consider both vertical and lateral migration. It was agreed that this does <u>not</u> mean that the engineered barrier must be designed for a passive life span of 1000 years.		
<b>WHY/RATIONALE FOR DECISION:</b>  It was agreed that there is a reasonably high level of confidence that the 1000 year protectiveness can be demonstrated.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input checked="" type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 19	DATE: December 15, 1993	SUPPORTING REFERENCE: MM: SP307: 121593:01
<b>DECISION:</b>  It was agreed that the engineered cover design should not address the prevention of human intruders.		
<b>WHY/RATIONALE FOR DECISION:</b>  The prevention of human intruders should be address in the future by a sitewide Record of Decision.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input checked="" type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 20	DATE: January 10, 1993	SUPPORTING REFERENCE: MM: SP307: 011094:01
<b>DECISION:</b>  It was agreed that sampling and analysis would be required to verify that the excavated areas could be "clean" closed with backfill and seeding. The vadose zone PRGs would be used as the assessment basis for this verification.		
<b>WHY/RATIONALE FOR DECISION:</b>  A method of verifying that an excavated area was clean closed is required.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input type="checkbox"/> EG&G <input checked="" type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 21	DATE: January 10, 1994	SUPPORTING REFERENCE: MM: SP307: 011094:01
<b>DECISION:</b>  It was discussed that each utility will be individually addressed with respect to whether or not it would be impacted by the closure/remediation. Piping that will be removed will be disposed beneath the engineered cover as debris. Piping that will not be impacted by Closure/Remediation will be grouted in-place. Utilities that will be impacted, but are required for RFP operations, will be relocated.		
<b>WHY/RATIONALE FOR DECISION:</b>  Closure and relocation of existing utilities will be required under the IM/IRA.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input checked="" type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 22	DATE: January 11, 1994	SUPPORTING REFERENCE: MM: SP307: 011194:01
<b>DECISION:</b>  It was agreed that excavated utilities could be consolidated beneath the engineered cover.		
<b>WHY/RATIONALE FOR DECISION:</b>  The debris rule should be available as the regulatory mechanism for this consolidation.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input checked="" type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 23	DATE: January 18, 1994	SUPPORTING REFERENCE: MM: SP307: 012194:01
<b>DECISION:</b>  It was agreed that DOE was only expected to remediate soils above the ground water table under the IM/IRA. The level of the saturated zone could include the region that is seasonally saturated as the ground water table rises. This means that the zone of soil from the normal water table elevation to the seasonal historical high elevation will be considered saturated (non-vadose zone). Therefore this layer does not have to be excavated or considered as part of the IM/IRA closure/remediation.		
<b>WHY/RATIONALE FOR DECISION:</b>  Areas of the Vadose Zone that are likely to come into contact with groundwater (since the water table elevation fluctuates) should be considered saturated soils and should be addressed with the phase II program.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input checked="" type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 24	DATE: January 25, 1994	SUPPORTING REFERENCE: MM: SP307: 013194:01
<b>DECISION:</b>  It was agreed that a subsurface drainage system would be installed beneath the liners. The liners in the B-Series SEPs will be raised to the level of the liners in SEP207-A. Contaminated media will be used as backfill to create the artificial vadose zone beneath the SEP207-B series pond liners.		
<b>WHY/RATIONALE FOR DECISION:</b>  There is a concern that the liners could be put in contact with groundwater if the watertable rises to the historical seasonal high elevation.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input checked="" type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 25	DATE: January 1, 1994	SUPPORTING REFERENCE: MM: SP307: 013194:01
<b>DECISION:</b>  It was agreed that ES would include only the appendices that were important to have as reference materials during the round table draft review. Appendices will be made available to any reviewer who request a copy to substantiate their review.		
<b>WHY/RATIONALE FOR DECISION:</b>  Given the review schedule, it was highly unlikely that reviewer would have an opportunity or need to read many of the appendices.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input checked="" type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 26	DATE: January 25, 1994	SUPPORTING REFERENCE: MM: SP307: 013194:01
<b>DECISION:</b>  It was agreed that the Building 788 foundation and other concrete debris could be rubblized and consolidated under the engineered cover.		
<b>WHY/RATIONALE FOR DECISION:</b>  The CAMU concept would allow the consolidation of remediation project debris within the 1000 year engineered barrier.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input checked="" type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 27	DATE: January 25, 1994	SUPPORTING REFERENCE: MM: SP307: 013194:01
<b>DECISION:</b>  It was agreed that the OU4 IM/IRA was only required to address contamination within the OU4 boundaries. However, DOE may consider the cost benefit from remediating adjacent areas (if required). It was agreed the DOE would only remediate a quantity of soils from outside the OU4 boundaries that could be consolidated into a covered area of reasonable size based upon the physical site constraints at OU4.		
<b>WHY/RATIONALE FOR DECISION:</b>  It is important to define a boundary for the remediation aspects of the project.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input checked="" type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 28	DATE: January 25, 1994	SUPPORTING REFERENCE: MM: SP307: 013194:01
<b>DECISION:</b>  It was agreed that the boundary of the POC would be based on any or all of the following:  1) The IHSS boundary 2) The area of the original ponds 3) Ten feet past the engineered cover's surface water collection system, and/or the IHSS boundary		
<b>WHY/RATIONALE FOR DECISION:</b>  The POC needs to be defined so that G&M can determine an appropriate number of wells for post-closure assessment monitoring.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input checked="" type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 29	DATE: February 1, 1994	SUPPORTING REFERENCE: MM: SP307: 020394:01
<b>DECISION:</b>  EG&G would pursue a clean closure of the SEP 207-C. EG&G would excavate down to the level of the historical high water table elevation if necessary and would take samples as excavation was proceeding. In addition, conformational samples would be taken for the purpose of verifying that clean closure was achieved.		
<b>WHY/RATIONALE FOR DECISION:</b>  A cost benefit analysis indicated that it was likely to be cheaper to excavate C-Pond and consolidate it under the 1000 year cover than to build a 30-year engineered cover.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input checked="" type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 30	DATE: February 1, 1994	SUPPORTING REFERENCE: MM: SP307: 020394:01
<b>DECISION:</b>  It was agreed that sampling in the SEP 207-C and SEP 207-B south would not have to be done as currently planned as long as equivalent characterization data was provided during the closure/remediation. DOE may perform sampling and analysis as required to support the design effort.		
<b>WHY/RATIONALE FOR DECISION:</b>  The RFI/RI sampling would not be required as originally scheduled if the SEP-207-C and SEP-207-B south were going to be excavated and clean closed.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input checked="" type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 31	DATE: February 1, 1994	SUPPORTING REFERENCE: MM: SP307: 020394:01
<b>DECISION:</b>  It was agreed by all parties that these Parts will be submitted for roundtable review on March 1, 1994 since the team will be reviewing other Parts until that time.		
<b>WHY/RATIONALE FOR DECISION:</b>  Since the conceptual design strategy for SEP 207-C changed, ES and ERM/G&M needed additional time to incorporate the changes into the conceptual design.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input checked="" type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

# 32	DATE: February 1, 1994	SUPPORTING REFERENCE: MM: SP307: 020394:01
<b>DECISION:</b>  It was agreed that the paved road through the buffer zone area will not require remediation via this project. Remediation of this road (if necessary will concur when the overall site remediation/closure occurs unless EG&G/DOE decide that it is best to remediate this road as part of the OU4 IM/IRA project.		
<b>WHY/RATIONALE FOR DECISION:</b>  The road may need to be used for delivery of construction materials and for general site access.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input checked="" type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

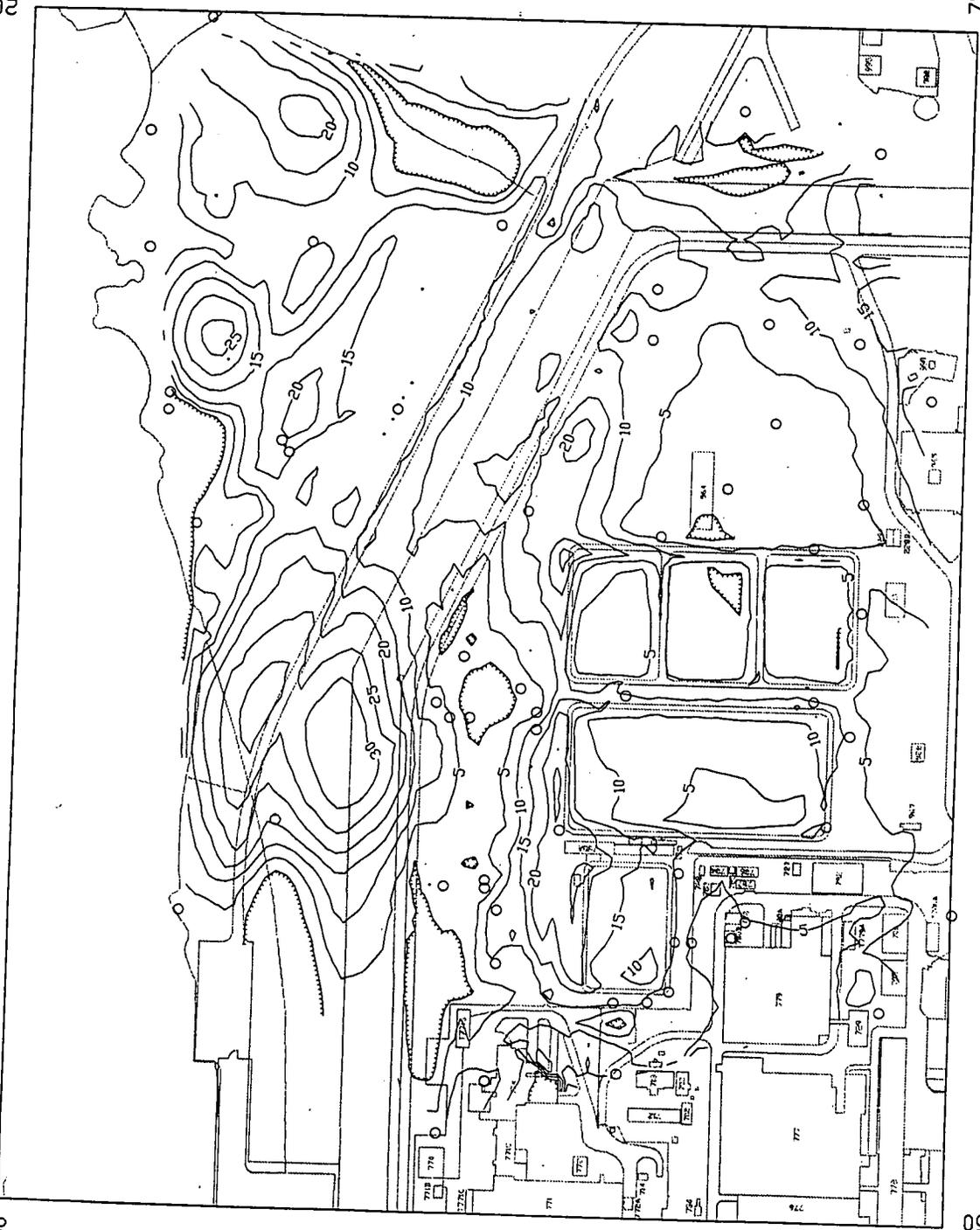
# 33	DATE: February 1, 1994	SUPPORTING REFERENCE: MM: SP307: 020394:01
<b>DECISION:</b>  The initial post-closure monitoring would be for all the analytes listed in the OU4 RFI/RI workplan. This list may also be analyzed once each year. Only constituents that have been detected in soil would need to be analyzed during the remaining quarterly sampling.		
<b>WHY/RATIONALE FOR DECISION:</b>  The purpose of post-closure monitoring is to determine if the closed unit is providing a source to groundwater contamination.		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input checked="" type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

#	DATE:	SUPPORTING REFERENCE: MM: SP307: 013194:01
<b>DECISION:</b>		
<b>WHY/RATIONALE FOR DECISION:</b>		
CONCURRING AGENCIES/ORGANIZATIONS: <input checked="" type="checkbox"/> DOE <input checked="" type="checkbox"/> CDH <input checked="" type="checkbox"/> EPA <input checked="" type="checkbox"/> EG&G <input checked="" type="checkbox"/> ERM <input checked="" type="checkbox"/> ES		

MINIMUM VADOSE  
ZONE USING  
AVERAGED MAXIMUM  
WATER LEVELS  
OF THE UPPER HSU

2086300  
752100

750200



2086300

2/15/94

208385  
752100

750200

2083850

contains or spills liquids. This might include references to existing RFP Standard Operating Procedures.

ATTACHMENT 5  
SP307:032294:01  
page 1 of 1

2) **Schedule Review**

Andy Ledford discussed the project schedule. The roundtable review draft will be provided to the project team on the afternoon of February 14, 1994. Each weekly meeting thereafter will focus on comments from a specific part of the IM/IRA-decision document. Andy Ledford requested that comments be submitted in writing (or marked-up sections may be provided). Only major comments should be addressed at the meetings so that they can be expedited.

The following schedule provides the meeting dates for addressing comments on the specific parts:

February 15, 1994	-	Kickoff meeting
February 22, 1994	-	Part I/Part II
March 1, 1994	-	Part III
March 8, 1994	-	Part IV
March 15, 1994	-	Part V
March 22, 1994	-	Part VI

3) **Permitting Issues - Building 788**

Ted Kearns presented issues to discuss concerning the removal of Building 788. Arturo indicated that the removal of Building 788 was originally included in the IM/IRA. EPA/CDH had agreed to potentially consider addressing Building 788 outside the IM/IRA if DOE thought that this could expedite the removal. EPA, however, expects to receive a draft closure/removal plan on April 14, 1994.

A separate meeting was tentatively scheduled to discuss the removal of Building 788 on January 24, 1994. A summary of the key issues is presented below.

- Could the building be relocated and keep its RCRA storage permit intact. Harlan Ainscough indicated that this is highly unlikely. Steve Howard indicated that perhaps Building 788 could be used as an addition to an existing waste storage facility to allow the existing facility to achieve its permitted capacity. Harlan indicated that this might be possible, and that he would investigate this potential.
- Harlan Ainscough indicated that RCRA Unit 21 would require closure as part of the Building 788 removal.
- Consolidation of Building 788 rubble/debris under the IM/IRA engineered cover might be technically feasible as long as the material could be size-reduced such