UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2405

RECEIVED JUL 1991

Ref: 8HWM-FF

JUL 3 1991

Scott Grace
Environmental Restoration Division
Department of Energy/Rocky Flats Plant
P.O Box 928
Golden, CO 80402

Dear Scott,

This letter serves to: 1) transmit EPA's and PRC's comments on the Final Site-wide Treatability Studies Plan (STP); 2) formalize our discussions in the meeting held June 24, 1991 among EPA, DOE and CDH, and; 3) to establish the process for EPA's approval of the Final STP and establishment of dates for subsequent submittals.

EPA's and PRC's comments on the Final STP (June 3, 1991) are attached. These comments are being submitted for DOE's consideration in preparing annual updates and other future submittals under the Treatability Study program. In the interest of moving the program forward, approval of the Final TSP will not be delayed pending response to these items, but will proceed as outlined below. In addition to the comments offered here EPA has a number of concerns relating to specific items on the screening tables which we would like to discuss informally at your earliest convenience. CDH comments will be submitted under separate cover.

It is our understanding that DOE is to provide EPA and CDH with the revised Final STP on July 15, 1991; this revision is to contain changes as required to address general concerns expressed during our June 24, 1991 meeting. Also, DOE should immediately start preparation of workplans for two of the selected treatability studies. In addition, DOE has agreed to provide the agencies with a proposed schedule for future deliverables including treatability study workplans, treatability study reports and annual update reports.

The agreed-upon approval procedure for the Final STP will consist of review of revisions as will be presented on July 15, 1991; and agreement between EPA, CDH, and DOE on the schedule for future deliverables. If suitable revisions and an acceptable schedule are submitted as planned EPA expects to grant approval of the Final STP by July 22, 1991. The negotiated dates will be included within our approval letter and will subsequently be considered enforceable milestones under the IAG.

ADMIN RECORD

A-SW-000041

If you have any questions regarding this matter, please contact Arturo Duran of my staff at 294-1080.

Sincerely,

for Martin Hestmark, Rocky Flats team Leader

cc: Bill Fraser, 8HWM-FF
Arturo Duran, 8HWM-FF

EPA Comments on the Final Site-Wide Treatability Studies Plan

GENERAL COMMENTS

The contents of this document have improved in comparison with the previous draft document. However, EPA has significant concerns with the selected treatability studies which need to be addressed in the specific treatability study workplans to be developed. In addition, we have identified some shortcomings in the literature review and the selection process, as well as some inconsistencies between the text and the tables and some confusion over how the studies identified in this plan relate to on-going IM/IRAs and other treatability studies.

EPA is concerned that the treatability studies identified in this plan for future completion, have in fact either previously been conducted or are currently being performed under other programs or as part of the on-going IM/IRAs. The intent of this document is to identify treatability studies that would help us to gather new information which could be utilized to support the RI/FS decision making process. This Site-wide Treatability Studies Plan must acknowledge the fact that treatability studies have already been conducted for some of the technologies chosen. Furthermore, the workplans for these technologies must include results of bench scale tests which have been already been conducted and justification for any additional new studies.

Review of the references provided indicates that they are a number of pertinent items missing. EPA recommends that a more thorough literature review on treatment technologies be conducted in the future in order to incorporate new technologies in the annual update reports. Also, EPA recommends that technologies for treatment of PCBs be identified at this point for future consideration.

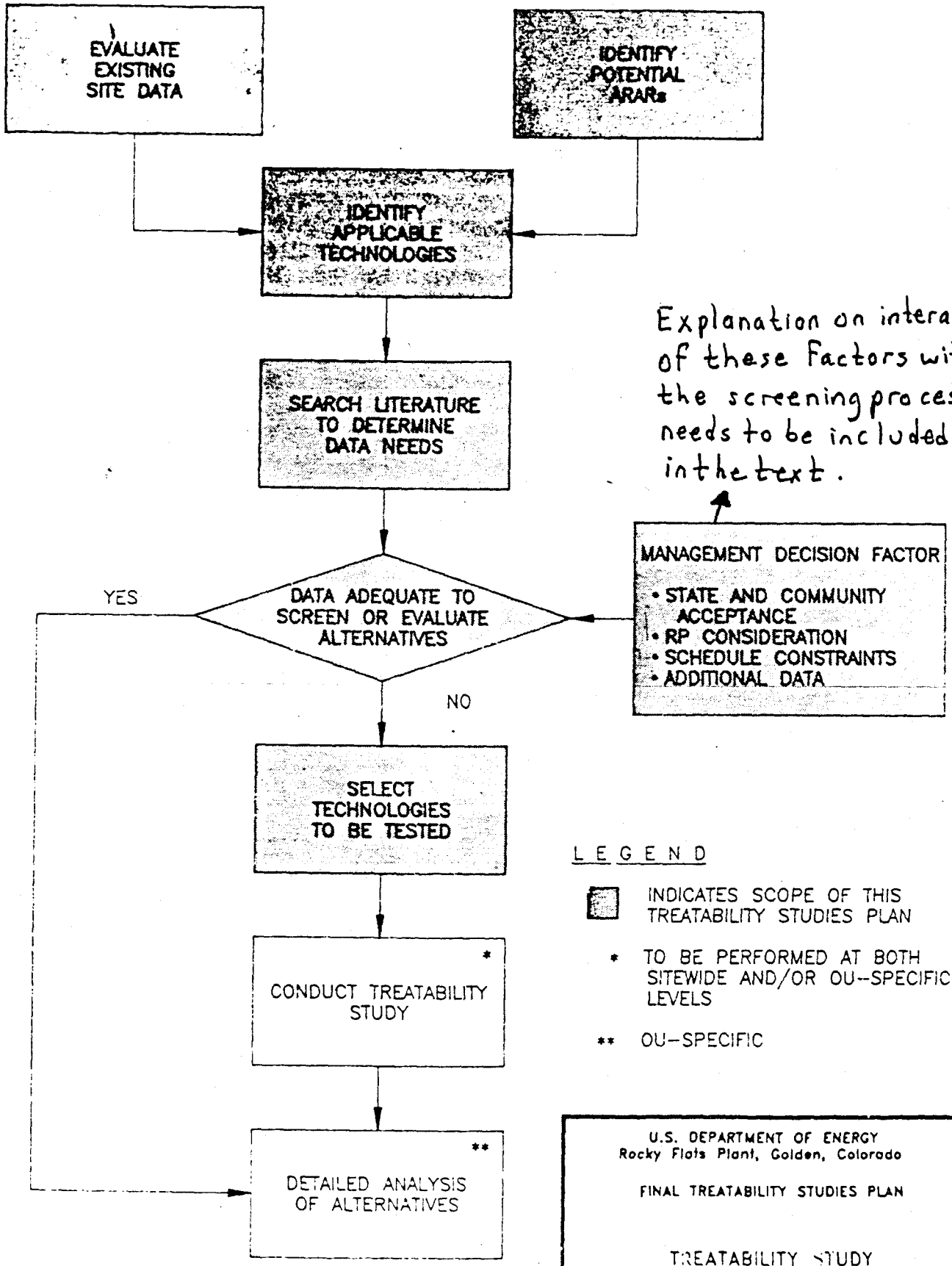
The documentation on the selection process needs to be more comprehensive. For example, detailed information on the criteria for rejecting or selecting technologies needs to be included. The advantages of a selected technology in comparison to other technologies which perform a similar function need to be explained in more detail in the text or in the respective tables. It should be noted that "too innovative" is not, by itself, a valid reason for rejecting a technology, but should instead be reason to watch developments in that area more closely, and to reexamine the viability of that option in the next annual update.

Inconsistencies throughout the document between statements made in the text and information presented in tables and appendices need to be addressed. The text should include a

description for all the technologies listed on the tables using the same name as presented in the tables to avoid confusion.

Technologies already selected for on-going IM/IRAs at Rocky Flats (OU1 & OU2) need to be distinguished from other selected technologies. It is not clear how DOE is going to pursue these technologies as OU and/or Site-wide activities. Data from bench scale or pilot/field scale efforts conducted as IM/IRAs, needs to be considered in the selection process as described in this document. Lessons learned from these efforts must be integrated in the overall literature data base, and given full consideration when evaluating possible future efforts under the site-wide program. How this will be coordinated and how these efforts relate to one another must be explained, so the public can understand how this new program relates to actions they have already reviewed and commented on.

DOE is to submit annual reports on treatability studies to EPA and CDH. The annual reports should include information on all the activities performed during the year, as well as an update on the literature review for treatment technologies. In addition, DOE is to reevaluate all the technologies presently being considered in this document on an annual basis. This would help to incorporate technologies that are rejected at this point, but could present a higher potential to treat Rocky Flats waste in the future.



Explanation on interaction of these factors with the screening process needs to be included in the text.

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

FINAL TREATABILITY STUDIES PLAN

TREATABILITY STUDY PROCESS

SOURCE: EPA/540/2-89/058

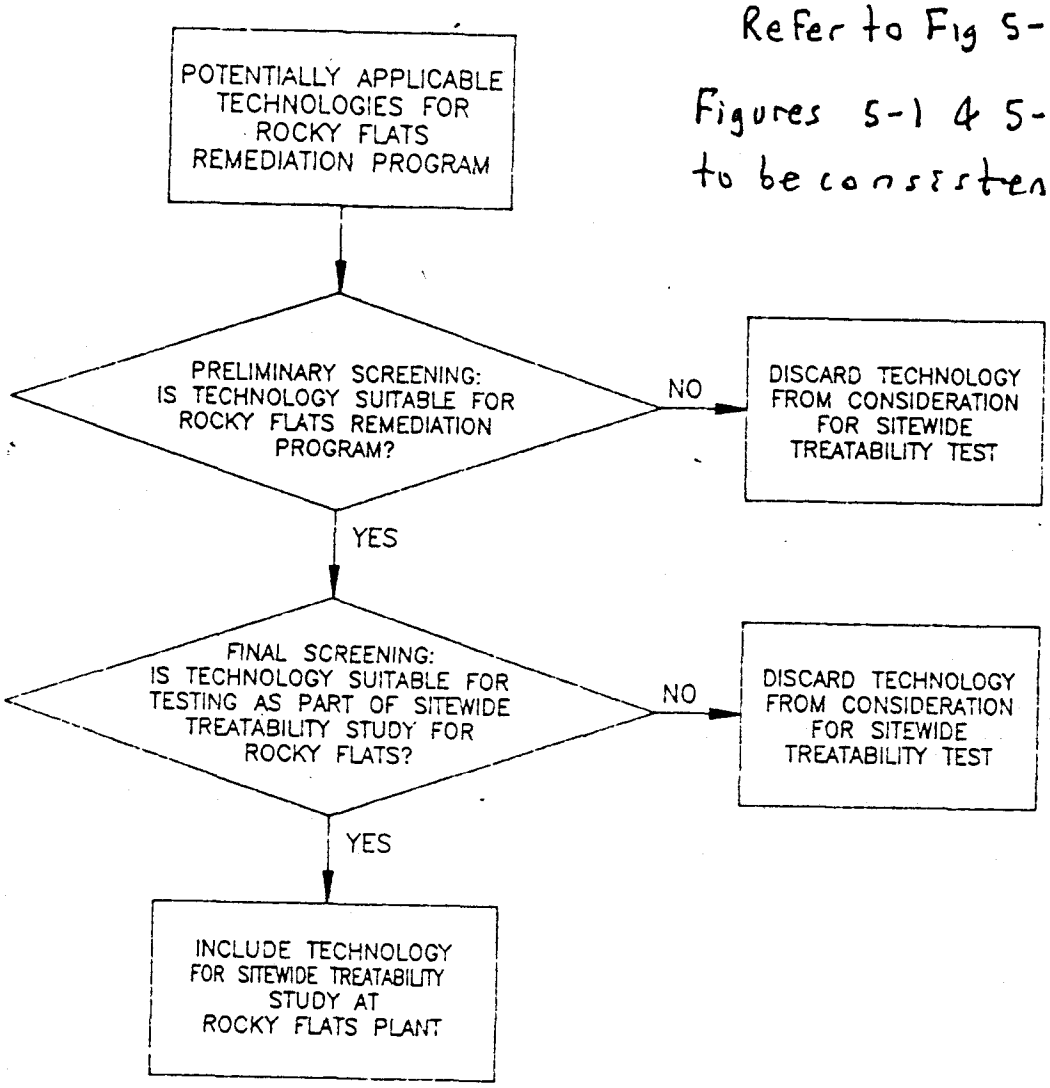
FIGURE 5-1 MAY 1991

24990020

Where is the "Management decision Factor" and How is it used in this selection process?

Refer to Fig 5-1

Figures 5-1 & 5-2 need to be consistent.



U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

FINAL TREATABILITY STUDIES PLAN

SELECTION PROCESS FOR TECHNOLOGIES TO BE INCLUDED IN SITEWIDE TREATABILITY TEST PROGRAM

FIGURE 5-2 MAY 1991

24990050

TABLE 5-3A

POTENTIALLY APPLICABLE TECHNOLOGIES
GROUNDWATER AND SURFACE WATER

VOLATILE ORGANICS

PHYSICAL PROCESSES

Activated Carbon
Air Stripping
Distillation
Steam Stripping

CHEMICAL PROCESSES

Electron Beam
Gamma Irradiation
Oxidation by Hypochlorite
Ozonation
Peroxide Oxidation
Solar Photocatalytic
Ultraviolet Oxidation
Ultraviolet Photolysis

BIOLOGICAL

why aren't other Bio processes listed for SemiVOA's here too?

Anaerobic

This is too general. What are the aneorobic processes been considered here? Please list all the technologies available. Also, more research or thorough review is recommended in this area.

INCINERATION

Advanced Electric Reactor
Circulating Bed
Industrial Kiln/Furnace
Liquid Injection
Oxygen Enhanced Incinerator
Plasma Arc
Rotary Kiln
Submerged Quench
Supercritical Water Oxidation
Wet Air Oxidation

Incineration process is not applicable for water treatment. This needs to be explained in the text, and this table needs to be corrected.

TABLE 5-3A

POTENTIALLY APPLICABLE TECHNOLOGIES
GROUNDWATER AND SURFACE WATER
(Continued)

SEMIVOLATILE ORGANICS { probably not necessary to distinguish VOA's from semi's at this stage

PHYSICAL PROCESSES

Activated Carbon
Emulsion Liquid Membrane
Freeze Crystallization
Solar Evaporation
Solvent Extraction
Steam Stripping

CHEMICAL PROCESSES

Catalytic Dechlorination
Chlorinolysis
Electron Beam
Gamma Irradiation
Hydrolysis
MASX/MADS Process
Oxidation by Hypochlorite
Ozonation
Peroxide Oxidation
Solar Photocatalytic
Supercritical Extraction
Ultraviolet Oxidation
Ultraviolet Photolysis

BIOLOGICAL

Activated Sludge
Aerated Lagoon
Anaerobic Digestion
In-Situ Bioremediation
Powdered Activated Carbon
Rotating Biological Disk
Sequence Batch Reactor
Submerged Aerobic Fixed Film Reactor
Trickling Filter
White Rot Fungus

could these technologies be applicable for VOA's?

INCINERATION

Advanced Electric Reactor
Circulating Bed
Industrial Kiln/Furnace
Liquid Injection
Oxygen Enhanced Incinerator
Plasma Arc
Rotary Kiln
Steam Stripping/Catalytic or Thermal Oxidation
Submerged Quench
Supercritical Water Oxidation
Wet Air Oxidation

Not Applicable For water treatment, see previous comments page T-15

TABLE 5-3A

POTENTIALLY APPLICABLE TECHNOLOGIES
GROUNDWATER AND SURFACE WATER
(Continued)

INORGANICS

PHYSICAL PROCESSES

Adsorption
Electrodialysis
Emulsion Liquid Membrane Separation
Evaporation
Freeze Crystallization
Ion Exchange
Reverse Osmosis
Solar Distillation

Hasn't this technology already been chosen for OU 1 IM/IRA?

CHEMICAL

Alkaline Chlorination
Oxidation/Reduction

"The text needs to explain the relationship between technologies chosen under the site-wide Treatability Study Plan and the on-going IM/IRAs."

METALS

PHYSICAL PROCESSES

Adsorption
Electrodialysis
Evaporation
Freeze Crystallization
Ion Exchange
Reverse Osmosis

CHEMICAL

Neutralization
Oxidation/Reduction
Precipitation

BIOLOGICAL

Bioaccumulation {Again, too general. Please list all the bioaccumulation technologies available.

TABLE 5-3A

POTENTIALLY APPLICABLE TECHNOLOGIES
GROUNDWATER AND SURFACE WATER
(Concluded)

RADIONUCLIDES	
PHYSICAL PROCESSES	
Adsorption	Reverse Osmosis
Evaporation	Techtran, Inc. Process
Ion Exchange	Ultrafiltration/Microfiltration
CHEMICAL PROCESSES	
Neutralization	Precipitation
Oxidation/Reduction	Tru-Clear
BIOLOGICAL	
Bioaccumulation	

Aren't bench scale studies currently being performed at RFP?

TABLE 5-3B

POTENTIALLY APPLICABLE TECHNOLOGIES
SOIL AND SEDIMENTS

VOLATILE ORGANICS

BIOLOGICAL PROCESSES

In-Situ Bioremediation
Slurry Reactor

PHYSICAL/CHEMICAL PROCESSES

Chemical Reduction - Oxidation
Glycolate Dechlorination
In-Situ Soil Flushing
Soil Washing
Vacuum Extraction

This technology is not discussed in the text in reference to VOA's

INCINERATION

Fluidized Bed
High Temperature Fluid Wall
Infrared Electric Furnace
Liquid Injection
Molten Glass
Molten Salt/Sodium Fluxing
Multiple Chamber Incinerator

Aren't these type of treatments the same?

Oxygen Enhanced Incinerator
Plasma Arc
Rotary Kiln
Solar
Submerged Quench
Supercritical Water Oxidation
Vacuum Extraction/Catalytic Incineration
Vacuum Extraction/Thermal Incineration

What are the advantages of looking at so many Incineration processes?

THERMAL PROCESSES

AOSTRA TACIUK Process
HT-5 Thermal Distillation
In-Situ Vacuum Extraction and Steam Injection
Indirect Heating

Low Temperature Thermal Desorption
Low Temperature Thermal Treatment
Radio-Frequency Heating
Wet Air Oxidation

SEMIVOLATILE ORGANICS

BIOLOGICAL PROCESSES

Composting
In-Situ Bioremediation

Land Treatment
Slurry Reactor

Again, too general. Please, be specific.

TABLE 5-5A
GROUNDWATER/SURFACE WATER TREATMENT TECHNOLOGIES RETAINED AFTER PRELIMINARY SCREENING

Contaminant Group	Physical Treatments	Chemical Treatments	Biological Treatments	Incineration Treatments
Volatile Organics	Activated Carbon Air Stripping Steam Stripping	Gamma Irradiation Ozonation Peroxide Oxidation Ultraviolet Oxidation Ultraviolet Photolysis		Supercritical Water Oxidation
Semivolatile Organics	Activated Carbon Freeze Crystallization Steam Stripping	Catalytic Dechlorination Gamma Irradiation Ozonation Peroxide Oxidation Ultraviolet Oxidation Ultraviolet Photolysis	In-Situ Bioremediation Powdered Activated Carbon *Submerged Aerobic Fixed Film Reactor*	Steam Stripping/Catalytic or Thermal Oxidation Supercritical Water Oxidation
Inorganics	Adsorption *Electrodialysis* Evaporation Freeze Crystallization Ion Exchange Reverse Osmosis	Alkaline Chlorination Oxidation/Reduction		
Metals	Adsorption *Electrodialysis* Evaporation Freeze Crystallization Ion Exchange Reverse Osmosis	Neutralization Oxidation/Reduction Precipitation		
Radionuclides	Adsorption *Evaporation* Ion Exchange Reverse Osmosis Ultra/Micro-Filtration	Neutralization Oxidation/Reduction Precipitation Tru-Clear		

Do not need to distinguish between volatile organics and semivolatile organics at this stage.

Haven't these technologies already been chosen for OU1 & OU2 IM/IRAs. On-going projects should not be included in this plan.

Weren't bench scale studies performed for this technology already at RFP

TABLE 5-5B
SOIL/SEDIMENT TREATMENT TECHNOLOGIES RETAINED AFTER PRELIMINARY SCREENING
(Concluded)

Contaminant Group	Physical/Chemical Treatments	Biological Treatments	Incineration Treatments	Thermal Treatments	Solidification/ Stabilization
Metals	Physical Separation Soil Washing	Research on this area is needed.	Molten Glass		Asphalt Asphalt Based (Thermoplastic) Microencapsulation Glassification/Vitrification In-Situ Stabilization In-Situ Vitrification Lime-Fly Ash Pozzolan Process Polymerization-Epoxy Polymerization-Polyester Portland Cement Process
Radionuclides	Magnetic Separation Physical Separation Soil Washing TRU Clean	Biological treatments have potential applicability for radionuclides. Research on this area is recommended.	Molten Glass		Asphalt Glassification/Vitrification In-Situ Stabilization In-Situ Vitrification Lime/Fly Ash Pozzolan Process Masonry Cement Polymerization-Epoxy Polymerization-Polyester Portland Cement Process

TABLE 5-6A

GROUNDWATER/SURFACE WATER TREATMENT TECHNOLOGIES
NOT PASSING PRELIMINARY SCREENING
(Continued)

Technology	Reason Rejected from Further Consideration at This Time
Hydrolysis	Too innovative with unknown effectiveness and ability to meet cleanup goals; questionable implementability.
MASX/MADS Solvent Extraction/Distillation Stripping	Too innovative is not a valid reason for rejection ~~Too innovative~~ with unknown effectiveness and ability to meet clean-up goals; ~~questionable implementability~~.
Oxidation by Hypochlorite	Leads to formation of toxic trihalomethane by-products.
Solar Photocatalytic	Too innovative with unknown effectiveness and ability to meet clean-up goals; questionable implementability.
Supercritical Extraction	Too innovative with unknown effectiveness and ability to meet clean-up goals; questionable implementability.
Semivolatile Organics - Biological Treatments	
Activated Sludge	Inability to meet cleanup goals; produces waste sludge.
Aerated Lagoon Reactor	Low potential to meet cleanup goals; produces waste sludge.
Anaerobic Digestion	Inability to meet cleanup goals; produces waste sludge.
Rotating Biological Disk	Inability to meet cleanup goals; produces waste sludge.
Sequence Batch Reactor	Inability to meet cleanup goals; produces waste sludge.
Trickling Filter	Inability to meet cleanup goals; produces waste sludge.
White-rot Fungus	Too innovative with unknown ability to meet cleanup goals.

TABLE 5-6A

GROUNDWATER/SURFACE WATER TREATMENT TECHNOLOGIES NOT PASSING PRELIMINARY SCREENING

Technology	Reason Rejected from Further Consideration at This Time
Volatile Organics - Physical Treatments	
Distillation	Produces liquid waste; less suitable than other proven technologies. Equipment is very expensive and requires high energy usage.
Volatile Organics- Chemical Treatments	
Electron Beam	Too innovative with undefined O&M requirements and implementability; potential for formation of undesirable by-products.
Oxidation by Hypochlorite	Leads to formation of toxic trihalomethane by-products.
Solar Photocatalytic	Too innovative with unknown effectiveness and undefined O&M requirements and implementability; potential for formation of undesirable by-products.
Volatile Organics - Biological Treatments	
Anaerobic	Possible low removal efficiencies with questionable ability to meet clean-up goals; produces a waste sludge.
Volatile Organics - Incineration Treatments	
Advanced Electric Reactor	Low potential to meet clean-up goals; unsuitable for treatment of water matrix containing low concentrations of contaminants.
Circulating Bed	Low potential to meet clean-up goals; unsuitable for treatment of water matrix containing low concentrations of contaminants.
Industrial Kiln/Furnace	Low potential to meet clean-up goals; unsuitable for treatment of water matrix containing low concentrations of contaminants.
Liquid Injection	Low potential to meet clean-up goals; unsuitable for treatment of water matrix containing low concentrations of contaminants.

These by-products can be treated. We don't believe that the formation of these by-products is a justification for rejecting the technology.

TABLE 5-6B
SOIL/SEDIMENT TREATMENT TECHNOLOGIES NOT PASSING PRELIMINARY SCREENING

Technology	Reason Rejected From Further Consideration at This Time
Volatile Organics - Biological Treatments	
In-Situ Bioremediation	Low potential to meet cleanup goal.
Slurry Reactor	Most suitable for high organic concentrations; produces liquid waste. Excavation and extensive materials handling required.
Volatile Organics - Physical/Chemical Treatments	
Chemical Reduction-Oxidation	Low potential to achieve cleanup goals; produces liquid waste.
Glycolate Dechlorination → Include this technology as a PCBs treatment.	Suitable for PCBs; unknown ability to achieve cleanup goals; produces liquid waste stream.
In-Situ Soil Flushing	Too innovative with unknown effectiveness; produces liquid waste.
Volatile Organics - Incineration Treatments	
High Temperature Fluid Wall	Low potential to meet cleanup goals; extensive O&M requirements.
Liquid Injection	Applicable to concentrated soil washing solutions only.
Plasma Arc	Low potential to meet cleanup goals; PIC formation a potential problem.
Solar	Too innovative with unknown potential to achieve cleanup goals.
Submerged Quench	Low potential to meet cleanup goals; produces liquid brine water.

TABLE 5-6B
SOIL/SEDIMENT TREATMENT TECHNOLOGIES NOT PASSING PRELIMINARY SCREENING
(Continued)

Technology	Reason Rejected From Further Consideration at This Time
Metal Matrices	Too innovative and primarily suited to radionuclide containment; very high O&M requirements.
Polymer Impregnated Concrete	Too innovative; must be applied in conjunction with other stabilization processes. → Not necessarily a fatal flaw
Polymerization - Urea - Resin	Yields corrosive liquids.
Polypropylene	Too innovative; unknown problems with O&M.
Pyro-disintegrator	High O&M requirements with extensive materials handling; may produce emissions.
Sorption	Not effective without application of other stabilization processes.
Sulfur Polymer Concrete	Too innovative with unknown O&M and implementation issues.
Wax	Too innovative; must be applied in conjunction with other stabilization processes.
Radionuclides - Physical/Chemical Treatments	
Electrokinetic	Too innovative with unknown effectiveness and ability to meet cleanup goals; problems with implementability.
In-Situ Soil Flushing	High O&M requirements; may cause environmental problems.

This table needs to distinguish on-going projects (OU1 & OU2) From projects to be conducted under this p

TABLE 5-7A
SITEWIDE TREATABILITY TEST PROGRAM
SELECTION MATRIX FOR TECHNOLOGIES TO BE TESTED
GROUNDWATER AND SURFACE WATER

Contaminant: Volatiles

Technology	Additional Data from Laboratory, Bench or Pilot Bench Testing Needed for Selection	Offers Advantages over Other Available Technologies*	Amenable to Testing at Bench/Lab Scale	Test at Bench/Lab Scale	Amenable to Testing at Pilot Scale	Anticipated EPA, State, and/or Community Acceptance	Test** at Pilot Scale
Activated Carbon	No	Yes	Yes	No	Yes	No problems expected	No
Air Stripping	No	Yes	No	No	Yes	Potential problems	No
Gamma Irradiation	Yes	No	No	No	No	No problems expected	No
Ozonation	Yes	Yes	No	No	Yes	No problems expected	Yes
Peroxide Oxidation	Yes	Yes	No	No	Yes	No problems expected	Yes
Steam Stripping	No	No	No	No	Yes	No problems expected	No
Supercritical Water Oxidation	Yes	No	No	No	Yes	Problems expected	No
Ultraviolet Oxidation	Yes	Yes	No	No	Yes	No problems expected	Yes
Ultraviolet Photolysis	Yes	Yes	No	No	Yes	No problems expected	Yes

* Includes one or more advantages pertaining to cost effectiveness, O&M requirements, or fewer adverse impacts relative to applicable technologies that do not require testing.

** Need for pilot testing will be reviewed in annual reports. Review will be based on results achieved during bench/lab tests (if conducted) and an additional review of site characterization, ARARs, technology data, cost of pilot testing and full scale implementation, and EPA/CDH input.

TABLE 5-8

TECHNOLOGIES SELECTED FOR BENCH OR LABORATORY SCALE TREATABILITY STUDIES*

Groundwater and Surface Water			Appendix B Page Number for Technology Data Sheet
Adsorption	for	Metals/Radionuclides	B-1.1
Ion Exchange	for	Metals/Radionuclides	B-1.6
Oxidation/Reduction	for	Metals/Radionuclides	B-1.11
Tru-Clear	for	Radionuclides	B-1.24
Ultrafiltration/ Microfiltration	for	Radionuclides	B-1.26
Soil and Sediments			
Epoxy Polymerization Stabilization	for	Metals/Radionuclides	B-1.19
Physical Separation	for	Metals/Radionuclides	B-1.14
Polyester Polymerization Stabilization	for	Metals/Radionuclides	B-1.19
Portland Cement Stabilization	for	Metals/Radionuclides	B-1.19
Soil Washing	for	Metals/Radionuclides	B-1.17
Magnetic Separation	for	Radionuclides	B-1.8
Masonry Cement Stabilization	for	Radionuclides	B-1.19
TRU Clean	for	Radionuclides	B-1.23

- Additional review will be conducted after completion of bench and laboratory tests to determine if pilot testing should be conducted.

What is the relationship between selected treatability studies under this program with the ongoing IM/IRAs? This concern needs to be addressed.

TABLE 5-9

TECHNOLOGIES IDENTIFIED FOR PILOT SCALE TREATABILITY STUDIES*

Groundwater and Surface Water			Appendix B Page Number for Technology Data Sheet
Ozonation	for	Volatile Organics	B-1.3
Peroxide Oxidation	for	Volatile Organics	B-1.3
Ultraviolet Oxidation	for	Volatile Organics	B-1.3
Ultraviolet Photolysis	for	Volatile Organics	B-1.28

* Additional review of site characterization data, ARARs, technology data, costs of pilot testing and full scale implementation of technologies, and input from CDH/EPA will be conducted to determine if pilot testing is required.

please see comment on page T-118

TABLE 6-2

SUGGESTED ORGANIZATION OF THE TREATABILITY STUDIES REPORT[1]

1. Introduction
   - 1.1 Site description
     - 1.1.1 Site name and location
     - 1.1.2 History of operations
     - 1.1.3 Prior removal and remediation activities
   - 1.2 Waste stream description
     - 1.2.1 Waste matrices
     - 1.2.2 Pollutants/chemical
   - 1.3 Remedial technology description
     - 1.3.1 Treatment process and scale
     - 1.3.2 Operating features
   - 1.4 Previous treatability studies at the site

2. Conclusions and Recommendations
   - 2.1 Conclusions
   - 2.2 Recommendations

3. Treatability Study Approach
   - 3.1 Test objectives and rationale
   - 3.2 Experimental design and procedures
   - 3.3 Equipment and materials
     - 3.4.1 Waste stream
     - 3.4.2 Treatment process
   - 3.5 Data management
   - 3.6 Deviations from the work plan

4. Results and Discussion
   - 4.1 Data analysis and interpretation
     - 4.1.1 Analysis of waste stream characteristics
     - 4.1.2 Analysis of treatability study data
     - 4.1.3 Comparison to test objectives
   - 4.2 Quality assurance/quality control
   - 4.3 Costs/schedule for performing the treatability study
   - 4.4 Key contacts

References

Appendices
- A. Data summaries
- B. Standard operating procedures

A section addressing generated waste needs to be included. Information on volume of waste, characteristic of waste, types and management of waste should be included.

[1] EPA Guide for Conducting Treatability Studies Under CERCLA (U.S. EPA 1989b)

TABLE 7-1

TREATABILITY STUDIES PROGRAM SCHEDULE

Submittal Dates	Description
Sept. 21, 1990	Draft Treatability Studies Plan (TSP) to Agencies
June 3, 1991	Final Treatability Studies Plan (TSP) to Agencies
July 3, 1991	Approval by EPA and CDH
May 26, 1993	Draft Treatability Study Report to Agencies
Oct. 20, 1993	Final Treatability Study Report to Agencies

This Table needs to delineate the dates for subsequent submittals after the approval of this document. This should include dates for submittal of treatability study workplans, treatability study reports and annual updates reports.