

## **APPENDIX H**

### **ALTERNATIVE EVALUATION CRITERIA SCORING SYSTEM LANDFILL NO. 2, PARCEL 79(6), AND LANDFILL NO. 3, PARCEL 80(6)**

## Comparative Analysis Rating Factor Basis

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Criterion	Rating Points
<b>Overall Protection of Public Health and the Environment</b>	
Alternative will provide ultimate long-term mitigation of threats to public health, welfare, and the environment.	3
Alternative will mitigate threats to public health and the environment, but leaves a possibility of risk under unlikely circumstances, or long-term future threats may occur due to failure, but failure is unlikely.	2
Alternative will mitigate threats to public health and the environment, but either public and/or environment may be exposed to risk under likely circumstances, or long-term future threats are likely to occur due to failure.	1
Alternative does not mitigate threats to public health and the environment.	0
<b>Compliance with ARARs, and other Criteria, Advisories, and Guidance as Practicable</b>	
Alternative will comply with ARARs, other criteria, advisories, and guidance as practical with no further action required.	3
Some further action will be required in order to comply with ARARs, other criteria, advisories, and guidance as practical, but it is probable that compliance is uncertain.	2
Extensive further action will be required in order to comply with ARARs, other criteria, advisories, and guidance as practical, and/or achievement of compliance is uncertain.	1
Alternative does not comply with ARARs, other criteria, advisories, and guidance as practical.	0
<b>Long-term Effectiveness</b>	
<b>Adequacy and Reliability of Controls</b>	
Alternative provides permanent treatment or disposal with future risk essentially eliminated with no need for engineering controls.	3
Alternative requires limited engineering controls which can be assumed to be reliable, leaving little likelihood of future risk.	2
Alternative requires extensive engineering controls which can be assumed to be reliable, leaving little likelihood of future risk.	1
Uncertainty of future risk or reliability of controls.	0
<b>Degree of Required Maintenance Activity</b>	
Alternative requires no maintenance activities.	3
Alternative requires minimal maintenance activities or requires activities to be conducted at a frequency of less than twice a year.	2
Alternative requires extensive maintenance activities or requires activities to be conducted at a frequency of greater than twice a year.	1
Required maintenance activities associated with the alternative make the alternative impracticable.	0
<b>Reduction of Toxicity, Mobility, or Volume</b>	
Alternative provides 100% reduction in toxicity, mobility and volume.	3
Alternative provides for reduction in toxicity and mobility only.	2
Alternative provides reduction to an extent, but not completely, in toxicity, mobility, or volume.	1
Alternative provides no reduction of toxicity, mobility, or volume.	0
<b>Amount of hazardous materials to be destroyed, treated or recycled</b>	
Alternative destroys, treats, or recycles 100% of identified hazardous materials.	3

## Comparative Analysis Rating Factor Basis

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Criterion	Rating Points
Alternative destroys, treats, or recycles > 75% of identified hazardous materials.	2
Alternative destroys, treats, or recycles some component of identified hazardous materials.	1
Alternative does not destroy, treat, or recycle any of the identified hazardous materials.	0
<b>Degree to which the treatment will be reversible</b>	
Treatment is irreversible for all possible site conditions.	3
Treatment could be reversible under unlikely site conditions.	2
Uncertainty with regard to whether the treatment is reversible under the site conditions.	1
Treatment is easily reversible under the site conditions, or alternative involves no treatment.	0
<b>Type and quantity of residuals that will remain after completion of activities</b>	
Treatment will create no residuals of insignificant volume.	3
Treatment will create a small quantity of residual subject to disposal restrictions due to toxicity characteristics, but which can be transported to and disposed of at an approved off-site facility (transportation is not cost-prohibitive due to small quantity).	2
Treatment will create a large quantity of residual which exhibits no characteristics causing it to be subject to hazardous disposal restrictions, but incurs high transportation costs due to the large quantity	1
Treatment will create a large quantity of residual which exhibits one or more characteristics causing it to be subject to heavy disposal restrictions.	0
<b>Short-term Effectiveness</b>	
<b>Short-term risks posed to the community during implementation of alternative</b>	
Community is at no risk of chemical or physical hazards from implementation of the alternative.	3
Community is at minimal risk of chemical or physical hazards from implementation of the alternative, but with some precautions, risks can be considered negligible.	2
Extensive precautions must be taken in order to protect the community from risk of chemical or physical hazards created by implementation of the alternative.	1
Community is exposed to risk of chemical or physical hazards from implementation of the alternative.	0
<b>Potential impact on workers during remedial action and the effectiveness and reliability of protective measures</b>	
Workers are at no risk of chemical and/or physical hazards from implementation of the alternative.	3
Workers are at minimal risk of chemical and/or physical hazards from implementation of the alternative, but with some precautions, risks can be considered negligible.	2
Extensive precautions must be taken in order to protect the workers from risk of chemical and/or physical hazards created by implementation of the alternative.	1
Workers are exposed to risk of chemical and/or physical hazards from implementation of the alternative.	0

## Comparative Analysis Rating Factor Basis

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Criterion	Rating Points
<b>Potential environment impacts of the remedial action and the effectiveness and reliability of mitigative measures during implementation.</b>	
Alternative will not have any adverse impacts on the environment.	3
Alternative may have adverse impacts on the environment, but they can readily be controlled or remedied.	2
Uncertainty as to whether alternative will have adverse impacts on the environment, or likelihood that it will.	1
Alternative will have adverse impacts on the environment.	0
<b>Time until mitigating measures provide protection of the environment from impacts of the remedial action</b>	
No mitigating measures will be necessary to protect the environment from environment impacts.	3
Mitigating measures will provide protection to the environment immediately.	2
Uncertainty as to the amount of time needed for achievement of protection from mitigating measures, or up to a year.	1
More than 1 year required to achieve protection from environmental impacts of the alternative.	0
<b>Implementability (Technical Feasibility)</b>	
<b>Construction and operational considerations</b>	
Alternative requires no construction and no operation	3
Alternative requires standard construction or operational activity, with no unknown or special difficulties anticipated.	2
Alternative requires unfamiliar construction activity or activities and/or extensive operation activities.	1
Alternative requires construction and/or operation which is impossible for the site conditions or circumstances.	0
<b>Reliability of the technology employed as part of the alternative</b>	
Technology employed as part of the alternative has demonstrated successful performance in large field-scale applications under similar site conditions.	3
Technology employed as part of the alternative has demonstrated successful performance in large field-scale applications under different site conditions.	2
To date, technology employed as part of the alternative has not demonstrated successful performance in large field-scale applications, or uncertainty as to similarity of conditions.	1
Technology employed as part of the alternative has failed under similar site conditions, media, and contaminants.	0
<b>Adaptability to environmental conditions</b>	
Alternative will perform uniformly in all site environmental conditions.	3
Small-scale construction or operational adjustments must be made to accommodate probable site environmental conditions.	2
Small-scale construction or operational adjustments must be made to accommodate probable site environmental conditions.	1
Alternative will fail or require large-scale, costly adjustments under likely site environmental conditions.	0
<b>Ease of undertaking additional remedial actions</b>	
Alternative will in no way inhibit any possible future remedial actions; or no future remedial actions could reasonably be anticipated.	3
Alternative will not greatly hinder any future additional remedial actions which could reasonably be anticipated.	2

## Comparative Analysis Rating Factor Basis

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Criterion	Rating Points
Alternative will make any future remedial actions which could reasonably be anticipated extremely difficult and/or expensive.	1
Alternative will preclude future remedial actions which will likely be necessary for protection of the environment or human health.	0
<b>Ability to monitor the effectiveness of the remedy</b>	
Standard sampling or testing procedures can readily and inexpensively be employed to test effectiveness of remedy.	3
Extra difficulty or expense involved to monitor effectiveness of remedy, but can be done with relative certainty that the results are accurate.	2
Uncertainty as to the legitimacy or results obtained by available monitoring methods, or severe difficulty will be encountered in monitoring effectiveness.	1
Effectiveness of remedy cannot be monitored.	0
<b>Implementability (Availability of Services and Materials)</b>	
<b>Availability of equipment</b>	
Alternative requires no special equipment which is not readily available (can be delivered or begin working at the site within 2 weeks or less)	3
Alternative requires special equipment which will require greater than 2 weeks but less than 3 months to be delivered or begin working at the site.	2
Alternative requires special equipment, which will require greater than 3 months but less than 6 months to be delivered or begin working at the site.	1
Alternative requires special equipment, which will require greater than 6 months to be delivered or begin working at the site.	0
<b>Availability of personnel and services</b>	
Alternative requires no special service(s) which are readily available (can be delivered or begin working at the site within 2 weeks or less)	3
Alternative requires special service(s), which will require greater than 2 weeks but less than 3 months to be delivered or begin working at the site.	2
Alternative requires special service(s), which will require greater than 3 months but less than 6 months to be delivered or begin working at the site.	1
Alternative requires special service(s), which will require greater than 6 months to be delivered or begin working at the site.	0
<b>Outside laboratory testing capacity</b>	
Alternative requires no laboratory testing.	3
Alternative requires laboratory testing which can be performed by an approved laboratory within a 150-mile radius.	2
Alternative requires laboratory testing which can be performed by an approved laboratory $\geq$ 150-mile radius.	1
Alternative required laboratory testing which cannot be performed by any laboratory.	0
<b>Off-site treatment and disposal capacity</b>	
Alternative does not require off-site treatment and/or disposal.	3
Alternative requires off-site treatment and/or disposal capacity, which is available at an approved facility within the state or region (at standard reasonable cost).	2
Alternative requires off-site treatment and/or disposal capacity which is not available within the region, but is available in the county (incurring excess transportation costs than a facility within the region)	1
Alternative requires off-site treatment and/or disposal greater than the capacity of any approved facility.	0

## Comparative Analysis Rating Factor Basis

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Criterion	Rating Points
<b>Post removal site control</b>	
Alternative requires no post removal site control (theoretically).	3
Alternative requires no additional post removal site control other than the standard security already in place.	2
Alternative requires minimal, or moderate but short-term post removal site control in addition to the standard security already in place.	1
Alternative requires extensive post removal site control.	0
<b>Implementability (Administrative Feasibility)</b>	
<b>Activities needed to coordinate with other offices and agencies and the ability and time required to obtain any necessary approvals and permits from other agencies (for off-site actions).</b>	
No involvement from agencies other than the current involvement of EPA and ADEM is necessary.	3
Special approvals or permits may be required, but no foreseen problems or lengthy time required to obtain them.	2
Either uncertainty as to difficulty in obtaining special approvals or permits required, or difficulty and/or lengthy waiting period anticipated.	1
Special permits and/or approvals are necessary but can probably not be obtained, or can not be obtained in a feasible time frame.	0
<b>Implementation within a 1 year schedule</b>	
0-3 months	3
3-6 months	2
6 months – 1 year	1
Greater than 1 year	0
<b>Easements of rights-of-way</b>	
Alternative has no effect on easements or rights-of-way, nor do easements or right-of-way affect the alternatives.	3
Alternative could create complications with easements or right-of-way, or vise versa, but problems could be easily prevented or remedied.	2
Alternative could create complications with easements or rights-of-way, or vise versa, which would require extensive time/effort or cost to prevent right(s)-of-way.	1
Alternative is adversely affected by or adversely affects easement(s) or right(s)-of-way.	0
<b>Community Acceptance</b>	
Alternative has no adverse impact on adjoining property, and is compatible with future reuse plan.	3
Alternative could have adverse impacts on adjoining property or future reuse plan, but impacts can be easily prevented or easily remedied.	2
Alternative could have adverse impacts on adjoining property or future reuse plan, which would require extensive time/effort or cost to prevent or remedy.	1
Alternative adversely affects adjoining property or future reuse plan, with no readily apparent remedy.	0
<b>State Acceptance</b>	
State's position, key concerns, or comments on ARARs are known to be compatible with alternative.	3
Alternative will most likely be accepted by the state with moderate paperwork and communication.	2

## Comparative Analysis Rating Factor Basis

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Criterion	Rating Points
State has expressed a position, key concern, or comments on ARARs, which might be incompatible with one or more aspects of the alternative.	1
Alternative cannot or is unlikely to receive state acceptance.	0
<b>Cost</b>	
<b>Direct Capital Cost</b>	
Direct capital cost is less than \$500,000.	3
Direct capital cost is between \$500,000 and \$1,000,000	2
Direct capital cost is between \$1,000,000 and \$2,000,000	1
Direct capital cost exceeds \$2,000,000	0
<b>Indirect Cost</b>	
Alternative increases resale value of property, or creates some other indirect revenue.	3
No direct costs (including loss of plant productivity, decrease of property resale value, or other) are associated with the alternative. Or, indirect costs are offset by savings in direct capital costs.	2
Substantial indirect costs are likely to result from the alternative, but cannot be quantified at the time of implementation. Or, indirect costs can be quantified, and the net effect makes the total cost of the alternative between \$750,000 and 1,000,000.	1
Indirect costs are excessive. If quantifiable, the net effect will make the total cost of the alternative exceed \$1,000,000.	0
<b>Annual Operation and Maintenance Costs</b>	
Annual operation and maintenance costs are less than \$50,000.	3
Annual operation and maintenance costs exceed \$50,000, but are less than \$100,000.	2
Annual operation and maintenance costs exceed \$100,000, but are less than \$200,000.	1
Annual operation and maintenance costs exceed \$200,000.	0

**APPENDIX H**

**ALTERNATIVE EVALUATION CRITERIA SCORING SYSTEM**  
**LANDFILL NO. 2, PARCEL 79(6)**

**Table H-1**

**Score and Cost Summary for Evaluated Alternatives for  
Landfill No. 2, Parcel 79(6)  
Fort McClellan, Alabama**

(Page 1 of 3)

Criteria	Alternative Number			
	1	2	3	4
<b>Overall Protection of Human Health and the Environment</b>	<b>1</b>	<b>2</b>	<b>2.5</b>	<b>3</b>
<b>Compliance with ARARs, andd other Criteria, Advisories, and Guidance as Practicable</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>
<b>Long-Term Effectiveness and Permanence</b>				
Adequacy and reliability of controls	0	2	3	3
Degree of required maintenance activity	0	2	2	3
Total (Average) Score for Long-Term Effectiveness and Permanence	<b>0</b>	<b>2</b>	<b>2.5</b>	<b>3</b>
<b>Reduction of Toxicity, Mobility, or Volume</b>				
Amount of hazardous materials to be destroyed, treated or recycled	0	0	0	1
Degree to which the treatment will be reversible	0	0	0	1
Type and quantity of residuals that will remain after completion of activities	0	0	0	1
Total (Average) Score for Reduction of Toxicity, Mobility, or Volume	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>Short-Term Effectiveness</b>				
Short-term risk posed to the community during implementation of alternative	3	2	1	1
Potential impact on workers during remedial action and effectiveness and reliability of protective measures	3	2	1	1
Potential impact on workers during remedial action and effectiveness and reliability of mitigative measures during implementation	3	2	2	1
Time until mitigating measures provide protection of environment from impacts of the remedial action	3	2	2	1
Total (Average) Score for Short-Term Effectiveness	<b>3</b>	<b>2</b>	<b>1.5</b>	<b>1</b>

**Table H-1**

**Score and Cost Summary for Evaluated Alternatives for  
Landfill No. 2, Parcel 79(6)  
Fort McClellan, Alabama**

(Page 2 of 3)

Criteria	Alternative Number			
	1	2	3	4
<b>Implementability</b>				
Construction and operational considerations	3	2	2	1
Reliability of the technology employed as part of the alternative	0	2	3	3
Adaptability to environmental conditions	3	2	1	1
Ease of undertaking additional remedial actions	3	2	1	0
Ability to monitor the effectiveness of the remedy	3	2	2	3
Availability of equipment	3	3	2	2
Availability of personnel and services	3	3	2	2
Outside laboratory testing capacity	3	3	2	2
Off-site treatment and disposal capacity	3	3	2	2
Post removal site control	0	3	2	2
Activities needed to coordinate with other offices and agencies and the ability and time required to obtain any necessary approvals and permits from other agencies (for off-site actions)	3	2	2	1
Implementation within a 1 year schedule	3	3	2	1
Easements of rights-of-way	3	2	1	1
<b>Total Score for Implementability</b>	<b>2.5</b>	<b>2.5</b>	<b>1.8</b>	<b>1.6</b>

**Table H-1**

**Score and Cost Summary for Evaluated Alternatives for  
Landfill No. 2, Parcel 79(6)  
Fort McClellan, Alabama**

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Criteria	Alternative Number			
	1	2	3	4
State Agency Acceptance	0	2	3	3
Community Acceptance	1	2	2	3
<b>Cost</b>				
Direct Capital Cost	3	3	2	1
Indirect Cost	3	1	2	1
Annual Operation and Maintenance Costs	3	1	0	3
Total Score for Cost	<b>3.0</b>	<b>1.7</b>	<b>1.3</b>	<b>1.7</b>
<b>Total Score</b>	<b>13.5</b>	<b>17.2</b>	<b>17.7</b>	<b>20.3</b>

<b>Total Present Worth of Operation and Maintenance (O&amp;M) (\$)</b>	0	69,000	256,000	0
<b>Capital Cost (\$)</b>	0	120,000	762,000	1,915,000
<b>Net Present Worth (\$)</b>	<b>0</b>	<b>189,000</b>	<b>1,018,000</b>	<b>1,915,000</b>

**APPENDIX H**

**ALTERNATIVE EVALUATION CRITERIA SCORING SYSTEM**  
**LANDFILL NO. 3, PARCEL 80(6)**

**Table H-2**

**Score and Cost Summary for Evaluated Alternatives for  
Landfill No. 3, Parcel 80(6), Fort McClellan, Alabama**

(Page 1 of 3)

Criteria	Alternative Number			
	1	2	3	4
<b>Overall Protection of Human Health and the Environment</b>	0	1	2	3
<b>Compliance with ARARs, and other Criteria, Advisories, and Guidance as Practicable</b>	0	1	2	3
<b>Long-Term Effectiveness and Permanence</b>				
Adequacy and reliability of controls	0	2	3	3
Degree of required maintenance activity	0	2	2	3
Total (Average) Score for Long-Term Effectiveness and Permanence	0	2	2.5	3
<b>Reduction of Toxicity, Mobility, or Volume</b>				
Amount of hazardous materials to be destroyed, treated, or recycled	0	0	1	3
Degree to which the treatment will be reversible	0	0	1	3
Type and quantity of residuals that will remain after completion of activities	0	0	1	3
Total (Average) Score for Reduction of Toxicity, Mobility, or Volume	0	0	1	3
<b>Short-Term Effectiveness</b>				
Short-term risk posed to the community during implementation of alternative	3	2	2	1
Potential impact on workers during remedial action and effectiveness and reliability of protective measures	3	3	2	1
Potential impact on workers during remedial action and effectiveness and reliability of mitigative measures during implementation	3	3	2	1
Time until mitigating measures provide protection of environment from impacts of the remedial action	3	2	2	1
Total (Average) Score for Short-Term Effectiveness	3	2.5	2	1

**Table H-2**

**Score and Cost Summary for Evaluated Alternatives for  
Landfill No. 3, Parcel 80(6), Fort McClellan, Alabama**

(Page 2 of 3)

Criteria	Alternative Number			
	1	2	3	4
<b>Implementability</b>				
Construction and operational considerations	3	2	1	1
Reliability of the technology employed as part of the alternative	0	2	3	3
Adaptability to environmental conditions	3	2	1	1
Ease of undertaking additional remedial actions	3	2	1	0
Ability to monitor the effectiveness of the remedy	3	2	2	3
Availability of equipment	3	3	1	2
Availability of personnel and services	3	3	2	2
Outside laboratory testing capacity	3	3	2	2
Off-site treatment and disposal capacity	3	3	2	2
Post removal site control	0	3	2	2
Activities needed to coordinate with other offices and agencies and the ability and time required to obtain any necessary approvals and permits from other agencies (for off-site actions)	3	2	2	1
Implementation within a 1 year schedule	3	3	1	1
Easements of right-of-ways	3	2	1	1
<b>Total Score for Implementability</b>	<b>2.5</b>	<b>2.5</b>	<b>1.6</b>	<b>1.6</b>

**Table H-2**

**Score and Cost Summary for Evaluated Alternatives for  
Landfill No. 3, Parcel 80(6), Fort McClellan, Alabama**

(Page 3 of 3)

Criteria	Alternative Number			
	1	2	3	4
State Agency Acceptance	0	1	2	3
Community Acceptance	0	1	2	3
<b>Cost</b>				
Direct Capital Cost	3	3	0	0
Indirect Cost	3	3	0	0
Annual Operation and Maintenance Costs	3	0	0	3
Total Score for Cost	3.0	2.0	0.0	1.0
<b>Total Score</b>	<b>8.5</b>	<b>13.0</b>	<b>15.1</b>	<b>21.6</b>

Total Present Worth of Operation and Maintenance (O&M) (\$)	0	1,757,000	2,228,000	0
Capital Cost (\$)	0	79,000	5,865,000	10,700,000
Net Present Worth (\$)	0	1,836,000	8,093,000	10,700,000