5/7/97

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Document No		Document Title
RF/RMRS-96-0061	REV 0	Final Site Specific H&S Plan for the Source Removal at the Mound Site

Instructions: REMOVE OLD PAGES & INSERT NEW FIELD CHANGES TO AFFECTED PAGES

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ADMIN RECORD

LOGSHEET FOR FIELD CHANGES TO CONTROLLED DOCUMENTS

Change Number	Date	Document Number	Document Title	Section/Page Modified	Description of Change (s)	Resp Manager Approval	Compliance Approval	ESH&Q Approval	Rad Eng Approval	Completion of ADM 2 01 Checklist	Completion of of SES/USQD Checklist
10	5/7/97	RF/RMRS 96-0061	Final Site Specific H+S Plan for the	4.0 Page 15	Added requirement for new AHAs for similar tasks	[signature]	N/A [signature]	MDS	[signature]	MDS	MDS
11	5/7/97	↓	Source Removal at the Mound	Table 7.1 Page 44	Added CSFS Hot Spot and CSFS sampling to table	[signature]	↓	MDS	[signature]	MDS	MDS
12	5/7/97		Site IHSS 113	App B	Added Task 15 AHA for Hot Spot removal at CSFS	[signature]		MDS	[signature]	MDS	MDS
13	5/7/97	↓	↓	App B	Added Task 16 AHA for CSFS sampling	[signature]	↓	MDS	[signature]	MDS	MDS

Submitted to document control 5/7/97 [signature]

4 0 SCOPE OF WORK

The scope of work will involve site preparation and subsequent excavation of approximately 400 to 1,000 cubic yards of contaminated soil using standard excavation equipment The soil will be transported to and temporarily stockpiled in the CSFS, located approximately 600 feet east of the Mound Site (Figure 3 2) The CSFS is just south of where the thermal desorption treatment equipment will be mobilized to process the soil After excavation is completed, contaminated soil will be treated using a low temperature thermal desorption remediation technology and stockpiled in the treated soil stockpile area Treated soil, upon confirmed attainment of performance goals, will be backfilled into the excavation Reclamation of the stockpile, treatment, and excavation area will be performed to return these areas to improved natural conditions The following is a breakdown of the tasks to be implemented during the source removal at the Mound Site A task-specific hazard analysis is included in Section 5 5 and task specific Activity Hazard Analyses are included in Appendix B Note Should additional tasks with activities and hazards simular to those listed below arise during the course of the project, a task specific Activity Hazard Analysis will be developed and incorporated into Appendix B

Field Change No 10

4.1 TASK 1 - SITE PREPARATION

Most of the site preparation will involve the installation of a culvert in the Central Avenue drainage ditch and the subsequent backfilling of the ditch to provide a loading area during excavation of the Mound Site The remainder of the work will consist of minor road improvements, and establishing work zones and equipment infrastructure at both the excavation and the CSFS areas

The culvert installation, minor road improvements, and establishing equipment infrastructure are included in this HASP for overall project continuity although the work does not involve radiological or chemical hazards Work will be performed in accordance with all portions of this HASP with the exception of the portions which address chemical and radiological hazards

Tasks to be completed during the installation of the culvert and conducting minor road improvements will include

- Installing approximately two hundred feet of 30" culvert in the bottom of the Central Avenue drainage ditch This will require excavating approximately one foot of the bottom of the ditch to attain proper grade for the culvert Excavated soil will be placed on the northeast side of the mound excavation area to control incidental runon and runoff during excavation of the Mound Site,
- Backfilling the Central Avenue drainage ditch to provide a loading area during excavation of the Mound Site Backfilling the Central Avenue drainage ditch will require the removal of vegetative soil, scarifying the surface, compacting the fill material, and the use of a nuclear soil-density gauge to evaluate compaction, and

- Conducting minor road improvements along Central Avenue including the placement of road base, compacting and grading

Tasks to be completed during the establishment of equipment infrastructure at both the excavation and the CSFS include

- Constructing secondary containments to hold poly tanks that will receive stormwater from either the Mound Site excavation or the plastic lined stormwater ditch surrounding the CSFS,
- Staging poly tanks, pumps, generators, supplied air trailers and other miscellaneous equipment,
- Driving fence posts, ground rods, and equipment hold downs,
- Moving and setting up jersey barriers,
- Setting up exclusion zones (EZ) which for radiological purposes will be the soil contamination areas (SCA), contamination reduction zones (CRZ) which will also contain the radiological buffer area (RBA) including the stepoff pad, project support zones, and general site control zones, and
- Mobilizing heavy equipment

Activities required to support the culvert installation, minor road improvements, and establishment of equipment infrastructure will include the following

- Operating heavy equipment and industrial fork trucks,
- Wearing appropriate personal protective equipment,
- Monitoring personnel for noise and heat/cold stress exposure,
- Monitoring wind speed,
- Controlling traffic when conducting minor road improvements along the edge of Central Avenue,
- Spraying water to minimize dust,
- Spraying ConCover® to stabilize the berm on the northeast side of the Mound Site, and
- Securing the work area at the end of each day

4.2 TASK 2 - INSTALLING STORMWATER DITCH AND REMOVING TOPSOIL AT CSFS

This task involves the installation of a plastic lined stormwater collection ditch and grading the topsoil at the CSFS in preparation for stockpiling contaminated soil from the Mound Site excavation Activities required to complete this task include the following

- Working under the stipulations of a Radiological Work Permit
- Operating heavy equipment,
- Wearing appropriate personal protective equipment,
- Performing CSFS EZ/SCA work area high volume radiological air monitoring,
- Performing support zone perimeter low volume radiological air monitoring,
- Performing radiological surveys on soils, and equipment,

- Frisking personnel for radiological purposes,
- Monitoring personnel for noise and heat/cold stress exposure,
- Monitoring wind speed,
- Spraying water to minimize dust,
- Decontaminating equipment,
- Performing personnel contamination control,
- Managing waste such as disposable personal protective equipment, and
- Securing the CSFS at the end of each day

4 3 TASK 3 - EXCAVATION OF CONTAMINATED SOIL

This task includes excavating approximately 400 to 1,000 cubic yards of contaminated soil A track mounted excavator (trackhoe) will be used to excavate the soil The contaminated soil will be placed in a forty ton articulated dump truck and transported to the CSFS Excavation activities will continue until excavation verification samples indicate that soils equal to or above the VOC cleanup target levels described in the PAM have been removed or the limiting conditions in the PAM have been encountered Activities required to accomplish the excavation of contaminated soil include the following

- Working under the stipulations of a Radiological Work Permit
- Operating the excavator,
- Wearing appropriate personal protective equipment,
- Performing excavation EZ/SCA perimeter high volume radiological air monitoring,
- Performing support zone perimeter low volume radiological air monitoring,
- Performing radiological surveys on soils, and equipment,
- Frisking personnel for radiological purposes,
- Conducting real-time air monitoring for VOCs and particulates,
- Conducting personal integrated air sampling for VOCs,
- Monitoring personnel for noise and heat/cold stress exposure,
- Monitoring wind speed,
- Spraying water to minimize dust,
- Pumping incidental stormwater from the excavation,
- Decontaminating equipment,
- Performing personnel contamination control,
- Managing waste such as disposable personal protective equipment, and
- Securing the excavation at the end of each day and during the treatment of contaminated soil

4 4 TASK 4 - TRANSPORT AND DUMPING OF CONTAMINATED SOIL

This task involves the use of a forty ton articulated dump truck to transport contaminated soil from the excavation to the CSFS To ensure safe movement of the truck, a Traffic Management Plan has been

prepared and resides in the Field Implementation Plan (FIP) In addition, the Site Safety Officer will escort every load of soil to ensure prompt response to any spills and to monitor for VOCs and particulates The forty ton articulated truck will be dumped in a manner which limits tire contact with contaminated soil Activities required to accomplish the transport and dumping of contaminated soil include the following

- Working under the stipulations of a Radiological Work Permit
- Operating the forty ton dump truck,
- Posting the dump truck as an SCA
- Wearing appropriate personal protective equipment,
- Closing the northernmost lane of the East Access Road,
- Positioning flagpersons on the two north-south roads to control traffic during truck movement,
- Spraying water when loading and prior to transport to minimize dust,
- Escorting the dump truck to ensure prompt response should a spill or dust generation occur,
- Performing CSFS EZ/SCA perimeter high volume radiological air monitoring,
- Performing support zone perimeter low volume radiological air monitoring,
- Performing radiological surveys on soils, and equipment,
- Frisking personnel for radiological purposes,
- Conducting real time air monitoring for VOCs and particulates,
- Conducting personal integrated air sampling for VOCs,
- Monitoring personnel for noise and heat/cold stress exposure,
- Spraying water when dumping soil to minimize dust,
- Decontaminating equipment,
- Performing personnel contamination control, and
- Managing waste such as disposable personal protective equipment

4.5 TASK 5 - MANAGEMENT OF CONTAMINATED SOIL FEED STOCKPILE

This task involves the management of the contaminated soil at the CSFS To facilitate efficient loading of the CSFS, a front end loader will be utilized Management of the CSFS also includes the pumping of incidental water from the stormwater collection system and covering the CSFS with a water-resistant tarpaulin at the end of the shift Activities required to accomplish the loading and management of the CSFS include the following

- Working under the stipulations of a Radiological Work Permit
- Operating the front end loader,
- Wearing appropriate personal protective equipment,
- Performing CSFS EZ/SCA perimeter high volume radiological air monitoring,
- Performing support zone perimeter low volume radiological air monitoring,
- Performing radiological surveys on soils, and equipment,

- Frisking personnel for radiological purposes,
- Conducting real-time air monitoring for VOCs and particulates,
- Conducting personal integrated air sampling for VOCs,
- Monitoring personnel for noise and heat/cold stress exposure,
- Spraying water when dumping and moving soil to minimize dust,
- Covering the CSFS with a water-resistant tarpaulin,
- Pumping incidental water from the stormwater collection system,
- Decontaminating equipment,
- Performing personnel contamination control,
- Managing waste such as disposable personal protective equipment, and
- Securing the CSFS at the end of each day

4.6 TASK 6 - EXCAVATION VERIFICATION SAMPLING

Excavation verification samples will be used to establish the post-action condition of the soils at the boundaries of the excavation Samples will be collected and analyzed for the VOC contaminants of concern as described in the Sampling and Analysis Plan Since the existing characterization data indicates that metals and semi-volatile contaminants are below cleanup levels in the trenches, no further soil sampling will be done for those constituents Activities required to accomplish this sampling include the following

- Working under the stipulations of a Radiological Work Permit
- Operating the excavator,
- Wearing appropriate personal protective equipment,
- Performing excavation EZ/SCA perimeter high volume radiological air monitoring,
- Performing support zone perimeter low volume radiological air monitoring,
- Performing radiological surveys on soils, and equipment,
- Frisking personnel for radiological purposes,
- Conducting real-time air monitoring for VOCs, and particulates,
- Conducting personal integrated air sampling for VOCs,
- Monitoring personnel for noise and heat/cold stress exposure,
- Decontaminating the excavator bucket,
- Sampling from the excavator bucket,
- Decontaminating sampling equipment,
- Performing personnel contamination control,
- Managing waste such as disposable personal protective equipment and sampling equipment, and
- Packaging the samples for shipment,

4.7 TASK 7 - DECONTAMINATION OF EQUIPMENT

All materials and equipment in contact with soils will require decontamination prior to release from the EZ/SCA at either the excavation or CSFS and prior to free release from RFETS to off site locations Decontamination methods will vary depending on the location and extent of contamination and effectiveness will be determined by visual inspection, radiological surveys and volatile organic compound monitoring At the discretion of the Project Manager, items may be decontaminated in the field or transferred to the Main Decontamination Facility Activities required to decontaminate heavy equipment and materials include the following

- Working under the stipulations of a Radiological Work Permit
- Staging heavy equipment,
- Wearing appropriate personal protective equipment,
- Performing excavation or CSFS EZ/SCA perimeter high volume radiological air monitoring,
- Performing excavation or CSFS support zone perimeter low volume radiological air monitoring,
- Performing radiological surveys on equipment,
- Frisking personnel for radiological purposes,
- Conducting real-time air monitoring for VOCs and particulates,
- Conducting personal integrated air sampling for VOCs if necessary,
- Monitoring personnel for noise and heat stress exposure,
- Establishing a portable decontamination station with secondary containment,
- Transferring items to the Main Decontamination Facility,
- Spraying water at low or high pressures,
- Wiping or scrubbing,
- Performing personnel contamination control, and
- Managing waste such as disposable personal protective equipment and decontamination fluids

4.8 TASK 8 - SOIL TREATMENT

Soil will be treated using a low vacuum low temperature thermal desorption system (TDU) operated by a treatment subcontractor The TDU will be assembled and operated in the TDU area as shown in Figure 3 2 The TDU is a batch treatment system that is capable of desorbing contaminants under a non-oxidative atmosphere and low temperature such that the desorbed contaminants do not degrade and generate thermal or oxidative by-products The CSFS is located proximal to the TDU site allowing short staging time prior to treatment in the TDUs Operation of the TDU system will be addressed in an additional Health and Safety Plan which will be prepared by the treatment subcontractor and approved by the RMRS Project Manager, RMRS Radiological Coordinator, RMRS Health and Safety Supervisor, RMRS Radiological Safety Section Manager, and SSOC Radiological Engineering

4.9 TASK 9 - POST TREATMENT VERIFICATION SAMPLING

Post treatment verification samples will be taken by the treatment subcontractor to verify compliance with treatment standards Samples will be collected and analyzed for the VOC contaminants of concern as described in the SAP Since the existing characterization data indicates that metals and semi-volatile contaminants are below cleanup levels, no further soil sampling will be done for those constituents Post treatment verification sampling will also be addressed in the Health and Safety Plan prepared by the treatment subcontractor

4.10 TASK 10 - TRANSPORT AND BACKFILL OF TREATED SOIL

This task involves the loading of conventional dump trucks with front end loaders to transport soil from the treated soil stockpile to the excavation To ensure safe movement of the trucks, a Traffic Management Plan has been prepared and resides in the FIP In addition, the Site Safety Officer will escort every load of soil to ensure prompt response to any spills Activities required to accomplish the transport of treated soil include the following

- Working under the stipulations of a Radiological Work Permit
- Operating the front end loader and dump trucks,
- Posting the dump trucks as SCAs
- Wearing appropriate personal protective equipment,
- Performing excavation or CSFS EZ/SCA perimeter high volume radiological air monitoring,
- Performing excavation or CSFS support zone perimeter low volume radiological air monitoring,
- Performing radiological surveys on equipment,
- Frisking personnel for radiological purposes,
- Conducting real-time air monitoring for VOCs and particulates,
- Monitoring personnel for noise and heat stress exposure,
- Spraying water when loading and prior to transport to minimize dust,
- Escorting the dump truck to ensure prompt response should a spill or dust generation occur,
- Closing the northernmost lane of the East Access Road,
- Positioning flagpersons on the north-south road to control traffic during truck movement,
- Spraying water when dumping and moving soil to minimize dust, and
- Performing personnel contamination control

4.11 TASK 11 - DECONTAMINATION OF EQUIPMENT

This task will be identical to the previous decontamination task except that no VOC contaminated soil will be present and respiratory protection must comply with the RWP for any radiological concerns that may be present when decontaminating

Field Change No 4

Table 7.1
Task Specific
Personal Protective Equipment Summary

Task	Level	Body[1]	Foot	Head	Eye[2]	Hand	Respirator
Site Preparation	D	Work clothes	Steel toed safety shoes	Hard hat	Safety glasses with side shields	Heavy duty leather gloves	None required FF,APR when mixing ConCover®
Installing Stormwater Ditch and Grading Topsoil at the CSFS	Modified D	Anti-C Tyvek®	Steel toe safety shoes and shoe covers	Hard hat	Safety glasses with side shields	Inner surgeon and outer nitrile gloves or inner gloves and heavy duty leather work gloves (cotton liners optional)	None required
Excavation of Contaminated Soil and CSFS Hot Spot	B	Anti-C Tyvek®	Steel toe safety shoes and shoe covers	Hard hat	None	Inner surgeon and outer nitrile gloves (cotton liners optional)	Supplied air or SCBA
Transport of Contaminated Soil	B	Anti-C Tyvek®	Steel toe safety shoes and shoe covers	Hard hat	None	Inner surgeon and outer nitrile gloves (cotton liners optional)	Supplied air or SCBA
Management of CSFS	B	Anti-C Tyvek®	Steel toe safety shoes and shoe covers	Hard hat	None	Inner surgeon and outer nitrile gloves (cotton liners optional)	Supplied air or SCBA
Excavation/CSFS Verification Sampling	B	Anti-C Tyvek®	Steel toe safety shoes and shoe covers	Hard hat	None	Inner surgeon and outer nitrile gloves (cotton liners optional)	Supplied air or SCBA
Decontamination of Equipment[5]	B[3]	Anti-C Tyvek®	Steel toe safety shoes and shoe covers	Hard hat	None[4]	Inner surgeon and outer nitrile gloves (cotton liners optional)	Supplied air or SCBA
Transport and Backfill of Treated Soil	Modified D[3]	Anti-C Tyvek®	Steel toe safety shoes and shoe covers	Hard hat	Safety glasses with side shields	Inner surgeon and outer nitrile gloves (cotton liners optional)	None required
Decontamination of Equipment[5]	Modified D[3]	Anti-C Tyvek®	Steel toe safety shoes and shoe covers	Hard hat	Safety glasses with side shields	Inner surgeon and outer nitrile gloves (cotton liners optional)	None required
Site Reclamation	Modified D[3]	Anti-C Tyvek®	Steel toe safety shoes and shoe covers	Hard hat	Safety glasses with face shield	Inner surgeon and outer nitrile gloves or inner gloves and heavy duty leather work gloves (cotton liners optional)	None required

[1] If splash hazards exists and cannot be mitigated, polycoated Tyvek® will be worn
[2] No eye protection will be required when a full facepiece respirator is worn
[3] Work may be conducted without respiratory protection if continuous real time air monitoring indicates no volatile organic compounds at levels above background and the RWP does not require respirators for radiological purposes
[4] If no respiratory protection is required, safety glasses with side shields will be worn
[5] If high pressure water is used, 16" high, steel toed rubber boots will be worn If no respiratory protection is required and high pressure water is used, a hard hat mounted face shield will be worn in addition to the safety glasses

Field Change No 11

Field Change No 12

MOUND SITE SOURCE REMOVAL

CSFS HOT SPOT REMOVAL

Activity Hazard Analysis

5-7-97

Activity	Hazard	Preventative Measures
All site activities	General work hazards	All personnel will wear steel toed shoes, safety glasses with side shields, hard hats, reflective vests, and hearing protection as applicable in the support zone
	Heat stress	Heat stress monitoring will be conducted in regards to work load and PPE worn
	Cold stress	Cold stress monitoring will be conducted Proper clothing will be available to all personnel and administrative controls will be adhered to
	Noise	Noise monitoring will be conducted Where necessary personnel will wear hearing protection In addition, all personnel will participate in the RFETS Hearing Conservation Program if necessary
Traversing the site	Slip, trips, falls	Care will be taken when traversing the site especially when wearing PPE and carrying equipment All trip hazards will be immediately removed or marked when identified
Lifting equipment and materials	Back injury	Proper lifting techniques will be used and heavy equipment, where feasible, will be utilized to move heavy loads
Handling equipment and materials	Pinch points and sharp edges	Care will be taken when pinch points and sharp edges exist and heavy duty leather work gloves will be worn

Activity	Hazard	Preventative Measures
Using hand tools	Hand tools in unsafe operating condition	Hand tools will be inspected by the user prior to each use
	Improper use of hand tools	Hand tools will be utilized for their intended use and operated in accordance with HSP-12 10 Guards will be in place and no modifications will be made
	Electrical shock	Portable power tools will be plugged into a GFCI protected outlet and will be UL listed and double insulated Cords will be inspected by the user and protected from unnecessary damage Any tool whose cord shows signs of damage or deterioration will be immediately removed from service
Use of generators	Electrical shock	Extension cords will be intended for outdoor use, inspected by the user, and protected from unnecessary damage Any extension cords which show signs of damage or deterioration will be immediately removed from service
	Electrical shock	Cords will be plugged into a GFCI protected outlet and the generator will be properly grounded The GFCI will be tested by the user daily prior to the beginning of each shift
	Fire	At a minimum, a 10 lb ABC fire extinguisher will be located in the work area and next to the generator All refueling will be conducted at the beginning of the shift when the generators are cool
	Use of gasoline	Follow recommendations on MSDS (see Appendix C)

Activity	Hazard	Preventative Measures
Backhoe operation	Backhoe in poor operating condition	The backhoe will be inspected prior to entering RFETS The operator will inspect and document the backhoe prior to the beginning of each shift
	Improper operation of the backhoe	Operators will be properly trained in the use and limitations of the backhoe
	Ground personnel being struck with backhoe or falling loads	Ground personnel will wear orange vests, stay at least 20' away from the backhoe, and maintain line of sight with the operator
	Other equipment being struck with backhoe	Backhoe operations will be conducted in a deliberate safe manner A spotter will be required when backing the backhoe
Use of Level B respiratory protection	Physical fatigue	Medical approval will be required for personnel
	Improper face to facepiece seal	Respirator specific fit test approval will be required for personnel
	Improper inspection or use of respirator	Personnel will be trained in the inspection, use, and limitations of the specific respirator worn
	Unsecured airline bottles on backhoe	Airline bottles will be inspected by the user prior to and during each shift
Moving jersey barriers with the backhoe	Dropping or tipping the jersey barrier	The backhoe will <u>not</u> lift the barrier and personnel will stay back during the pushing or dragging of barrier Chains or cables will be inspected prior to use
Excavating contaminated soil	Skin exposure to volatile organic compounds	Personnel in the EZ/SCA will wear Level B PPE and limit contact with contaminated soil

Activity	Hazard	Preventative Measures
Excavating contaminated soil (cont)	Inhalation of volatile organic compounds	Personnel in the EZ/SCA will wear Level B respiratory protection CRZ/RBA and support zone work controls will be based on perimeter real-time VOC monitoring
	Skin exposure to radionuclides in soil	Personnel in the EZ/SCA will wear Level B PPE and limit contact with contaminated soil
	Inhalation of radionuclides	Personnel in the EZ/SCA will wear Level B respiratory protection CRZ/RBA and support zone work controls will be based on perimeter air monitoring
Obtaining FIDLER readings at the backhoe bucket	Ground personnel being struck with backhoe	Prior to the RCT approaching the bucket, the operator will set the bucket on the ground, disengage the hydraulic system, set the parking brake, and give a hand signal indicating that the RCT may approach
Moving drums of contaminated soil by hand	Dropping or tipping of drums Back injury	Proper drums moving techniques will be used by personnel Once at the stepoff pad, a fork truck with a drum grabber will be used
Using fork truck with drum grabber to move drums	Fork truck in poor operating condition	The operator will inspect and document the fork truck prior to the beginning of each shift
	Improper operation of fork truck	Operators will hold a current Fork Truck Operator Permit and all operations will be in accordance with HSP-9 06
	Ground personnel being struck with fork truck	Ground personnel will wear orange vests and maintain line of sight with the operator
	Other equipment being struck with fork truck	Fork truck operations will be conducted in a deliberate safe manner A spotter will be required when backing the fork truck

Activity	Hazard	Preventative Measures
Using fork truck with drum grabber to move drums (cont)	Injury resulting from unsecured loads	The drum grabber will be inspected for proper operation prior to use When moving drums, personnel will stay back a minimum of ten feet
Spraying water for dust control	Pump malfunction or hose rupture	Pumps and hoses will be inspected by the user prior to use The hoses will be protected from unnecessary damage

Approved:	**Signature**	**Date**
RMRS Project Manager-Wayne Sproles	WRS	5/7/97
RMRS H&S Supervisor-Peggy Schreckengast	Peggy Schreckengast	5-7-97
RMRS Radiological Coordinator-Jerry Anderson		5/7/97
SSOC Radiological Engineer-Scott Newsom	Scott A. Newsom	5/7/97

Field Change No 13

MOUND SITE SOURCE REMOVAL

SAMPLING THE CSFS

Activity Hazard Analysis

5-7-97

Activity	Hazard	Preventative Measures
All site activities	General work hazards	All personnel will wear steel toed shoes, safety glasses with side shields, hard hats, reflective vests, and hearing protection as applicable in the support zone
	Heat stress	Heat stress monitoring will be conducted in regards to work load and PPE worn
	Cold stress	Cold stress monitoring will be conducted Proper clothing will be available to all personnel and administrative controls will be adhered to
	Noise	Noise monitoring will be conducted Where necessary personnel will wear hearing protection In addition, all personnel will participate in the RFETS Hearing Conservation Program if necessary
Traversing the site and walking on the stockpile	Slip, trips, falls	Care will be taken when traversing the site and walking on the stockpile especially when wearing PPE and carrying equipment All trip hazards will be immediately removed or marked when identified
Lifting equipment and materials including the removal of the tapaulin	Back injury	Proper lifting techniques will be used and heavy equipment, where feasible, will be utilized to move heavy loads
Handling equipment and materials	Pinch points and sharp edges	Care will be taken when pinch points and sharp edges exist and heavy duty leather work gloves will be worn

Activity	Hazard	Preventative Measures
Using hand tools	Hand tools in unsafe operating condition	Hand tools will be inspected by the user prior to each use
	Improper use of hand tools	Hand tools will be utilized for their intended use and operated in accordance with HSP-12 10 Guards will be in place and no modifications will be made
	Electrical shock	Portable power tools will be plugged into a GFCI protected outlet and will be UL listed and double insulated Cords will be inspected by the user and protected from unnecessary damage Any tool whose cord shows signs of damage or deterioration will be immediately removed from service
Use of generators	Electrical shock	Extension cords will be intended for outdoor use, inspected by the user, and protected from unnecessary damage Any extension cords which show signs of damage or deterioration will be immediately removed from service
	Electrical shock	Cords will be plugged into a GFCI protected outlet and the generator will be properly grounded The GFCI will be tested by the user daily prior to the beginning of each shift
	Fire	At a minimum, a 10 lb ABC fire extinguisher will be located in the work area and next to the generator All refueling will be conducted at the beginning of the shift when the generators are cool
	Use of gasoline	Follow recommendations on MSDS (see Appendix C)
Use of Level B respiratory protection	Physical fatigue	Medical approval will be required for personnel

Activity	Hazard	Preventative Measures
Use of Level B respiratory protection (cont)	Improper face to facepiece seal	Respirator specific fit test approval will be required for personnel
	Improper inspection or use of respirator	Personnel will be trained in the inspection, use, and limitations of the specific respirator worn
Sampling contaminated soil	Skin exposure to volatile organic compounds	Personnel in the EZ/SCA will wear Level B PPE and limit contact with contaminated soil
	Inhalation of volatile organic compounds	Personnel in the EZ/SCA will wear Level B respiratory protection CRZ/RBA and support zone work controls will be based on perimeter real-time VOC monitoring
	Skin exposure to radionuclides in soil	Personnel in the EZ/SCA will wear Level B PPE and limit contact with contaminated soil
	Inhalation of radionuclides	Personnel in the EZ/SCA will wear Level B respiratory protection CRZ/RBA and support zone work controls will be based on perimeter air monitoring
Spraying water for dust control	Pump malfunction or hose rupture	Pumps and hoses will be inspected by the user prior to use The hoses will be protected from unnecessary damage

Approved:	**Signature**	**Date**
RMRS Project Manager-Wayne Sproles	WLS	5/7/97
RMRS H&S Supervisor-Peggy Schreckengast	Peggy Schreckengast	5-7-97
RMRS Radiological Coordinator-Jerry Anderson		5/7/97
SSOC Radiological Engineer-Scott Newsom	Scott A. Newsom	5/7/97