

Short Form Health and Safety Plan

General Information

This task-specific health and safety plan (HASP) provides safety-related information and requirements specific to the task and work location(s) described. General requirements contained in the CDM Health and Safety Program along with those described in this task-specific HASP will be implemented except where noted. Significant changes to this HASP shall be documented or resubmittal of a revised task-specific HASP.

Project Name: South Platte Data Collection Program Client: Colorado Water Conservation Board

Project No.: 0711-37580-33.wp Date: April 9, 2003

Performing Organization(s): Camp Dresser & McKee Inc.

Planned Duration of Field Activities: May 1, 2003 – September 30, 2005

Project Location : Along the South Platte River in eastern Colorado. The locations of each well will be determined at a later date.

Key Personnel

Project Manager: Gordon McCurry Telephone: (303)-298-1311

Project Health and Safety Contact: Todd Burgesser Telephone: (303)-298-1311

<u>Project Field Personnel</u>	<u>Responsibilities</u>	<u>Telephone</u>
<u>Andy Horn</u>	<u>Task Manager</u>	<u>(303)298-1311</u>
<u>Donavan Paschal</u>	<u>Team Member</u>	<u>(303)298-1311</u>

Project Site Description

The Field Program will consist of drilling and installation of up to 15 alluvial aquifer and 1 bedrock monitoring wells to be constructed during Phase 1 of the South Platte Decision Support System (SPDSS) under Tasks 35. All boreholes will be drilled to bedrock using hollow-stem auger equipment, with an estimated maximum depth of 80 feet, and an average depth of 60 feet. This Phase 1 program will also include the installation, geophysical logging, testing and monitoring of one well up to 400 feet deep, completed in one of the Denver Basin Region bedrock aquifers. The Consultant's on-site representative will be present for all drilling activities and will maintain a log of all significant well construction and testing activities according to the Field Data Collection Protocol. A single-borehole aquifer performance test will be conducted after each well is completed and developed.

CDM
ACTIVITY HAZARD ANALYSIS
#3

DRILLING SAFETY

Activity	Potential Hazard(s)	Required Actions or Controls
Drilling	Environmental protection	<ul style="list-style-type: none"> At a minimum, plastic will be placed over the area to be drilled. If the contaminants warrant, plastic will be placed under the rig as well as a large area surrounding the rig. If fuel or oil leaks on the plastic sheeting, absorbent pads will be used.
	Housekeeping - slips/trips/falls	<ul style="list-style-type: none"> All sites will be kept clean and free of trash and other debris. All trash will be properly containerized and removed or staged daily.
	Equipment inspection	<ul style="list-style-type: none"> Prior to use, rigs will need to receive health physics approval. All rigs will be scanned with appropriate documentation. Rigs will be inspected daily and documented by the equipment operator.
Drill rigs		<ul style="list-style-type: none"> The mast and cables must be able to support all equipment and drill rods. Wire cables must be maintained in good condition, free of kinks or broken strands. All rotating shafts, pulleys or chains must be covered with protective guards. Rigs must be maintained in good working order. All drill rigs must be equipped with an emergency kill switch which is readily accessible to personnel at the rear of the rig. All personnel on the site will know the location of the kill switch and how to use it.

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Activity	Potential Hazard(s)	Required Actions or Controls
Decontamination	Water trucks	<ul style="list-style-type: none"> • All water tanks must be securely fastened to the truck frame. • Water tanks should be constructed of materials with adequate side strength, baffled to prevent the sloshing of water from side to side, and must have lids with gaskets to prevent water loss.
	Steam cleaners	<ul style="list-style-type: none"> • Skid mounted steam cleaners will have protective guarding on all rotating shafts, belts, and pulleys.
	- hand injury	<ul style="list-style-type: none"> • Turn off steam cleaner and allow to cool before refueling.
	- fire	<ul style="list-style-type: none"> • If steam cleaners are being powered by a generator, a Ground-Fault Circuit Interrupter (GFCI) will be required.
	- electrical	<ul style="list-style-type: none"> • Nitrile gloves will be worn while operating the steam cleaner. • Keep hands clear of the water spray.
	Fire	<ul style="list-style-type: none"> • Generators will be turned off while being refueled.
	Electric shock	<ul style="list-style-type: none"> • Smoking is prohibited during refueling operations. • GFCIs will be used.
	Unauthorized operation	<ul style="list-style-type: none"> • Only trained and authorized personnel will operate and/or assist in drilling operations. • Operators must comply with all applicable state certifications.
	Head injury	<ul style="list-style-type: none"> • Hard hats are required during all operation.

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Activity	Potential Hazard(s)	Required Actions or Controls
	Eye injury	<ul style="list-style-type: none"> Safety glasses will be required during drilling operations.
	Foot injury	<ul style="list-style-type: none"> Leather steel-toed boots will be required.
	Hearing loss	<ul style="list-style-type: none"> Hearing protection will be required during hammering.
	Hand injury	<ul style="list-style-type: none"> Gloves will be worn during routine drilling activities. Keep hands away from rotating augers, the hammer, and all other moving parts.
	Slips/trips	<ul style="list-style-type: none"> If mud pans are used, the pan will be cleaned out as often at possible to avoid slippery conditions.
	Crushing injuries	<ul style="list-style-type: none"> Drill rods and drill bit stabilizer will be properly transported by either a rack, the rig, or utility trailer. If transported on a trailer, the rods or stabilizers will be held securely in place. All vehicles and wheeled equipment will have chocks placed under the wheels to prevent rolling.
	Rig/equipment damage	<ul style="list-style-type: none"> Wire cables will be inspected daily. Cables with broken strands, weak spots, kinking, or mashed areas will be replaced prior to use.
	Fire prevention	<ul style="list-style-type: none"> Rigs will contain at least one ABC type fire extinguisher. Fire extinguishers will be fully charged and inspected weekly. Fuels will be stored in appropriate containers.

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Activity	Potential Hazard(s)	Required Actions or Controls
	Severe weather	<ul style="list-style-type: none"> • Drilling will stop when rain interferes with the safety of the operators. • Drilling activities will stop during lightning. Operators, crew, and other support personnel will move out of the exclusion zone and take shelter in other vehicles.
	Cathead hazards	<ul style="list-style-type: none"> • The operator must be trained and experienced in the use of the cathead. • The rope used must be in good condition. • The operator shall not wear loose clothing.
	Power lines/underground utilities	<ul style="list-style-type: none"> • Ensure that there are not any power lines or underground utilities prior to drilling activities. • If work is near an overhead line, care will be taken to ensure when raising the mast. • While working near power lines, drill rods will not be leaned against the mast. • If the drill bit encounters anything hard, drilling will stop and the Geologist will be notified.

Comments and Additions

Emergency Information

Police 911 _____

Fire : 911 _____

Ambulance: 911 _____

Nearest Medical Facility: To be determined based on the locations of the individual wells. Before proceeding to the field, this information must be completed for each site.

Address: To be determined based on the locations of the individual wells. Before proceeding to the field, this information must be completed for each site.

Telephone: To be determined based on the locations of the individual wells. Before proceeding to the field, this information must be completed for each site.

Driving Directions: (Attach Map) To be determined based on the locations of the individual wells. Before proceeding to the field, this information must be completed for each site.

Reviews

Project Manager _____ Date: _____

Health and Safety
Coordinator: _____ Date: _____Health and Safety
Manager: _____ Date: _____

Acknowledgment Signatures

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