

ROCKY FLATS PLANT
EMD OPERATING
PROCEDURES MANUAL
VOLUME III: GEOTECHNICAL

Manual No.: 5-21000-OPS-GT
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Organization: Environmental Management

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PER R.B. HOFFMAN, CLASSIFICATION OFFICE
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ADMIN RECORD

A-SW-001368

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94-DMR-000276	Section GT.07 and form Modifications	2	02/28/94
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•94-DMR-000431	Calibration Occurrence Clarification	2	04/11/94
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93-DMR-000962	Form GT.11A Modification	2	01/10/94
GT.15	Geophysical Borehole Logging	2	05/12/92
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GT.18	Surface Geophysical Surveys	2	05/12/92
DCN 93.01	5.4 Field Procedure Revisions	2	EXPIRED
DCN 93.02	5.5 Time Domain Electromagnetic Metal Detection	2	11/22/93
GT.19	Field Gas Chromatographs	2	05/12/92
GT.20	Procedures for Soil Interstitial Water Sampling and Sampler Installation	2	05/12/92
94-DMR-000297	Section GT.20 and form Modifications	2	02/28/94
GT.21	Cone Penetrometer Testing	1	05/12/92
DCN 93.01	CPT Rods	1	EXPIRED
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GT.24	Approval Process for Construction Activities on or Near Individual Hazardous Substance Sites (IHSSs)	0	05/12/92

ROTARY DRILLING AND ROCK CORING

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2.0 PURPOSE AND SCOPE

94-DMR-000935
This standard operating procedure (SOP) describes procedures that will be used at the Rocky Flats Plant (RFP) for rotary drilling and rock coring, using air and water as drilling media. These procedures also are applicable for the use of sonic drilling methods where little or no water, air, or mud is required for circulation during penetration. It addresses equipment, field procedures, decontamination, and documentation that will be used for rotary drilling, sonic drilling, and rock coring, and describes documentation of these procedures in order to attain acceptable standards of accuracy, precision, comparability, representativeness, and completeness.

94-DMR-000419
If the end-purpose of the drilling is to install and complete a monitoring well, not a piezometer, the Project Manager should refer to SOP GT.6 and other contained related SOPs for further instructions. These procedures specify pre-installation approval for monitoring wells from Environmental Sciences and Engineering, Geosciences Division. Advanced notification of monitoring well installation is necessary for the state of Colorado, Division of Water Resources. Prior to invasive activities, SOP GT.24 requirements should be reviewed and followed to acquire soil disturbance approval from RFP Construction Management.

3.0 PERSONNEL QUALIFICATIONS

94-DMR-000935
Personnel overseeing rotary drilling, sonic drilling, and rock coring will be geologists, geotechnical engineers, or field technicians with an appropriate amount of applicable field experience or on-the-job training under the supervision of another qualified person.

ROTARY DRILLING AND ROCK CORING

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- SOP GT.10, Borehole Clearing
- SOP FO.14, Field Data Management
- SOP GT.24, Approval Process for Construction Activities on or Near Individual Hazardous Substance Sites (IHSSs)

5.0 EQUIPMENT AND PROCEDURES

5.1 GENERAL

Rotary drilling and rock coring methods that use air or water as the drilling media are common techniques employed to obtain stratigraphic, lithologic, hydrogeologic, geotechnical, and environmental data, as well as a means for monitoring well installation. In general, hollow-stem continuous-flight augers will be the preferred technique for drilling boreholes to collect environmental samples of soil and rock (see SOP GT.2, Drilling and Sampling Using Hollow-Stem Auger Techniques). The use of air or water can alter analytical chemistry or physical property test results by altering sample moisture, by volatilizing contaminants (in the case of air), or by washing

94-DMR-000419 93-DMR-000957