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INSPECTION AND CERTIFICATION PROGRAM FOR CERCLA REMEDIAL ACTIVITIES AT URAVAN, COLORADO

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PREFACE

This Inspection and Certification Program is specifically designed for use by the State of Colorado in tracking, evaluating and confirming remedial activities at Uravan, Colorado. However, the basic concepts developed in this report can be used to develop similar programs for other sites that are cleaned up under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): Resource, Conservation, and Recovery Act (RCRA); and the Uranium Mill Tailings Radiation Control Act (UMTRCA).

The end goal of the Inspection and Certification Program is to certify that all cleanup activities have been conducted properly and that these actions meet the applicable, relevant and appropriate standards. To accomplish this goal, a detailed inspection system and a specific inspection strategy must be developed at the onset of a remedial project to assure proper tracking, monitoring, and documentation of the construction and environmental monitoring activities at the site. In an era of limited resources, it is imperative that an effective, streamlined and manageable system be designed and implemented. For these reasons, a computer-based data management system coupled with strategic planning of inspection activities were used in establishing the Inspection and Certification Program. The Inspection and Certification Program developed herein will assist federal and state agencies and private industry in developing similar programs for other remedial sites.

1.0 INTRODUCTION

The Uravan Remedial Action Plan, developed pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"), sets forth in Addendum B the outline of the State of Colorado's Inspection and Certification (IC) Program. The IC Program is an external inspection and auditing system conducted by the State to assure that the requirements of the Remedial Action Plan and Consent Decree are implemented and conducted properly. Ultimately, the IC Program is intended to provide sufficient inspections and documentation so that the Uravan site can be certified by the State, delisted from the EPA's National Priority List, and transferred to the Federal government for long-term surveillance.

Addendum B sets forth the basic goals of the IC Program and requires that the State review and approve specific documents and inspect records and work activities at Uravan. This report is intended to present the basic framework for the IC Program and to provide a detailed inspection and tracking system for the State's oversight activities. Figure 1 shows the general framework of the IC Program. This program is divided into two independent but interrelated functions: 1) the Construction Oversight Plan and 2) the Monitoring Oversight Plan. In general, these plans, described in detail in sections 2.0 and 3.0, track and document the review and approval of specific documents and schedule requirements of the RAP and describe specific inspection procedures for construction activities and monitoring programs at Uravan.

The IC Program incorporates the basic approach and methodology developed by Umetco and their consultants for the Uravan Project. Umetco's general approach, shown on Figure 2, is to produce a series of documents over the 15 year life of the project to assure an accurate record of the remedial activities. The State's IC Program incorporated, where possible, the basic nomenclature of Umetco's file system so that document cross-checking and verification can be efficiently conducted in the future. This approach will minimize errors and reduce duplication of documents.

The IC Program will be placed on computer-based systems in order to provide construction tracking, data base management, and data analysis operations. These systems will allow easy access to, as well as efficient storage, display, and retrieval of information.

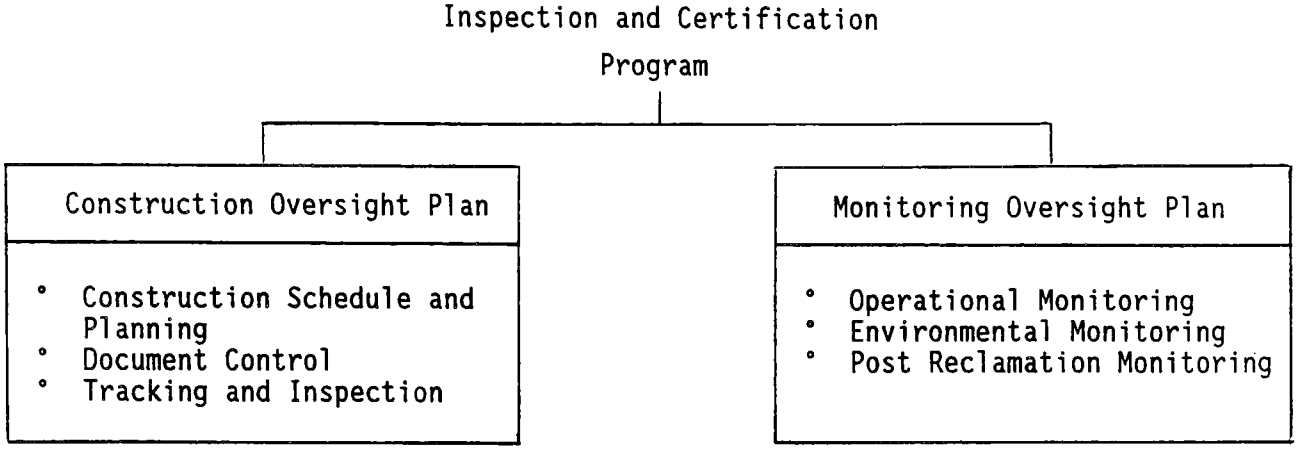

Figure 1. General framework for the Inspection and Certification Program, Uravan remedial activities.

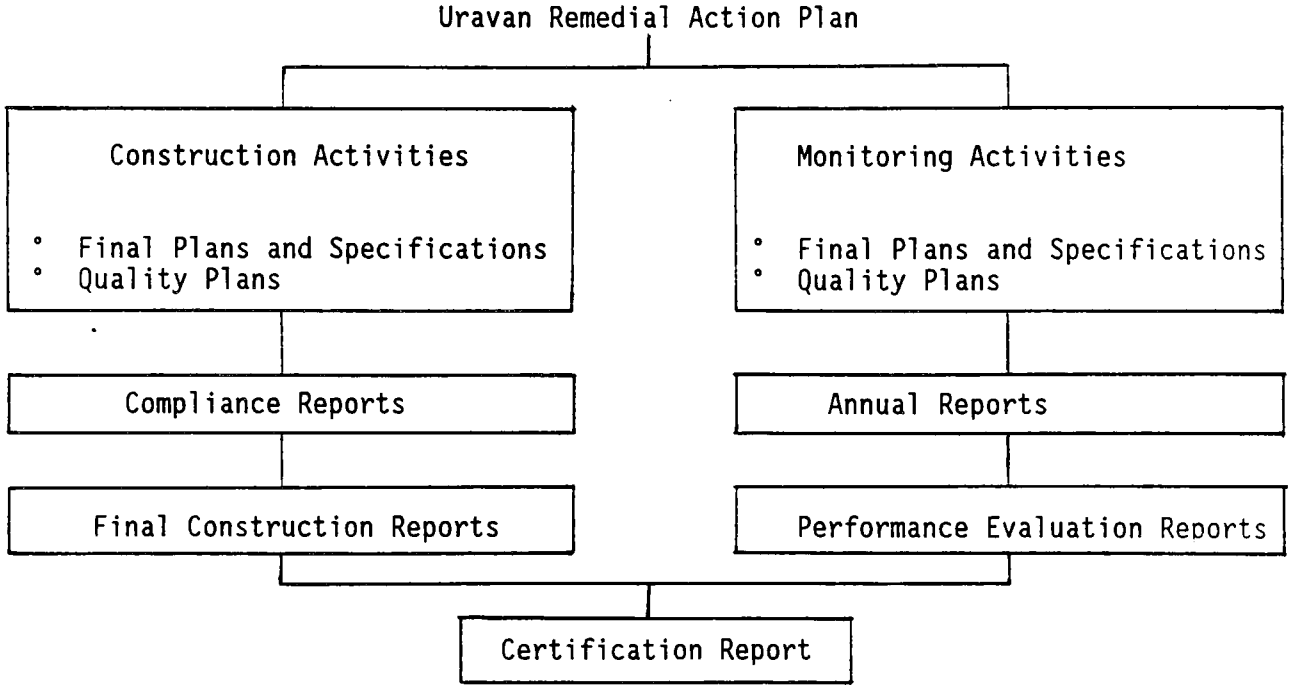

Figure 2. General document flow Inspection and Certification Program, Uravan remedial activities.

2.0 CONSTRUCTION OVERSIGHT PLAN

The Construction Oversight Plan provides a computer-based system by which construction activities at Uravan can be inspected and documented in a logical, organized manner. This plan is divided into three activities 1) Construction Schedule and Planning System, 2) Document Control Log, and 3) Construction Inspection and Tracking System. Each of these activities are discussed in the following sections.

2.1 Construction Schedule and Planning System (CONSCH)

The objectives of the Construction Schedule and Planning System are to track construction dates required in the RAP, to verify that these dates have been met, and to assist in the planning of the State's oversight activities. To meet these objectives, a Construction Schedule Control Log is presented in Table 1 and a typical Project Construction Schedule is shown on Table 2. The Construction Schedule Control Log (Table 1) lists those dates required in the RAP for the Initiation or Completion of a specific construction activity. These activities are listed according to the project area involved in a specific remedial activity. The typical Project Construction Schedule (Table 2) is for the 1988-1989 construction period and is intended to aid the On-Site Coordinator (OSC) in his/her yearly planning. Umetco will likely produce these schedules on a yearly basis and they should be requested by the OSC. Dates on this document must be considered approximations only and are not "enforceable" under the terms of the Consent Decree. However, the OSC can use this detailed scheduling for planning purposes and to keep track of work progress so that the deadline requirements in the RAP can be achieved.

The Construction Schedule Control Log and Project Construction Schedule are designed to be input on a computer word processing program. If the OSC desires, these schedules may be placed on a construction management program such as Super Project Plus or Micro Planner. These programs can be used to verify the construction management activities of Umetco, to determine if critical milestones exist within a given construction season, and to aid Umetco in the identification of potential problems.

Table 1. Construction schedule control log remedial activities, Uravan Project.

CONSTRUCTION ACTIVITY	INITIATION DATE		COMPLETION DATE	
	Required	Actual	Required	Actual
400 ATKINSON CREEK CRYSTAL DISPOSAL AREA	6-30-92		12-31-92	
Remove Contaminated Materials	None		12-31-93	
401 CLUB RANCH PONDS (CRP)				
Cease Discharge to CRP's	None		11-01-87	
Remove CRP Liquids	None		12-31-88	
Remove Contaminated Materials	6-30-89		12-31-91	
Lining of the CRP's	None		12-31-91	
Remove New Pond Liners	None		None	
Final Reclamation	None		None*	
402 RIVER POND AREA				
Cease Discharge to River Ponds	None		4-13-87	
Remove Liquids from Ponds	12-31-87		Annual	
Remove Contaminated Materials	6-30-88		12-31-90	
Final Reclamation	None		12-31-91	
404 TAILINGS PILES				
Dewater Tailings Piles	9-30-88		None	
Side Slope Cover	4-30-88		12-31-89	
Top Cover - Clay and Random Fill	None		12-31-96	
Top Cover - Riprap	None		None	
Diversion Channels	None		12-31-96	
406 CLUB MESA AREA				
Remove Contaminated Materials	6-30-93		12-31-94	
Install Runoff Control Structures	None		6-30-93	
Remove Liquids from Storage Ponds	None		Annual	
Final Reclamation	None		12-31-95	

* Based on results of groundwater cleanup.

Table 1 (Continued)

CONSTRUCTION ACTIVITY	INITIATION DATE		COMPLETION DATE	
	Required	Actual	Required	Actual
413 MILL AREA				
Removal of Heap Leach Site	None		12-31-88	
Removal of Barrels	None		12-31-87	
Removal of Bone Yard Material	None		12-31-88	
Final Reclamation	None		None	
418 TOWN AND ADJACENT AREAS				
Cleanup of Atkinson Creek Stream Bed	None		12-31-92	
Cleanup of Hieroglyphic Canyon	None		12-31-94	
Cleanup of Town	None		12-31-94	
Investigate Town Dump	6-30-87		None	
Submit Town Dump Cleanup Plan	None		None	
Remove Remnant Tailings from Town	None		12-31-89	
Install Sediment Control Barriers	None		12-31-87	
423 BURBANK QUARRY				
Quarry Development	4-30-88		None	
Placement of Raffinate Crystals	6-30-89		12-31-94	
Placement of Final Cover	None		12-31-00	
Construction of Diversion Ditches	9-30-88		12-31-89	
424 UPPER CLUB MESA BORROW AREA				
Borrow Source Development	None		None	
Final Reclamation	None		None	
425 VALLEY BORROW AREA				
Borrow Source Development	None		None	
Final Reclamation	None		None	
426 HILLSIDE SEEPAGE AND TAILINGS LIQUIDS				
Construction of Improvements to Hillside Collection System	None		12-31-88	

Table 1 (Continued)

CONSTRUCTION ACTIVITY	INITIATION DATE		COMPLETION DATE	
	Required	Actual	Required	Actual
428 NEW EVAPORATION PONDS				
Construction of New Evaporation Ponds	None		11-01-87	
429 PONDED LIQUIDS AND SURFACE RUNOFF				
Construction of Surface Runoff Collection System	None		7-31-87	

Table 2. 1988-1989 project construction schedule, Uravan Project.

PROJECT DESCRIPTION	ESTIMATED PROJECT CONSTRUCTION SCHEDULE* EARLY START	EARLY FINISH	LATE START	LATE FINISH	DURATION WEEKS
Obtain Permits-Valley Borrow	11-02-87	12-28-87	11-06-87	1-04-88	8.0
Permits-Burbank & Suprise	11-02-87	2-02-88	11-27-87	2-29-88	13.0
Const. Hillside Seepage & Collection Facilities	1-04-88	12-30-88	1-04-88	12-30-88	52.0
Burbank Pit-Mobilization & Site Prep	2-03-88	3-29-88	5-09-88	7-01-88	8.0
Site Prep-Valley Borrow Area	3-01-88	3-28-88	3-01-88	3-28-88	4.0
Suprise Pit-Stripping & Site Prep	3-01-88	4-11-88	3-1-88	4-11-88	6.0
Complete Const. CRP-8	3-29-88	6-20-88	3-29-88	6-20-88	12.0
Excavate Materials, Random Fill From Burbank	3-30-88	8-15-89	8-12-88	12-28-89	72.0
Borrow Clay For Tailings Sides From Surprise Claim	4-12-88	5-22-89	4-12-88	5-22-89	58.0
Cover Tailings Piles Sides	4-12-88	6-05-89	11-04-88	12-28-89	60.0
Construct Wheel Washes	7-01-88	9-15-88	7-15-88	9-29-88	11.0
Remove River Ponds	9-30-88	12-21-89	10-07-88	12-28-89	64.0
Dewater Tailings	9-30-88	1-04-90	9-30-88	1-04-90	66.0
Install Burbank Drainage Control	6-01-89	12-27-89	6-02-89	12-28-89	30.0
Install Monitoring	6-30-89	12-28-89	6-30-89	12-28-89	26.0
Complete Removal Of Remnant Tailings	6-30-89	12-28-89	6-30-89	12-28-89	26.0
Start Removal Of Crystals (10% Complete by 12-31-89)	10-02-89	12-22-89	10-06-89	12-31-89	12.0

* A construction schedule may be prepared annually by the OSC to aide in construction inspections. This construction schedule is not required by the RAP or Consent Decree; however, it is recommended to assist the OSC in performing detailed project inspections.

2.2 Document Control Log (DOCLOG)

The Document Control Log (Table 3) is intended to provide a record of all major project documents generated during the course of remedial activities at Uravan. This log contains a description of the principal documents for each construction area at Uravan. These principal documents include Final Plans and Specifications, the Quality Plan, Final Construction Reports, Design Changes, and a Performance Evaluation Report. For each of these documents, a record of the document number (DOCNUM), required submittal date (RAPDATE), actual date submitted (SUBMITTED), date approved (APPROVED), and approved by (BY) computer fields have been designated for each document for input on the computer program dBase III Plus. These fields accept either dates or characters to describe the document name and appropriate dates. Additionally, a memo field is also included to record tracking document modifications (DOCMOD). The memo field in dBase III Plus allows entry of text into a data base field. Thus, any changes or modifications to the documents or to dates for scheduled activities can be recorded and explained. It is intended that these fields be used by the OSC to track and document so that an accurate up-to-date list of major document approvals is recorded. Status reports can be easily obtained from the file as a paper printout.

Table 3. Document control log, Uravan Project.

DOCUMENT (DOC)	DOCUMENT NUMBERS (DOCNUM)	REQUIRED SUBMITTAL DATE (RAPDATE)	ACTUAL DATE SUBMITTED (SUBMITTED)	DATE APPROVED (APPROVED)	APPROVED BY (BY)	MEMO FIELD DOCUMENT MODIFICATIONS (DOCMOD)
400 ATKINSON CREEK AREA						
400.0 Final Plans	S-400-1	06/12/87	06/09/87	/ /		
400.1 Quality Plan	QP-400-1	06/12/87	06/09/87	/ /		
400.2 Final Constr Rept		/ /	/ /	/ /		
400.4 Design Changes		/ /	/ /	/ /		
400.9 Performance Eval	PE-400-1	/ /	/ /	/ /		
401 CLUB RANCH PONDS						
401.0 Final Plans	S-401-1	04/13/87	04/03/87	08/11/87	DHS	
401.1 Quality Plan	QP-401-1	04/13/87	04/03/87	08/11/87	DHS	
401.2 Final Constr Rept		/ /	/ /	/ /		
401.4 Design Changes		/ /	/ /	/ /		
401.13 Performance Eval	PE-401-1	/ /	/ /	/ /		
402 RIVER PONDS AREA						
402.0 Final Plans	S-402-1	06/12/87	06/09/87	/ /		
402.1 Quality Plan	QP-402-1	06/12/87	06/09/87	/ /		
402.2 Final Constr Rept		/ /	/ /	/ /		
402.4 Design Changes		/ /	/ /	/ /		
402.7 Performance Eval	PE-402-1	/ /	/ /	/ /		
404 TAILINGS PONDS						
404.0 Final Plans	S-404-1	06/12/87	06/12/87	/ /		
404.1 Quality Plan	QP-404-1	06/12/87	06/12/87	/ /		
404.2 Final Constr Rept		/ /	/ /	/ /		
404.11 Performance Eval	PE-404-1	/ /	/ /	/ /		
406 CLUB MESA AREA						
406.0 Final Plans	S-406-1	06/12/87	06/09/87	/ /		
406.1 Quality Plan	QP-406-1	06/12/87	06/09/87	/ /		
406.2 Final Constr Rept		/ /	/ /	/ /		
406.4 Design Changes		/ /	/ /	/ /		
406.9 Performance Eval	PE-406-1	/ /	/ /	/ /		

Table 3 (Continued)

DOCUMENT (DOC)	DOCUMENT NUMBERS (DOCNUM)	REQUIRED SUBMITTAL DATE (RAPDATE)	ACTUAL DATE SUBMITTED (SUBMITTED)	DATE APPROVED (APPROVED)	APPROVED BY (BY)	MEMO FIELD DOCUMENT MODIFICATIONS (DOCMOD)
413 MILL AREA						
413.0 Final Plans	S-413-1	06/12-87	06/09/87	/ /		
413.1 Quality Plan	QP-413-1	06/12/87	06/09/87	/ /		
413.2 Final Constr Rept		/ /	/ /	/ /		
413.4 Design Changes		/ /	/ /	/ /		
413.12 Performance Eval	PE-413-1	/ /	/ /	/ /		
418 TOWN & ADJACENT AREA						
418.0 Final Plans	S-418-1	06/12/87	06/12/87	/ /		
418.1 Quality Plan	QP-418-1	06/12/87	06/12/87	/ /		
418.2 Final Constr Rept		/ /	/ /	/ /		
418.4 Design Changes		/ /	/ /	/ /		
418.12 Performance Eval	PE-418-1	/ /	/ /	/ /		
423 BURBANK QUARRY						
423.0 Final Plans	S-423-1	06/12/87	06/12/87	/ /		
423.1 Quality Plan	QP-423-1	06/12/87	06/12/87	/ /		
423.2 Final Constr Rept		/ /	/ /	/ /		
423.4 Design Changes		/ /	/ /	/ /		
423.12 Performance Eval	PE-423-1	/ /	/ /	/ /		
424 CLUB MESA BORROW AREA						
424.0 Final Plans	S-424-1	06/12/87	06/12/87	/ /		
424.1 Quality Plan	QP-424-1	06/12/87	06/12/87	/ /		
424.2 Final Constr Rept		/ /	/ /	/ /		
424.4 Design Changes		/ /	/ /	/ /		
424.7 Performance Eval	PE-424-1	/ /	/ /	/ /		
425 VALLEY BORROW AREA						
425.0 Final Plans	S-425-1	06/12/87	06/09/87	/ /		
425.1 Quality Plan	QP-425-1	06/12/87	06/09/87	/ /		
425.2 Final Constr Rept		/ /	/ /	/ /		
425.4 Design Changes		/ /	/ /	/ /		
425.7 Performance Eval	PE-425-1	/ /	/ /	/ /		

Table 3 (Continued)

DOCUMENT (DOC)	DOCUMENT NUMBERS (DOCNUM)	REQUIRED SUBMITTAL DATE (RAPDATE)	ACTUAL DATE SUBMITTED (SUBMITTED)	DATE APPROVED (APPROVED)	APPROVED BY (BY)	MEMO FIELD DOCUMENT MODIFICATIONS (DOCMOD)
426 HILLSIDE SEEPAGE						
426.0 Final Plans	S-426-1	06/12/87	04/13/87	/ /		
426.1 Quality Plan	QP-426-1	06/12/87	04/13/87	/ /		
426.2 Final Constr Rept		/ /	/ /	/ /		
426.4 Design Changes		/ /	/ /	/ /		
426.10 Performance Eval	PE-426-1	/ /	/ /	/ /		
428 NEW EVAP PONDS CRP-7						
428.0 Final Plans	S-428-1	04/12/87	03/19/87	05/18/87	DHS	
428.1 Quality Plan	QP-428-1	04/12/87	03/19/87	05/18/87	DHS	
428.2 Final Constr Rept		/ /	/ /	/ /		
428.4 Design Changes		/ /	/ /	/ /		
428.10 Performance Eval	PE-428-1	/ /	/ /	/ /		
428 NEW EVAP PONDS CRP-8						
428.0 Final Plans	S-428-1	04/12/87	03/19/87	05/18/87	DHS	
428.1 Quality Plan	QP-428-1	04/12/87	03/19/87	05/18/87	DHS	
428.2 Final Constr Rept		/ /	/ /	/ /		
428.4 Design Changes		/ /	/ /	/ /		
428.10 Performance Eval	PE-428-1	/ /	/ /	/ /		
429 PONDED LIQUIDS						
429.0 Final Plans	S-429-1	06/12/87	06/12/87	/ /		
429.1 Quality Plan	QP-429-1	06/12/87	06/12/87	/ /		
429.2 Final Constr Rept		/ /	/ /	/ /		
429.4 Design Changes		/ /	/ /	/ /		
429.6 Performance Eval	PE-429-1	/ /	/ /	/ /		
430 GROUNDWATER						
429.0 Final Plans	S-430-1	06/12/87	06/12/87	/ /		
429.1 Quality Plan	QP-430-1	06/12/87	06/12/87	/ /		
429.2 Final Constr Rept		/ /	/ /	/ /		
429.4 Design Changes		/ /	/ /	/ /		
429.7 Performance Eval	PE-430-1	/ /	/ /	/ /		

2.3 Construction Tracking and Inspection System (CONTRAK)

Objectives of the Construction Tracking and Inspection System are to verify that the construction activities at Uravan have been conducted in accordance with the Final Plans and Specifications and Quality Plans and to provide a detailed record of the State's Oversight activities.

The Construction Tracking and Inspection System provides the OSC with a computer-based format for performing field and office inspection activities for the Uravan Project. This system is designed for direct input to the computer program dBase III Plus, and is similar to the DocLog tracking system.

The basis for the system is the tracking and inspection of specific construction activities in each of the project areas; e.g., inspection of the Surface Runoff Control Facilities (construction activity) at the Atkinson Creek Crystal Disposal Area (project area). Each of the construction activities listed on Table 4 will have a specific compliance report. Approval of this report by the OSC will signify that the construction activity has been completed properly. As soon as all compliance reports for a project area have been approved, the final construction report listed in Table 3 can be reviewed and approved.

To assure the adequate inspection and tracking of specific construction activities, specific inspection tasks are described in Table 5. Table 5, provides details as to the specific inspection tasks using a memo field in dBase III Plus. This memo field, termed Memo Inspection Form (FORM), contains a detailed description of the specific inspection task and provides space for the Inspection Notes, Date Inspected, and the Inspector. The Memo Inspection Form will be printed for direct use in the field by the OSC and the notes from this field inspection be entered into this memo field. A printout of the inspection form with the results of the inspection will be transmitted to Umetco. A specific construction task may be inspected more than once and, accordingly, entered into the Memo Inspection Form. Additional inspection tasks may develop as the Uravan Project proceeds and may be placed within the Construction Tracking and Inspection System as the need arises.

The Memo Field Changes (CHANGES) is used to document any changes or conditions that may occur during construction which lead to deviations from the Plans and Specifications. With this system all inspections and changes in construction can be documented.

Table 4. General outline, construction tracking and inspection system, Uravan Project.

	CONSTRUCTION ACTIVITY (ACTIVITY)	COMPLIANCE REPORT NUMBER (CRNUM)	DATE APPROVED (APPROVAL)	APPROVED BY (BY)	MEMO INSPECTION FORM (FORM)	MEMO FIELD CHANGES (CHANGES)
400	ATKINSON CREEK CRYSTAL DISPOSAL AREA					
400.5	Surface Runoff Control Facilities	CR-400-1				
400.6	Cleanup of Contaminated Materials	CR-400-2				
400.7	Installation of Synthetic Liners	CR-400-3				
400.8	Final Reclamation	CR-400-4				
401	CLUB RANCH PONDS AREA					
401.5	Surface Runoff Control Facilities	CR-401-1				
401.6	Dewatering of Existing Club Ranch Ponds	CR-401-2				
401.7	Initial Removal of Raffinate Crystals and Contaminated Soils	CR-401-3				
401.8	Preparation for Lining the Existing Club Ranch Ponds	CR-401-4				
401.9	Construction of the Leak Detection System	CR-401-5				
401.10	Installation of the Synthetic Liners	CR-401-6				
401.11	Final Cleanup	CR-401-7				
401.12	Final Reclamation	CR-401-8				
402	RIVER PONDS AREA					
402.5	Surface Runoff Control Facilities	CR-402-1				
402.6	Cleanup of Contaminated Materials	CR-402-2				
402.7	Final Reclamation	CR-402-3				

Table 4 (Continued)

CONSTRUCTION ACTIVITY (ACTIVITY)		COMPLIANCE REPORT NUMBER (CRNUM)	DATE APPROVED (APPROVAL)	APPROVED BY (BY)	MEMO INSPECTION FORM (FORM)	MEMO FIELD CHANGES (CHANGES)
404	TAILINGS PILES					
404.5	Dewatering Liquids on Tailings Piles	CR-404-1				
404.6	Placement of Contaminated Materials on Tailings Piles	CR-404-2				
404.7	Riprap Cover for Rock Buttress	CR-404-3				
404.8	Reclamation Cover for Existing 3H:1V Slopes of Tailing Piles	CR-404-4				
404.9	Reclamation Cover for 5H:1V Slopes and Top of Tailings Piles	CR-404-5				
404.10	Surface Runoff Control Facilities	CR-404-6				
404.11	Monitoring Devices	CR-404-7				
406	CLUB MESA AREA					
406.5	Surface Runoff Control Facilities	CR-406-1				
406.6	Cleanup of Raffinate Crystals, Neutralized Sludge and Contaminated Soils	CR-406-2				
406.7	Backfilling of Subsided Areas and Closure of Mine Shafts and Portals	CR-406-3				
406.8	Final Reclamation	CR-406-4				
413	MILL AREA					
413.5	Initial Cleanup of Heap Leach Site	CR-413-1				
413.6	Cleanup of Ore Stockpile Areas	CR-413-2				
413.7	Removal of Barrels from the Barrel Storage Area	CR-413-3 and				
	Soils Cleanup of Barrel Storage Area	CR-413-4				
413.8	Cleanup of Bone Yard	CR-413-5				
413.9	Cleanup of Other Mill Areas	CR-413-6				
413.10	Final Reclamation of Mill Areas	CR-413-7				

Table 4 (Continued)

CONSTRUCTION ACTIVITY (ACTIVITY)		COMPLIANCE REPORT NUMBER (CRNUM)	DATE APPROVED (APPROVAL)	APPROVED BY (BY)	MEMO INSPECTION FORM (FORM)	MEMO FIELD CHANGES (CHANGES)
418	TOWN AND ADJACENT AREAS					
418.5	Cleanup of Town and Dispersed Deposits	CR-418-1				
418.6	Town Dump Investigation Program	CR-418-2				
418.7	Cleanup of Remnant Tailings	CR-418-3				
418.8	Construction of Sediment Control Barriers	CR-418-4				
418.9	Reclamation of Sediment Control Barriers	CR-418-5				
423	BURBANK QUARRY					
423.5	Placement of Compacted Clay Liner for Repository	CR-423-1				
423.6	Placement of Raffinate Crystals, Clayey Cover on Cells	CR-423-2				
423.7	Reclamation Cover for 3H:1V Slope and Top of Repository	CR-423-3				
423.8	Surface Runoff Control Facilities-Remedial Activities Period	CR-423-4				
423.9	Surface Runoff Control Facilities-Post Reclamation Period	CR-423-5				
423.10	Monitoring Devices	CR-423-6				
423.11	Final Quarry Reclamation	CR-423-7				
424	UPPER CLUB MESA BORROW AREA					
424.5	Preparation of the Borrow Area	CR-424-1				
424.6	Final Reclamation Including Sediment Barriers	CR-424-2				
425	VALLEY BORROW AREA					
425.5	Preparation of the Borrow Area	CR-425-1				
425.6	Final Reclamation	CR-425-2				

Table 4 (Continued)

CONSTRUCTION ACTIVITY (ACTIVITY)		COMPLIANCE REPORT NUMBER (CRNUM)	DATE APPROVED (APPROVAL)	APPROVED BY (BY)	MEMO INSPECTION FORM (FORM)	MEMO FIELD CHANGES (CHANGES)
426	HILLSIDE SEEPAGE					
426.5	Improvements to the Existing Collection System	CR-426-1				
426.6	Construction of the New Collection System	CR-426-2				
426.7	Final Cleanup of Hillside Seepage Collection Systems	CR-426-3				
426.8	Reclamation of Hillside Seepage Collection Systems	CR-426-4				
428	NEW EVAPORATION PONDS					
428.5	Surface Runoff Control Facilities (Ditch 6)	CR-428-1				
428.6	Site Preparation	CR-428-2				
428.7	Earthwork for Pond Construction	CR-428-3				
428.8	Construction of Leak Detection System	CR-428-4				
428.9	Installation of Synthetic Liners	CR-428-5				
429	PONDED LIQUIDS AND SURFACE RUNOFF					
429.5	Transfer of Liquids Within the Mill Circuits	CR-429-1				
430	GROUNDWATER					
430.5	Installation of Any Replacement Observation Well(s)	CR-430-1				
430.6	Installation of Withdrawal Wells	CR-430-2				

Table 5. Construction tracking and inspection system, Uravan Project Memo Inspection Form (FORM).

400 ATKINSON CREEK CRYSTAL AREA

INSPECTION TASK 400 ATKINSON CREEK CRYSTAL AREA: This project area is to be inspected according to the details presented in Sections 400.5 through 400.8. Refer to those sections for specific details. After approval of these sections, the Final Construction Report is to be reviewed and approval noted in the Document Control Log (DOCLOG).

400.5 SURFACE RUNOFF CONTROL FACILITIES

INSPECTION TASK 400.5 SURFACE RUNOFF CONTROL FACILITIES: This construction task if to be inspected according to the details presented in Sections 400.5.1 through 400.5.6. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-400-1 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

400.5.1 Review/Approve Soil Characterization Survey

INSPECTION TASK 400.5.1 Review/Approve the Soil Characterization Survey: The soil characterization survey is to be reviewed for compliance with Specification S-SCP-1. Assure that scintillometer measurements have been made and properly recorded.

INSPECTION NOTES: Date_____, Inspector, _____.

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400.5.2 Verify Contaminated Soil Removal

INSPECTION TASK 400.5.2 Verify Contaminated Soils Removal: Verify that any contaminated soils or other materials have been removed from the area surrounding the Atkinson Creek Crystal Disposal Area. Review scintillometer surveys and other available information. Determine that the soils meet criteria of Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

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400.5.3 Check Ditch Location(s)

INSPECTION TASK 400.5.3 Check Ditch Location(s): This construction task is to be inspected for conformance with Drawing(s) P-400-1 and P-400-2. Note any significant changes in ditch locations and assure that such changes are noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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400.5.4 Measure Ditch Dimensions and Gradients

INSPECTION TASK 400.5.4 Measure Ditch Dimensions and Gradients: Measure the width, depth, sideslope and gradient of the ditch(es) to assure conformance with the details on Drawings P-400-1 and P-400-2. Note any significant changes and assure that such changes are noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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400.5.5 Calculate Ditch Capacity

INSPECTION TASK 400.5.5 Calculate Ditch Capacity: Using the ditch measurements, calculate or estimate the ditch capacity. Use the following equation Q= 1.49/n R(2/3) S(1/2) A. Assure that capacity specifications are met in accordance with Specification S-400-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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400.5.6 Observe and Check Retention Pond Earthwork

INSPECTION TASK 400.5.6 Observe and Check Retention Pond Earthwork: This construction task will be observed to confirm that the retention pond is constructed in the appropriate location (see Drawing P-400-2), with the dimensions and capacity per Specification S-400-1, and that the earth embankment has been placed and compacted properly (Quality Plan QP-400-1).

INSPECTION NOTES: Date_____, Inspector, _____.

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400.6 CLEANUP OF CONTAMINATED MATERIALS

INSPECTION TASK 400.6 CLEANUP OF CONTAMINATED MATERIALS: This construction task if to be inspected according to the details presented in Sections 400.6.1 through 400.6.6. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-400-2 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

400.6.1 Verify Construction of Wheel Wash Facility

INSPECTION TASK 400.6.1 Verify Construction and Wheel Wash Facility: This construction task will be inspected for conformance with Drawing and standard details on Drawing P-400-3. Details may vary so the facility should be inspected during operation. Note any field changes.

INSPECTION NOTES: Date_____, Inspector, _____.

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400.6.2 Observe Contaminated Materials Removal

INSPECTION TASK 400.6.2 Observe Contaminated Materials Removal: This construction task will be inspected for conformance with Drawing and standard details on Drawing P-400-3. Details may vary so the facility should be inspected during operation. Note any field changes.

INSPECTION NOTES: Date_____, Inspector, _____.

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400.6.3 Observe Contaminated Material Transport

INSPECTION TASK 400.6.3 Observe Contaminated Material Transport: This construction task will be observed to confirm that the trucks are properly covered and that excess spillage does not occur. Document cleanup of spilled material.

INSPECTION NOTES: Date_____, Inspector, _____.

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400.6.4 Observe Contaminated Material Placement

INSPECTION TASK 400.6.4 Observe Contaminated Material Placement: This construction task will be observed to confirm that the contaminated soils are placed in the tailings piles and the crystals are placed in the Burbank Quarry, according to Specification S-400-1. Refer to inspection task 404.6 and 423.7 for specific inspection tasks. Document cleanup of spilled material.

INSPECTION NOTES: Date_____, Inspector, _____.

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400.6.5 Verify Contaminated Material Removal

INSPECTION TASK 400.6.5 Verify Contaminated Material Removal: This construction task will verify the visual removal of crystal material and the conducting of a soils confirmation investigation to confirm that all contaminated soils and crystals have been removed according to Specification S-SCP-1 and Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

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400.6.6 Review/Verify Soil Confirmation Investigation

INSPECTION TASK 400.6.6 Review/Verify Soil Confirmation Investigation: This soil confirmation investigation will be reviewed for conformance with Specification S-SCP-1. Scintillometer measurements, soil sample results and survey procedures will be reviewed. The results must meet the appropriate criteria in Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

400.7 INSTALLATION OF SYNTHETIC LINERS

INSPECTION TASK 400.7 INSTALLATION OF SYNTHETIC LINERS: This construction task is to be inspected according to the details presented in Sections 400.7.1 through 400.7.5. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-400-3 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

400.7.1 Inspect Liner Material

INSPECTION TASK 400.7.1 Inspect Liner Material: Liner material will be inspected to determine that it meets the thickness and quality requirements in Specification S-400-1.

INSPECTION NOTES: Date_____, Inspector, _____.

400.7.2 Observe Liner Installation

INSPECTION TASK 400.7.2 Observe Liner Installation: Liner installation will be observed to determine conformance with the lines, grades, and details shown in Drawings P-400-1 and P-400-2. Field changes will be noted and field drawings checked for those changes.

INSPECTION NOTES: Date_____, Inspector, _____.

400.7.3 Check Liner Seam Tests (Nondestructive)

INSPECTION TASK 400.7.3 Check Liner Seam Tests (Nondestructive): Review liner seam test procedures and results to determine conformance with Quality Control Procedure QC-19. Check retests of failed seams.

INSPECTION NOTES: Date_____, Inspector, _____.

400.7.4 Check Liner Seam Tests (Destructive)

INSPECTION TASK 400.7.4 Check Liner Seam Tests (Destructive): Review liner seam test procedures and results to determine conformance with Quality Control Procedure QC-19. Check retests of failed seams.

INSPECTION NOTES: Date_____, Inspector, _____.

400.7.5 Review Liner Installation QC Report

INSPECTION TASK 400.7.5 Review Liner Installation QC Report: Review the liner installation quality control report to determine that the liner is certified to meet intended application; field seams have been tested and repaired; and that no holes, blisters, or other defects exist in the material.

INSPECTION NOTES: Date_____, Inspector, _____.

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400.8 FINAL RECLAMATION

INSPECTION TASK 400.8 FINAL RECLAMATION: This construction task is to be inspected according to the details presented in Sections 400.8.1 through 400.8.4. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-400-4 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

400.8.1 Verify Removal of Construction Materials

INSPECTION TASK 400.8.1 Verify Removal of Construction Materials: Inspect the site to determine that all pipes, liner material and other construction materials have been removed from the site. Determine that all contaminated material has been disposed of on the tailings piles or in the Burbank Quarry.

INSPECTION NOTES: Date_____, Inspector, _____.

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400.8.2 Observe/Verify Final Site Grading

INSPECTION TASK 400.8.2 Observe/Verify Final Site Grading: Inspect and review survey reports of the site to determine that the site grading conforms to the approximate lines and grades shown on Drawings P-400-1. Verify that material is uncontaminated and that final slopes are less than 3H:1V.

INSPECTION NOTES: Date_____, Inspector, _____.

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400.8.3 Observe/Verify Random Fill Cover

INSPECTION TASK 400.8.3 Observe/Verify Random Fill Cover: Inspect the site to determine that the random fill cover conforms to the location, thickness, and gradation requirements of Specification S-400-1 and Drawing P-400-1. Verify that material is uncontaminated and that final slopes are less than 3H:1V.

INSPECTION NOTES: Date_____, Inspector, _____.

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400.8.4 Observe/Verify Site Revegetation

INSPECTION TASK 400.8.4 Observe/Verify Site Revegetation: Inspect the site to determine that all disturbed areas have been reseeded with the seed mixture, application method and application rate required in Specification S-400-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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401 CLUB RANCH PONDS AREA

INSPECTION TASK 401 CLUB RANCH POND AREA: This project area is to be inspected according to the details presented in Sections 401.5 through 401.11. Refer to those sections for specific details. After approval of these sections, the Final Construction Report is to be reviewed and approval noted in the Document Control Log (DOCLOG).

401.5 SURFACE RUNOFF CONTROL FACILITIES

INSPECTION TASK 401.5 SURFACE RUNOFF CONTROL FACILITIES: This construction task is to be inspected according to the details presented in Sections 401.5.1 through 401.5.5. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-401-1 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

401.5.1 Review and Approve the Soil Characterization Survey

INSPECTION TASK 401.5.1 Review and Approve the Soil Characterization Survey: The soil characterization survey is to be reviewed for compliance with Specification S-SCP-1. Assure that scintillometer measurements have been made and properly recorded.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.5.2 Verify Contaminated Soils Removal

INSPECTION TASK 401.5.2 Verify Contaminated Soils Removal: Verify that any contaminated soils or other materials have been removed from the area surrounding the Club Ranch Ponds and in the area of the ditches. Review scintillometer surveys and other available information.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.5.3 Check Ditch Location(s)

INSPECTION TASK 401.5.3 Check Ditch Location(s): This construction task is to be inspected for conformance with Drawings P-401-1, P-401-2, and P-401-3. Note any significant changes in ditch locations and assure that such changes are noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.5.4 Measure Ditch Dimensions and Gradients

INSPECTION TASK 401.5.4 Measure Ditch Dimensions and Gradients: Measure the width, depth sideslope and gradient of the ditch(es) to assure conformance with the details on Drawings P-401-1, P-401-2, and P-401-3. Note any significant changes and assure that such changes are noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.5.5 Calculate Ditch Capacity

INSPECTION TASK 401.5.5 Calculate Ditch Capacity: Using the ditch measurements, calculate or estimate the ditch capacity. Use the following equation Q= 1.49/n R(2/3) S(1/2) A. Assure that capacity specifications are met in accordance with Specification S-401-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.6 DEWATERING THE EXISTING CLUB RANCH PONDS

INSPECTION TASK 401.6 DEWATERING THE EXISTING CLUB RANCH PONDS: This construction task is to be inspected according to the details presented in Sections 401.6.1 through 401.6.2. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-401-2 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

401.6.1 Confirm Cessation of Liquid Discharge

INSPECTION TASK 401.6.1 Confirm Cessation of Liquid Discharge: This inspection task is to confirm that the discharge of all liquids to the Club Ranch Ponds is ceased by June 30, 1988.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.6.2 Confirm Evaporation/Transfer of Liquids

INSPECTION TASK 401.6.2 Confirm Evaporation/Transfer of Liquids: Specification S-401-1 and the RAP requires that all liquid waste in the unlined Club Ranch Ponds (CRP 1 through 6) shall be evaporated in place or removed not later than December 31, 1988. The ponds will be inspected to assure conformance with this requirement.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.7 INITIAL REMOVAL OF RAFFINATE CRYSTALS AND SOIL

INSPECTION TASK 401.7 INITIAL REMOVAL OF RAFFINATE CRYSTALS AND SOIL: This construction task is to be inspected according to the details presented in Sections 401.7.1 through 401.7.6. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-400-3 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

401.7.1 Verify Construction of Wheel Wash Facility

INSPECTION TASK 401.7.1 Verify Construction of Wheel Wash Facility: This construction task will be inspected for conformance with Drawing and standard details on Drawings P-400-3 and P-401-1. Details may vary so the facility should be inspected during construction and operation. Note any field changes.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.7.2 Observe Contaminated Materials Removal

INSPECTION TASK 401.7.2 Observe Contaminated Materials Removal: This construction task will be observed to document that removal activities are conducted in good and workmanlike manner and that trucks leaving the contaminated area are clean.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.7.3 Observe Contaminated Materials Transport

INSPECTION TASK 401.7.3 Observe Contaminated Materials Transport: This construction task will be observed to confirm that the trucks are properly covered and that excess spillage does not occur. Document cleanup of spilled material.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.7.4 Observe Contaminated Material Placement

INSPECTION TASK 401.7.4 Observe Contaminated Material Placement: This construction task will be observed to confirm that the contaminated soils are placed in the tailings piles and crystals are placed in the Burbank Quarry according to Specification S-401-1. Refer to Sections 404.6 and 423.7 for specific inspection tasks.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.7.5 Verify Contaminated Material Removal

INSPECTION TASK 401.7.5 Verify Contaminated Material Removal: This construction task will verify the undertaking of a soils confirmation investigation to confirm that all contaminated soils and crystals have been removed according to Specification S-SCP-1 and Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.7.6 Review/Verify Soil Confirmation Investigation

INSPECTION TASK 401.7.6 Review/Verify Soil Confirmation Investigation: The soil confirmation investigation will be reviewed for conformance with Specification S-SCP-1. Scintillometer measurements, soil sample results and survey procedures will be reviewed. The results must meet the appropriate criteria in Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.8 PREPARATION FOR LINING THE EXISTING CLUB RANCH PONDS (1-6)

INSPECTION TASK 401.8 PREPARATION FOR LINING THE EXISTING CLUB RANCH PONDS (1-6): This construction task is to be inspected according to the details presented in Sections 401.8.1 through 401.8.4. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-401-4 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

401.8.1 Observe Regrading of Pond Bottoms/Banks

INSPECTION TASK 401.8.1 Observe Regrading of Pond Bottoms/Banks: This construction task will be observed to confirm that regrading of Pond Bottoms/Banks conforms to Specification S-401-1 and Drawings P-401-1 and P-402-2.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.8.2 Check Pond Bottom/Banks Soils Tests

INSPECTION TASK 401.8.2 Check Pond Bottom/Banks Soils Tests: The soil test confirmation will be done in accordance to QP-401-1 by observing field and laboratory testing and reviewing QC reports. Failed tests will require retesting. Review laboratory calculations and worksheets.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.8.3 Observe Placement of Clayey Base

INSPECTION TASK 401.8.3 Observe Placement of Clayey Base: This construction task will be observed to confirm that placement of the clayey base material conforms to Specification S-401-1 and lines and grades shown on Drawings P-401-1 and P-401-2. Elevations may be subject to change and any changes should be noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.8.4 Check Clayey Base Soils Tests

INSPECTION TASK 401.8.4 Check Clayey Base Soils Tests: The soil test confirmation will be done in accordance to QP-401-1 by observing field and laboratory testing and reviewing QC reports. Failed tests will require retesting. Review laboratory calculations and worksheets.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.9 CONSTRUCTION OF LEAK DETECTION SYSTEM

INSPECTION TASK 401.9 CONSTRUCTION OF LEAK DETECTION SYSTEM: This construction task is to be inspected according to the details presented in Sections 401.9.1 through 401.9.8. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-401-5 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

401.9.1 Observe Excavation of Drainage Trenches

INSPECTION TASK 401.9.1 Observe Excavation of Drainage Trenches: This construction task will be observed to confirm location, lines, and grades, variations from these lines and grades and reasons for the field changes. Trenches shall be graded to a surface tolerance of plus or minus 0.1 foot over a 10 foot distance and sharp protrusions shall be removed.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.9.2 Verify Trench Locations and Grades

INSPECTION TASK 401.9.2 Verify Trench Locations and Grades: Verify that the trench location and grades conform to Specification S-401-1 and Drawings P-401-1 and P-402-2 by field observation and review of the survey reports. Alignments and excavations may vary due to field conditions and changes should be noted in the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.9.3 Observe Trench Liner Installation

INSPECTION TASK 401.9.3 Observe Trench Liner Installation: Liner installation will be observed to determine conformance with the lines, grades, and details shown in Drawings P-401-1, P-401-2, and P-401-3. Field changes will be noted and field drawings checked for those changes. Liner will be installed prior to placement of drainage material and drain pipe.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.9.4 Check Liner Seam Tests (Nondestructive)

INSPECTION TASK 401.9.4 Check Liner Seam Tests (Nondestructive): Review liner seam test procedures and results to determine conformance with Quality Control Procedure QC-19. Check retests of failed seams.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.9.5 Check Liner Seam Tests (Destructive)

INSPECTION TASK 401.9.5 Check Liner Seam Tests (Destructive): Review liner seam test procedures and results to determine conformance with Quality Control Procedure QC-19. Check retests of failed seams.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.9.6 Observe Drain Pipe/Materials Placement

INSPECTION TASK 401.9.6 Observe Drain Pipe/Materials Placement: This construction task shall be observed to confirm that the correct materials are placed in a manner to minimize segregation and avoid damage to the drain pipes. Holes in the drain pipe should be placed facing down. Placement should conform to Specification S-404-1 and Drawing P-401-2.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.9.7 Check Drain Pipe/Materials Specifications and Tests

INSPECTION TASK 401.9.7 Check Drain Pipe/Materials Specifications and Tests: Drainage materials and drain pipe shall conform to Specification S-401-1 and conform to Quality Control Procedures QC-6, QC-9, and QC-11. Lining shall be as shown on Drawing P-428-2. Field observations and review of QC reports will confirm the materials.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.9.8 Check Location/Construction of CRP Sumps

INSPECTION TASK 401.9.8 Check Location/Construction of CRP Sumps: CRP sumps shall conform to Specification S-401-1 and be constructed to the lines and grades shown on Drawing P-401-2. Type of sump material and backfill should be observed and noted.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.10 INSTALLATION OF SYNTHETIC LINERS

INSPECTION TASK 401.10 INSTALLATION OF SYNTHETIC LINERS: This construction task is to be inspected according to the details presented in Sections 401.10.1 through 401.10.5. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-401-6 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

401.10.1 Inspect Liner Material

INSPECTION TASK 401.10.1 Inspect Liner Material: Liner material will be inspected to determine that it meets the thickness and quality requirements in Specification S-401-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.10.2 Observe Liner Installation

INSPECTION TASK 401.10.2 Observe Liner Installation: Liner installation will be observed to determine conformance with the lines, grades, and details shown in Drawings P-401-1, P-401-2 and P-401-3. Field changes will be noted and field drawings checked for those changes.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.10.3 Check Liner Seam Tests (Nondestructive)

INSPECTION TASK 401.10.3 Check Liner Seam Tests (Nondestructive): Review liner seam test procedures and results to determine conformance with Quality Control Procedure QC-19. Check retests of failed seams.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.10.4 Check Liner Seam Tests (Destructive)

INSPECTION TASK 401.10.4 Check Liner Seam Tests (Destructive): Review liner seam test procedures and results to determine conformance with Quality Control Procedure QC-19. Check retests of failed seams.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.10.5 Review Liner Installer QC Report

INSPECTION TASK 401.10.5 Review Liner Installer QC Report: Review the liner installation quality control report to determine that the liner is certified to meet intended application, field seams have been tested and repaired and that no holes, blisters, or other defects exist in the material.

INSPECTION NOTES: Date_____, Inspector, _____.

401.11 FINAL CLEANUP

INSPECTION TASK 401.11 FINAL CLEANUP: This construction task is to be inspected according to the details presented in Sections 401.11.1 through 401.11.5. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-401-7 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

401.11.1 Observe Contaminated Materials Removal

INSPECTION TASK 401.11.1 Observe Contaminated Materials Removal: This construction task will be observed to document that removal activities are conducted in good and workmanlike manner and that trucks leaving the contaminated area are clean.

INSPECTION NOTES: Date_____, Inspector, _____.

401.11.2 Observe Contaminated Materials Transport

INSPECTION TASK 401.11.2 Observe Contaminated Materials Transport: This construction task will be observed to confirm that the trucks are properly covered and that excess spillage does not occur. Document cleanup of spilled material.

INSPECTION NOTES: Date_____, Inspector, _____.

401.11.3 Observe Contaminated Materials Placement

INSPECTION TASK 401.11.3 Observe Contaminated Materials Placement: This construction task will be observed to confirm that the contaminated soils and crystals are placed in Burbank Quarry according to Specification S-401-1. Refer to Sections 404.6 and 423.7 for specific inspection tasks.

INSPECTION NOTES: Date_____, Inspector, _____.

401.11.4 Verify Contaminated Material Removal

INSPECTION TASK 401.11.4 Verify Contaminated Material Removal: This construction task will verify visual removal of the crystals and conducting a soils confirmation investigation to confirm that all contaminated soils and crystals have been removed according to Specification S-SCP-1 and Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

401.11.5 Review/Verify Soil Confirmation Investigation

INSPECTION TASK 401.11.5 Review/Verify Soil Confirmation Investigation: The soil confirmation investigation will be reviewed for conformance with Specification S-SCP-1. Scintillometer measurements, soil sample results and survey procedures will be reviewed. The results must meet the appropriate criteria in Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.12 FINAL RECLAMATION

INSPECTION TASK 401.12 FINAL RECLAMATION: This construction task is to be inspected according to the details presented in Sections 401.12.1 through 401.12.4. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-401-8 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

401.12.1 Verify Removal of Construction Materials

INSPECTION TASK 401.12.1 Verify Removal of Construction Materials: Inspect the site to determine that all pipes, liner material, and other construction materials have been removed from the site. Determine that all contaminated material has been disposed of on the tailings piles or in the Burbank Quarry.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.12.2 Observe/Verify Final Site Grading

INSPECTION TASK 401.12.2 Observe/Verify Final Site Grading: Inspect the site to determine that the site grading conforms to the approximate lines and grades shown on Drawings P-401-1, P-401-2, and P-401-3. Verify that material is uncontaminated and that final slopes are less than 3H:1V.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.12.3 Observe/Verify Random Fill Cover

INSPECTION TASK 401.12.3 Observe/Verify Random Fill Cover: Inspect the site to determine that the random fill cover conforms to the location, thickness, and gradation requirements of Specification S-401-1. Verify that material is uncontaminated and that final slopes are less than 3H:1V.

INSPECTION NOTES: Date_____, Inspector, _____.

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401.12.4 Observe/Verify Site Revegetation

INSPECTION TASK 401.12.4 Observe/Verify Site Revegetation: Inspect the site to determine that all disturbed areas have been reseeded with the seed mixture, application method and application rate required in Specification S-401-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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402 RIVER PONDS AREA

INSPECTION TASK 402 RIVER PONDS AREA: This project area is to be inspected according to the details presented in Sections 402.5 through 402.7. Refer to those sections for specific details. After approval of these sections, the Final Construction Report is to be reviewed and approval noted in the Document Control Log (DOCLOG).

402.5 SURFACE RUNOFF CONTROL FACILITIES

INSPECTION TASK 402.5 SURFACE RUNOFF CONTROL FACILITIES: This construction task is to be inspected according to the details presented in Sections 402.5.1 through 402.5.5. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-402-1 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

402.5.1 Review/Approve Soil Characterization Survey

INSPECTION TASK 402.5.1 Review/Approve Soil Characterization Survey: The soil characterization survey is to be reviewed for compliance with Specification S-SCP-1. Assure that scintillometer measurements have been made and properly recorded.

INSPECTION NOTES: Date_____, Inspector, _____.

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402.5.2 Verify Contaminated Soils Removal

INSPECTION TASK 402.5.2 Verify Contaminated Soils Removal: Verify that any contaminated soils or other materials have been removed from the area adjacent to the River Ponds area. Review scintillometer surveys and other available information.

INSPECTION NOTES: Date_____, Inspector, _____.

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402.5.3 Check Ditch Location(s)

INSPECTION TASK 402.5.3 Check Ditch Location(s): This construction task is to be inspected for conformance with Drawing P-402-1. Note any significant changes in ditch locations and assure that such changes are noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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402.5.4 Measure Ditch Dimensions and Gradients

INSPECTION TASK 402.5.4 Measure Ditch Dimensions and Gradients: Measure the width, depth, sideslope and gradient of the ditch(es) to assure conformance with the details on Drawing P-402-1. Note any significant changes and assure that such changes are noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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402.5.5 Calculate Ditch Capacity

INSPECTION TASK 402.5.5 Calculate Ditch Capacity: Using the ditch measurements, calculate or estimate the ditch capacity. Use the following equation Q= 1.49/n R(2/3) S(1/2) A. Assure that capacity specifications are met in accordance with Specification S-402-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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402.6 CLEANUP OF CONTAMINATED MATERIALS

INSPECTION TASK 402.6 CLEANUP OF CONTAMINATED MATERIALS: This construction task is to be inspected according to the details presented in Sections 402.6.1 through 402.6.6. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-402-2 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

402.6.1 Verify Construction of Wheel Wash Facility

INSPECTION TASK 402.6.1 Verify Construction and Wheel Wash Facility: This construction task will be inspected for conformance with Drawing P-400-1 and standard details on Drawing P-400-3. Details may vary so the facility should be inspected during operation and construction. Note any field changes.

INSPECTION NOTES: Date_____, Inspector, _____.

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402.6.2 Observe Contaminated Materials Removal

INSPECTION TASK 402.6.2 Observe Contaminated Materials Removal: This construction task will be observed to document that removal activities are conducted in good and workmanlike manner and that trucks leaving the contaminated area are clean.

INSPECTION NOTES: Date_____, Inspector, _____.

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402.6.3 Observe Contaminated Material Transport

INSPECTION TASK 402.6.3 Observe Contaminated Material Transport: This construction task will be observed to confirm that the trucks are properly covered and that excess spillage does not occur. Document cleanup of spilled material.

INSPECTION NOTES: Date_____, Inspector, _____.

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402.6.4 Observe Contaminated Materials Placement

INSPECTION TASK 402.6.4 Observe Contaminated Materials Placement: This construction task will be observed to confirm that the contaminated soils and tailings are placed in the tailings piles according to Specification S-402-1. Refer to Section 404.6 for specific inspection tasks.

INSPECTION NOTES: Date_____, Inspector, _____.

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402.6.5 Verify Contaminated Material Removal

INSPECTION TASK 402.6.5 Verify Contaminated Material Removal: This construction task will verify the visual removal of tailings material and the conducting of a soils confirmation investigation to confirm that all contaminated soils and tailings have been removed according to Specification S-SCP-1 and Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

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402.6.6 Review/Verify Soil Confirmation Investigation

INSPECTION TASK 402.6.6 Review/Verify Confirmation Investigation: This soil confirmation investigation will be reviewed for conformance with Specification S-SCP-1. Scintillometer measurements, soil sample results and survey procedures will be reviewed. The results must meet the appropriate criteria in Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

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402.7 FINAL RECLAMATION

INSPECTION TASK 402.7 FINAL RECLAMATION: This construction task is to be inspected according to the details presented in Sections 402.7.1 through 402.7.4. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-402-3 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

402.7.1 Verify Removal of Construction Materials

INSPECTION TASK 402.7.1 Verify Removal of Construction Materials: Inspect the site to determine that all pipes, liner material, and other construction materials have been removed from the site. Determine that all contaminated material has been disposed of on the tailings piles or in the Burbank Quarry.

INSPECTION NOTES: Date_____, Inspector, _____.

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402.7.2 Observe/Verify Final Site Grading

INSPECTION TASK 402.7.2 Observe/Verify Final Site Grading: Inspect and review survey reports of the site to determine that the site grading conforms to the approximate lines and grades shown on Drawing P-402-1. Verify that material is uncontaminated and that final slopes are less than 3H:1V.

INSPECTION NOTES: Date_____, Inspector, _____.

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402.7.3 Observe/Verify Random Fill Cover

INSPECTION TASK 402.7.3 Observe/Verify Random Fill Cover: Inspect the site to determine that the random fill cover conforms to the location, thickness, and gradation requirements of Specification S-402-1 and Drawing P-402-1. Verify that material is uncontaminated and that final slopes are less than 3H:1V.

INSPECTION NOTES: Date_____, Inspector, _____.

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402.7.4 Observe/Verify Site Revegetation

INSPECTION TASK 402.7.4 Observe/Verify Site Revegetation: Inspect the site to determine that all disturbed areas have been reseeded with the seed mixture, application method and application rate required in Specification S-402-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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404 TAILINGS PILES

INSPECTION TASK 404 TAILINGS PILES: This project area is to be inspected according to the details presented in Sections 404.5 through 404.11. Refer to those sections for specific details. After approval of these sections, the Final Construction Report is to be reviewed and approval noted in the Document Control Log (DOCLOG).

404.5 DEWATERING LIQUIDS ON TAILINGS PILES

INSPECTION TASK 404.5 DEWATERING LIQUIDS ON TAILINGS PILES: This construction task is to be inspected according to the details presented in Sections 404.5.1 through 404.5.2. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-404-1 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

402.5.1 Verify Construction of Ditches and Sumps

INSPECTION TASK 402.5.1 Verify Construction of Ditches and Sumps: This inspection task is to verify the construction of ditches and sumps so that a minimum pool lend is maintained. All trenches should be free flowing to the sump low point.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.5.2 Confirm Operation of Ditches and Sumps

INSPECTION TASK 404.5.2 Confirm Operation of Ditches and Sumps: Ditches are to be inspected to assure that liquids are properly conveyed to the sumps and that the sumps are working properly and maintaining a minimum pool size. All liquids are to be pumped to the lined Club Ranch Ponds.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.6 PLACEMENT OF CONTAMINATED MATERIALS ON THE TAILINGS PILES

INSPECTION TASK 404.6 PLACEMENT OF CONTAMINATED MATERIALS ON THE TAILINGS PILES: This construction task is to be inspected according to the details presented in Sections 404.6.1 through 404.6.4. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-404-2 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

404.6.1 Observe Placement of Scrap Material

INSPECTION TASK 404.6.1 Observe Placement of Scrap Material: Scrap placement shall be observed periodically for adherence to the Designated Disposal Areas shown in Drawing P-413-2.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.6.2 Observe Size, Infilling, and Nesting of Scrap

INSPECTION TASK 404.6.2 Observe Size, Infilling, and Nesting of Scrap: Scrap material will be inspected for size, volume, nesting and proper infilling according to QP-404-1 and S-404-1. Special consideration will be given to the placement and compaction of asbestos from the mill decommissioning.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.6.3 Observe Placement and Compaction of Contaminated Materials on Tailings Piles

INSPECTION TASK 404.6.3 Observe Placement and Compaction of Contaminated Materials on Tailings Piles: This construction task will be observed to confirm that contaminated soils and tailings material are properly placed and compacted. Materials are to be placed in lifts not to exceed 2 feet and compacted to at least 90 percent of standard Proctor maximum density. Placement and compaction details are found in Specification S-404-1 and Quality Plan QP-404-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.6.4 Check Contaminated Materials Soils Tests

INSPECTION TASK 404.6.4 Check Contaminated Materials Soils Tests: This inspection task is to confirm that the proper number of tests have been conducted and that the test results indicate adequate compaction of the contaminated materials. All testing is to be performed according to Quality Plan QP-404-1. Review laboratory calculations and worksheets.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.7 RIPRAP COVER FOR ROCK BUTTRESS

INSPECTION TASK 404.7 RIPRAP COVER FOR ROCK BUTTRESS: This construction task is to be inspected according to the details presented in Sections 404.7.1 through 404.7.4. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-404-3 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

404.7.1 Confirm Riprap Specification

INSPECTION TASK 404.7.1 Confirm Riprap Specification: This construction task shall be inspected to confirm that Type C (maximum size 48 inches, D_{50} size of 24 inches to 36 inches, and a D_{15} size of 3 inches to 18 inches is used on the Rock Buttress and is sandstone from the Burbank Quarry. The riprap size shall be determined according to procedure QC-27. A summary of this procedure is as follows:

Two reference piles will be stockpiled at the Burbank Quarry. Each reference pile will be weighed and the density determined on a "pounds per cubic yard basis". The reference stockpiles shall be equal in size to at least the size of the average truck load capacity. Each load of riprap shall be visually checked against the standard piles for gradation prior to transport to the tailings piles and shall be approved by the Quality Control Officer or his designated representative. Verification will be done by observation of sizes; method of separation (gradation or taping); description of size and location of the reference piles; and methodology of mixing and segregation.

INSPECTION NOTES: Date_____, Inspector, _____.
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404.7.2 Observe Riprap Placement

INSPECTION TASK 404.7.2 Observe Riprap Placement: Riprap placement will be observed to assure conformancy to lines and grades as shown on P-404-3 and P-404-4 and detail 3 and as noted on P-404-1 as well as QC-11. Additional Specification S-404-1 and Quality Plan QP-404-1 will be followed. The riprap will be hauled and end-dumped in a manner to minimize segregation of the material. Material shall be placed in a single lift thickness using dozers or excavators in a manner to avoid accumulation of riprap sizes less than the minimum D_{50} size or nesting of larger size rock.

Temporary access roads on the rock fill buttress shall be regraded, compacted and covered with the required thickness of Type C Riprap to conform to the riprap cover in place.

INSPECTION NOTES: Date_____, Inspector, _____.
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404.7.3 Observe Riprap Compaction

INSPECTION TASK 404.7.3 Observe Riprap Compaction: This inspection task will be performed in accordance with S-404-1 and QP-404-1. The riprap layer shall receive at least two passes from a D-7 Dozer or equivalent in order to key the rock for stability. Verification will be done by observation. If spongy conditions are observed, the subbase is too wet and placement should cease until the subbase is properly prepared.

INSPECTION NOTES: Date_____, Inspector, _____.
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404.7.4 Verify Riprap Thickness

INSPECTION TASK 404.7.4 Verify Riprap Thickness: Inspection of this task will be in accordance with QC-28. A summary of this procedure is as follows:

A given work area to receive riprap shall be measured by taping parallel to the ground surface and volume computed on a square foot basis. The required quantity for the specific type riprap shall be calculated and a random truck will be selected daily to fill the volume within $\pm$ 5%. A truck factor for

truck size and riprap type in tons per truck load will be determined. When discrepancies occur, the piles and truck factors will be rechecked and corrected if necessary. The number of trucks used per day should be recorded and the volume spot checked against the area covered that day.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.8 RECLAMATION COVER FOR EXISTING 3H:1V SLOPES OF TAILINGS PILES
INSPECTION TASK 404.8 RECLAMATION COVER FOR EXISTING 3H:1V SLOPES OF TAILINGS PILES: This construction task is to be inspected according to the details presented in Sections 404.8.1 through 404.8.15. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-404-4 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

404.8.1 Confirm Thickness and Compaction of Existing Random Fill
INSPECTION TASK 404.8.1 Confirm Thickness and Compaction of Existing Random Fill: The thickness and compaction of the existing random fill should be performed in accordance with Specification S-404-1 Section 3.0, QP-404-1, and comply with QC-1, QC-7, QC-11, QC-24 and QC-26.

A summary of the basic requirement is as follows: The existing random fill cover has an average depth of 18 inches (0.45 m) and is located on the existing tailings slopes above the rock fill buttress. The thickness of the existing fill shall be measured at approximately 100 feet spacings across the tailings piles. Measurements shall be made perpendicular to the existing slopes. Areas in which the fill thickness is less than 18 inches may be increased to 18 inches (0.45 m) by regrading. The existing random fill layer shall be compacted to 95% of its standard Proctor maximum dry density. It may be necessary to scarify the surface before placement of the 36 inches (0.9 m) clay liner.

Laboratory tests shall be made at specified intervals on samples taken from the embankment as specified in S-404-1 Part IV Section 3.5 Frequency of Quality Control Tests.

1. Field density and moisture tests: not less than one test for each 500 cubic yards of placed random fill and at least 1 test per lift.

2. Gradations and Atterberg limits: not less than one test for each 5000 cubic yards of placed random fill.

3. Laboratory Standard Proctor: not less than one test for each 5000 cubic yards of placed random fill.

Verification will be done by observing the probing, observation of the material and placement; testing and measuring lift thickness, reviewing the survey and QA/QC reports.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.8.2 Confirm Clayey Soil Properties

INSPECTION TASK 404.8.2 Confirm Clayey Soil Properties: Inspection of the material properties used in the radon barrier will be conducted to assure conformance with Specifications S-404-1 (Section 3.2) Quality Plan in QP-404-1 (Section 2.5) and Drawings P-404-3 and P-404-4 (Details 1 and 2). The clayey soils shall be inorganic soils free of brush, roots, sod or other perishable or unsuitable material. It will have a maximum size of QC-6 12 inches (0.3 m) with at least 40% passing the No. 200 sieve QC-5, liquid limit of at least 20% and a minimum plasticity index of 10%. Clay materials that do not meet the Atterberg limit criteria may be used provided the material has diffusion coefficients and emanation coefficients that will not produce radon emanation rates above acceptable levels. All material intended for use as a clayey soil shall be approved by the QC officer.

The sources for the clayey soil shall be from the Upper Club Mesa Borrow area, Burbank Quarry or other state approved borrow source. Verification will be by direct observation of the clayey materials (looking for oversize material, insufficient clay) and review of QA/QC reports.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.8.3 Observe Clayey Soil Placement

INSPECTION TASK 404.8.3 Observe Clayey Soil Placement: This inspection task is to assure compliance with QC-11, QP-404-1 (Section 2.5.1) Specifications S-404-1 (Section 3.2.3) and Drawings P-404-3 and P-404-4 (Details 1 and 2).

A summary of these documents is as follows: the clayey soil is to be placed in horizontal lifts of 1 foot (0.3 m) or less in thickness and compacted to at least 95% of standard proctor maximum density. The compacted thickness of the entire clayey soil layer must be at least 36 inches (0.9 m). The distribution and gradation of the materials throughout the clay soil layer shall be such that the fill as far as practicable be free of lenses, pockets, streaks or layers of material differing substantially in texture, gradation or moisture content from the surrounding material. Successive loads of material shall be placed on the fill so as to produce the best practiced distribution of material.

The layers shall be constructed in sequences such that no single layer of clay soil material is allowed to dry below the specified lower placement moisture content. If the compacted surface of any layer of fill is too dry or smooth to bond properly with the layer of material to be placed thereon, it shall be moistened and/or reworked with a harrow, scarifier or other suitable equipment to a sufficient depth to provide relatively uniform moisture content and a satisfactory bonding surface before the next succeeding layer of earth fill is placed. If the compacted surface of any layer in place is too wet, for proper compaction of the earth fill material to be placed thereon, it shall be removed, allowed to dry or reworked with harrow, scarifier or other suitable equipment to reduce the moisture content to the required level. It shall then be recompacted to the clayey soil requirements. If sponginess is observed as the trucks are driving across, the material may be too wet and may have to be disced or remixed.

No material shall be placed in the clay soil layer when either the materials, existing random fill or the clay soil layer on which material is to be placed is frozen or when ambient temperatures do not permit the placement or compaction of the materials to the specified density without development frost lenses in the fill.

Verification will be by field observation and review of the QA/QC and surveyors reports to assure correct location, dimensions, slopes and grades; quantities of soils from load counts; and fill placement, thickness of fill lifts by measuring, uniformity of soils, moisture and compactive effort.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.8.4 Observe Clayey Soil Compaction

INSPECTION TASK 404.8.4 Observe Clayey Soil Compaction: This inspection task is to assure compliance with Specifications S-404-1 (Section 3.2.4) and QP-404-1 (Section 2.5.3) which shall be done at intervals as specified in Part IV Section 3.5 Frequency of Quality Control Tests. Quality control tests will be performed in accordance with QC-1, QC-7 and QC-11.

The clay soils shall be compacted to at least 95 percent of the standard proctor maximum density (ASTMD-698). Materials shall be placed in the clayey soil layer in continuous layers not more than 1 foot (0.3 m) in thickness after being compacted. The moisture content of the clay soil shall be within the limits of 3 percent dry and 2 percent wet of the standard optimum moisture content. Material that is not within the specified limits after compaction shall be rejected and shall be reworked. Reworking may include removal, reharrowing, reconditioning, rerolling or combinations of these procedures.

Density control of compacted clay soil shall be such that the compacted material represented by samples having a dry density less than 95 percent of its standard proctor maximum density shall be rejected. Such rejected material shall be reworked as necessary and rerolled until a dry density equal to or greater than 95 percent of its standard proctor maximum density is obtained.

Verification will be done by observation and review of QA/QC reports.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.8.5 Check Clayey Layer Soil Tests

INSPECTION TASK 404.8.5 Check Clayey Layer Soil Tests: This inspection task is to assure conformance to Specification S-404-1 which is to be done at a frequency interval as described in QP 404-1 (Section 2.5.3) and be done in accordance to QC-1, QC-2, QC-3, QC-4, QC-5, QC-7 and QC-9. Review laboratory calculations and worksheets.

Clayey soils shall be in organic soils with maximum size of 12 inches (0.3 m) with at least 40% passing the No. 200 sieve, liquid limit of at least 20% and a minimum plasticity index of 10%. Material shall be placed and

compacted in maximum 12 inches (0.3 m) lifts to at least 95% of the maximum standard proctor dry density at a moisture content of between 3% below to 2% above optimum moisture content. When material is too dry or too wet or is below 95% maximum dry density, the material will be reworked or recompacted and the test result will note a retest and the corrective techniques. If more than one retest is done, it shall also be noted. All tests should be reported.

The frequency of the tests shall be as follows:

Field density and moisture tests: not less than once per 500 cubic yards and at least one set per lift.
Gradation and Atterberg Limits: not less than once per 1000 cubic yards.
Laboratory standard Proctor compaction test: not less than once per 5000 cubic yards.

When the nuclear density method is used to determine compaction and moisture tests, other tests such as sand cone will be done as a check for accuracy at least once per week.

Verification will be done by checking the reports for location, lifts, test results, and retests.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.8.6 Verify Clayey Soil Layer Thickness

INSPECTION TASK 404.8.6 Verify Clayey Soil Layer Thickness: This inspection task is to assure a minimum clayey soil thickness of 36 inches (0.9 m) measured perpendicular to the slope for conformance with Specification S-404-1, Quality Plan, QP-404-1, Drawings P-404-3 and P-404-4 (Details 1 and 2) and Quality Control Procedure QC-26. Verification can be done from direct field measurements and inspection of the survey data and field reports.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.8.7 Confirm Random Fill Materials Properties

INSPECTION TASK 404.8.7 Confirm Random Fill Materials Properties: This inspection task is to assure conformance with Specification S-404-1 (Section 3.3) and Quality Plan QP-404-1.

Random fill shall be inorganic soils with brush, roots, sod, or other perishable, unsuitable materials removed as practicable. The material shall have a maximum size of 12 inches (0.3 m). All material for use as random fill shall be approved by the QC officer.

The source for the random fill shall be from the Upper Club Mesa Borrow Area, the Burbank Quarry, or other State approved borrow area.

Verification will be by observation of the borrow source areas and material being placed on the clayey layer.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.8.8 Observe Random Fill Placement

INSPECTION TASK 404.8.8 Observe Random Fill Placement: This inspection task is to assure that the random fill placement will be done in accordance to Specification S-404.1 (Section 3.3.3) QP-404-1 (Section 2.5.1); QC-26, and as shown on Drawings P-404-3 and P-404-4 (Details 1 and 2).

The Random fill shall be placed in lifts not exceeding one foot (0.3 m) in thickness and compacted to at least 95 percent of the standard Proctor maximum density. The total thickness of the existing and newly placed random fill shall be at least 5 feet (1.5 m). The distribution and gradation of the materials shall be such that the fill shall as far as practicable be free of lenses, pockets, streaks, or layers of material differing substantially in texture, gradation or moisture content from the surrounding material. Successive loads of material shall be placed on the fill so as to produce the best practical distribution of material.

If the compacted surface of any layer of fill is too dry or both to bond properly with the layer of material to be placed there on, it shall be moistened and/or reworked with a harrow, scarifier, or other suitable equipment to a sufficient depth to provide relatively uniform moisture content and a satisfactory bonding surface before the next succeeding layer of earthfill is placed. If the compacted surface of any layer of earthfill in-place is too wet, due to precipitation, for proper compaction of the earthfill material to be placed thereon, it shall be removed; allowed to dry; or reworked with harrow, scarifier or other suitable equipment to reduce the moisture content to the required level. It shall then be recompacted to the earthfill requirements.

No material shall be placed in the random fill layer when either the materials, clayey soil layer, or the random fill on which material is to be placed is frozen or when ambient temperatures do not permit the placement or compaction of the materials to the specified density without developing frost lenses in the fill.

Verification will be by field observation and review of the QA/QC and surveyors reports.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.8.9 Observe Random Fill Compaction

INSPECTION TASK 404.8.9 Observe Random Fill Compaction: This inspection task is to assure that the random fill is compacted according to Specification S-404-1 (Section 3.3.3) which is to be done in intervals as specified in Section 3.5 (Frequency of Quality Control Test) and QP-404-1 (Section 2.5.3). Quality control tests will be performed in accordance to QC-1, QC-7 and QC-11.

Materials shall be placed in the random fill layer in continuous layers not more than 1 foot (0.3 m) in thickness after being compacted. The earthfill shall be compacted to at least 95 percent of the standard Proctor maximum density (ASTMD-698).

As far as practicable, the materials shall be brought to the proper moisture content before excavation or moisture shall be added to the material by sprinkling on the earthfill, and each layer of the random fill shall be conditioned so that the moisture content is uniform throughout the layer prior to and during compaction. The moisture content of the compacted random fill shall be within the limits of 3 percent dry and 3 percent wet of the standard optimum moisture content. Material that is too dry or too wet to permit bonding of layers during compaction shall be rejected and shall be reworked until the moisture content is acceptable. Reworking may include removal, reharrowing, reconditioning, rerolling, or combinations of these procedures.

Density control of compacted random fill shall be such that the compacted material represented by samples having a dry density less than 95 percent of its standard Proctor maximum density shall be rejected. Such rejected material shall be reworked as necessary and controlled until a dry density equal to or greater than 95 percent of its standard Proctor maximum density is obtained.

Verification will be done by observation and review of QA/QC reports.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.8.10 Check Random Fill Soil Tests

INSPECTION TASK 404.8.10 Check Random Fill Soil Tests: This task is to assure conformance with Specification S-404-1 which is to be done at a frequency interval as described in QP-404-1 (Section 2.5.3); and be done in accordance to QC-1, QC-2, QC-3, QC-4, QC-5, QC-7 and QC-9.

Random fill shall be in organic soils with brush, roots, sod or other perishable, unsuitable materials removed as practicable. The material shall have a maximum size of 12 inches (0.3 m) and shall be compacted to at least 95 percent of the standard Proctor maximum density. The moisture content shall be within the limits of 3 percent dry and 3 percent wet of the standard optimum moisture content. When material is too dry or too wet or is below 95% maximum dry density, the material will be reworked or recompacted and the test result will note a retest and the corrective technique. If more than one retest is done, it shall be noted. All tests shall be reported. The frequency of the tests shall be as follows:

Field density and moisture tests: not less than once per 500 cubic yards and at least one set per lift.

Laboratory standard Proctor compaction test: not less than once per 5000 cubic yards.

Verification will be done by checking the reports for location, lifts, test results and retests.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.8.11 Verify Random Fill Layer Thickness

INSPECTION TASK 404.8.11 Verify Random Fill Layer Thickness: This inspection task is to assure that the thickness is in accordance with Specification S-404-1; QC-16; Drawings P-404-3, P-404-4 (details 1 and 2). The thickness of the existing and newly placed random fill totals shall be at least 5 feet (1.5 m) as measured perpendicular to the slope.

Verification will be done by direct measurement, truck load count and from the survey and field reports.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.8.12 Confirm Riprap Cover Specifications

INSPECTION TASK 404.8.12 Confirm Riprap Cover Specifications: This inspection task is to assure that the riprap for the side slopes meets the requirements of Specification S-404-1 (Section 3.4); on Drawings P-404-3 and P-404-4, and in Quality Plan QP-404-1 (Section 2.5) and be prepared in accordance to QC-27. Riprap shall be type B which is a maximum size of 24 inches, a D_{50} size of 12 to 18 inches, and a D_{15} size of 3/4 inch to 3 inches. It shall be obtained from the Burbank Quarry or other approved Borrow Source and shall be placed over the random fill.

Confirmation shall be by visual observations, comparison to the reference stockpiles, and from measurements and calculations set forth in QP-27.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.8.13 Observe Riprap Cover Placement

INSPECTION TASK 404.8.13 Observe Riprap Cover Placement: | This task is to assure conformance to Specification S-404-1 (Section 3.4.2); Quality Plan QP-404-1, Drawings P-404-3, P-404-4 (Details 1 and 2); and Quality Control Procedure QC-11.

Riprap material shall be hauled to the Tailings Piles and end-dumped on the slopes in a manner to minimize segregation of the material. The material shall then be placed by dozer or excavator in a single lift. Placement of the rip rap shall avoid accumulation of rip rap sizes less than the minimum D_{50} size and nesting of the larger sized rocks. The riprap layer shall be constructed starting at the top of the rockfill berm to the top of the existing 3H:1V slopes of the Tailings Piles. The riprap layer shall have at least two passes by a D-7 Dozer or equivalent in order to key the rock for stability.

The riprap shall be brought to the rockfill buttress meeting the required gradation. Visual determination of the riprap gradation shall be made at the quarry from a standard pile at the frequencies specified in Part IV, Section 3.5 Frequency of Quality Control Tests.

Any accumulations of rip rap sizes less than the minimum D_{50} size shall be removed and blended with subsequent material to meet visual gradation standards.

The riprap layer is at least 0.6 meter (24 inches) thick.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.8.14 Observe Riprap Compaction

INSPECTION TASK 404.8.14 Observe Riprap Compaction: This inspection task is to assure proper compaction of the riprap and to meet Specification S-404-1 (Section 3.4.2); Quality Plan QP-404-1 (Section 2.5.1) and QC-11.

The riprap shall be placed in a single lift in such a manner as to minimize segregation, and shall receive at least two passes of a D-7 Dozer or equivalent in order to key the rock for stability. This shall be checked by direct observation, measuring lift thickness prior to and after compaction, and counting the number of passes of the D-7 Dozer.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.8.15 Verify Riprap Thickness

INSPECTION TASK 404.8.15 Verify Riprap Thickness: This inspection task is to assure conformance with Specification 5-404-1; Plan P-404-4; Quality Plan QP-404-1 and Quality Control Procedure QC-28.

The riprap layer after compaction must be at least 24 inches (0.6 m) thick. Verification can be done by observation, direct measurement and review of survey and construction truck load reports. The survey report should include location, dimensions, slopes and grades of placed materials. The quantity of material from truck loads as determined in QC-28 "Procedure for Determining Riprap Thickness for Reclamation Covers and Channels" can be used to compare the area filled. Reclamation of the truck factor will be required if the comparison is greater or lesser than 5 percent.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.9 RECLAMATION COVER FOR 5H:1V SLOPES AND TOP

INSPECTION TASK 404.9 RECLAMATION COVER FOR 5H:1V SLOPES AND TOP: This construction task is to be inspected according to the details presented in Sections 404.9.1 through 404.9.19. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-404-5 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

404.9.1 Confirm Placement of Interim Cover

INSPECTION TASK 404.9.1 Confirm Placement of Interim Cover: This construction task is to be done in accordance to Specification S-404-1 Part V Section 3.2.1 and the Quality Plan QP-404-1 Part II Section 2.6.1.

During reclamation construction, contaminated materials will be placed on the tops of the Tailings Piles from the existing crest on a 5H:1V slope to the maximum height for reclamation. The 5H:1V portion of the contaminated materials slope will require an interim cover to control surface drainage. The interim cover shall be comprised of material meeting the random fill specifications; i.e., inorganic soils with a maximum particle size of 12 inches (0.3 m). The cover shall be placed so that no more than 5 vertical feet of contaminated materials is exposed at any one time along the entire crest of the Tailings Piles. It shall be placed in a 1-foot compacted lift and compacted by at least two passes of a D-7 Dozer or equivalent.

Verification will be done by observation and measurement.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.9.2 Confirm Compaction of Interim Cover

INSPECTION TASK 404.9.2 Confirm Compaction of Interim Cover: This construction task shall be done in accordance to Specification S-404-1 Part V and meet quality control procedures QC-1, QC-2, QC-4 and QC-7.

Compaction control of the interim cover material shall be conducted by visual observation of the fill placement. If the material is to be utilized as random fill material within the final reclamation cover, moisture and density control requirements shall be as presented in Part V Section 2.2 Random Fill. The interim cover shall be compacted to 95 percent of standard Proctor maximum density. The moisture content of the compacted random fill shall be within the limits of 3 percent dry and 3 percent wet of the standard optimum moisture content. Material that is too dry or too wet to permit bonding of layers during compaction shall be rejected and shall be reworked until the moisture content is acceptable. Reworking may include removal, reharrowing, reconditioning, rerolling, or combinations of these procedures.

Density control of compacted random fill shall be such that the compacted material represented by samples having a dry density less than 95 percent of its standard Proctor maximum density shall be rejected. Such rejected material shall be reworked as necessary and rerolled until a dry density equal to or greater than 95 percent of its standard Proctor maximum density is obtained.

To determine that the moisture content and dry density requirements of the compacted fill are being met, field and laboratory tests shall be made at specified intervals on samples taken from the compacted fills as specified in Part V Section 2.4 Frequency of Quality Control Tests.

Field density and moisture tests: not less than once per 500 cubic yards and at least one set per lift.

Gradations and Atterberg limits: not less than once per 5000 cubic yards.

Verification will be done by observation and QA/QC reports.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.9.3 Document Thickness of Interim Cover

INSPECTION TASK 404.9.3 Document Thickness of Interim Cover: This construction task shall be done in accordance to Specification S-404-1 Part II Section 2.6.1 and Drawings P-404-3 and P-404-4 and Quality Control Procedures QC-11 and QC-26.

The interim cover material shall be considered random fill material as part of the reclamation cover if the material is compacted to the specified density for random fill as presented in Part V Section 2.2 Random Fill Cover. As with the existing random fill placed on the 3H:1V tailings slopes, the thickness of the random fill layer placed above the clayey soil layer in the cover shall be reduced by the thickness of the interim soil cover which meets random fill specifications. In no case shall the final reclamation cover inclusive of the interim cover material meeting random fill specifications be less than 10.0 feet (3.0 m).

Verification shall be by observation; measurement; review of survey reports for location, dimensions, slopes and grades; and checking calculated quantities vs truck loads.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.9.4 Confirm Clayey Soil Material Properties

INSPECTION TASK 404.9.4 Confirm Clayey Soil Material Properties: Inspection of the material properties used in the radon barrier will be conducted to assure conformance with Specifications S-404-1 (Section 3.2) Quality Plan in QP-404-1 (Section 2.5) and Drawings P-404-3 and P-404-4 (Details 1 and 2). The clayey soils shall be inorganic soils free of brush, roots, sod or other perishable or unsuitable material. It will have a maximum size of QC-6 12 inches (0.3 m) with at least 40% passing the No. 200 sieve QC-5, liquid limit of at least 20% and a minimum plasticity index of 10%. Clay materials that do not meet the Atterberg limit criteria may be used provided the material has diffusion coefficients and emanation coefficients that will not produce radon emanation rates above acceptable levels. All material intended for use as a clayey soil shall be approved by the QC officer.

The sources for the clayey soil shall be from the Upper Club Mesa Borrow area, Burbank Quarry or other state approved borrow source. Verification will be by direct observation of the clayey materials (looking for oversize material, insufficient clay) and review of QA/QC reports.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.9.5 Observe Clayey Soil Placement

INSPECTION TASK 404.9.5 Observe Clayey Soil Placement: This inspection task is to assure compliance with QC-11, QP-404-1 (Section 2.5.1) Specifications S-404-1 (Section 3.2.3) and Drawings P-404-3 and P-404-4 (Details 1 and 2).

A summary of these documents is as follows: the clayey soil is to be placed in horizontal lifts of 1 foot or less in thickness and compacted to at least 95% of standard proctor maximum density. The compacted thickness of the entire clayey soil layer must be at least 36 inches (0.9 m). The distribution and gradation of the materials throughout the clay soil layer shall be such that the fill as far as practicable be free of lenses, pockets, streaks or layers of material differing substantially in texture, gradation or moisture content from the surrounding material. Successive loads of material shall be placed on the fill so as to produce the best practiced distribution of material.

The layers shall be constructed in sequences such that no single layer of clay soil material is allowed to dry below the specified lower placement moisture content. If the compacted surface of any layer of fill is too dry or smooth to bond properly with the layer of material to be placed thereon, it shall be moistened and/or reworked with a harrow, scarifier or other suitable equipment to a sufficient depth to provide relatively uniform moisture content and a satisfactory bonding surface before the next succeeding layer of earth fill is placed. If the compacted surface of any layer in place is too wet, due to precipitation, for proper compaction of the earth fill material to be placed thereon, it shall be removed, allowed to dry or reworked with harrow, scarifier or other suitable equipment to reduce the moisture content to the required level. It shall then be recompacted to the clayey soil requirements. If sponginess is observed as the trucks are driving across, the material may be too wet and may have to be disced or remixed.

No material shall be placed in the clay soil layer when either the materials, existing random fill or the clay soil layer on which material is to be placed is frozen or when ambient temperatures do not permit the placement or compaction of the materials to the specified density without development frost lenses in the fill.

Verification will be by field observation and review of the QA/QC and surveyors reports to assure correct location, dimensions, slopes and grades; quantities of soils from load counts; and fill placement, thickness of fill lifts by measuring, uniformity of soils, moisture and compactive effort.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.9.6 Observe Clayey Soil Compaction

INSPECTION TASK 404.9.6 Observe Clayey Soil Compaction: This inspection task is to assure compliance with Specifications S-404-1 (Section 3.2.4) and QP-404-1 (Section 2.5.3) which shall be done at intervals as specified in Part IV Section 3.5 Frequency of Quality Control Tests. Quality control tests will be performed in accordance with QC-1, QC-7 and QC-11.

The clay soils shall be compacted to at least 95 percent of the standard proctor maximum density (ASTMD-698). Materials shall be placed in the clayey soil layer in continuous layers not more than 1 foot in thickness after being compacted. The moisture content of the clay soil shall be within the limits of 3 percent dry and 2 percent wet of the standard optimum moisture content. Material that is not within the specified limits after compaction shall be rejected and shall be reworked until the moisture content is between the specified limits. Reworking may include removal, reharrowing, reconditioning, rerolling or combinations of these procedures.

Density control of compacted clay soil shall be such that the compacted material represented by samples having a dry density less than 95 percent of its standard proctor maximum density shall be rejected. Such rejected material shall be reworked as necessary and rerolled until a dry density equal to or greater than 95 percent of its standard proctor maximum density is obtained.

Verification will be done by observation and review of QA/QC reports.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.9.7 Check Clayey Soil Tests

INSPECTION TASK 404.9.7 Check Clayey Soil Tests: This inspection task is to assure conformance to Specification S-404-1 which is to be done at a frequency interval as described in QP 404-1 (Section 2.5.3) and be done in accordance to QC-1, QC-2, QC-3, QC-4, QC-5, QC-7 and QC-9.

Clayey soils shall be in organic soils with maximum size of 12" with at least 40% passing the No. 200 sieve, liquid limit of at least 20% and a minimum plasticity index of 10%. Material shall be placed and compacted in maximum 12 inches lifts to at least 95% of the maximum standard proctor dry density at a moisture content of between 3% below to 2% above optimum moisture content. When material is too dry or too wet or is below 95% maximum dry density, the material will be reworked or recompacted and the test result will note a retest and the corrective techniques. If more than one retest is done, it shall also be noted. All tests should be reported.

The frequency of the tests shall be as follows:

Field density and moisture tests: not less than once per 500 cubic yards and at least one set per lift.

Gradation and Atterberg Limits: not less than once per 1000 cubic yards.

Laboratory standard Proctor compaction test: not less than once per 5000 cubic yards.

When the nuclear density method is used to determine compaction and moisture tests, other tests such as sand cone will be done as a check for accuracy at least once per week.

Verification will be done by checking the reports for location, lifts, test results, and retests.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.9.8 Verify Clayey Soil Layer Thickness

INSPECTION TASK 404.9.8 Verify Clayey Soil Layer Thickness: This inspection task is to assure a minimum clayey soil thickness of 36 inches (0.9 m) measured perpendicular to the slope for conformance with Specification S-404-1, Quality Plan, QP-404-1, Drawings P-404-3 and P-404-4 (Details 1 and 2) and Quality Control Procedure QC-26. Verification can be done from direct field measurements and inspection of the survey data and field reports.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.9.9 Confirm Random Fill Material Properties

INSPECTION TASK 404.9.9 Confirm Random Fill Material Properties: This inspection task is to assure conformance with Specification S-404-1 (Section 3.3) and Quality Plan QP-404-1.

Random fill shall be inorganic soils with brush, roots, sod, or other perishable, unsuitable materials removed as practicable. The material shall have a maximum size of 12 inches (0.3 m). All material for use as random fill shall be approved by the QC officer.

The source for the random fill shall be from the Upper Club Mesa Borrow Area, the Burbank Quarry, or other State approved borrow area.

Verification will be by observation of the borrow source areas and material being placed on the clayey layer.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.9.10 Observe Random Fill Placement

INSPECTION TASK 404.9.10 Observe Random Fill Placement: This inspection task is to assure that the random fill placement will be done in accordance to Specification S-404.1 (Section 3.3.3) QP-404-1 (Section 2.5.1); QC-26, and as shown on Drawings P-404-3 and P-404-4 (Details 1 and 2).

The Random fill shall be placed in lifts not exceeding one foot in thickness and compacted to at least 95 percent of the standard Proctor maximum density. The total thickness of the existing and newly placed random fill shall be at least 5 feet (1.5 m). The distribution and gradation of the

materials shall be such that the fill shall as far as practicable be free of lenses, pockets, streaks, or layers of material differing substantially in texture, gradation or moisture content from the surrounding material. Successive loads of material shall be placed on the fill so as to produce the best practical distribution of material.

If the compacted surface of any layer of fill is too dry or both to bond properly with the layer of material to be placed there on, it shall be moistened and/or reworked with a harrow, scarifier, or other suitable equipment to a sufficient depth to provide relatively uniform moisture content and a satisfactory bonding surface before the next succeeding layer of earthfill is placed. If the compacted surface of any layer of earthfill in-place is too wet, due to precipitation, for proper compaction of the earthfill material to be placed thereon, it shall be removed; allowed to dry; or reworked with harrow, scarifier or other suitable equipment to reduce the moisture content to the required level. It shall then be recompacted to the earthfill requirements.

No material shall be placed in the random fill layer when either the materials, clayey soil layer, or the random fill on which material is to be placed is frozen or when ambient temperatures do not permit the placement or compaction of the materials to the specified density without developing frost lenses in the fill.

Verification will be by field observation and review of the QA/QC and surveyors reports.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.9.11 Observe Random Fill Compaction

INSPECTION TASK 404.9.11 Observe Random Fill Compaction: This inspection task is to assure that the random fill is compacted according to Specification S-404-1 (Section 3.3.3) which is to be done in intervals as specified in Section 3.5 (Frequency of Quality Control Test) and QP-404-1 (Section 2.5.3). Quality control tests will be performed in accordance to QC-1, QC-7 and QC-11.

Materials shall be placed in the random fill layer in continuous layers not more than 1 foot (0.3 m) in thickness after being compacted. The earthfill shall be compacted to at least 95 percent of the standard Proctor maximum density (ASTMD-698).

As far as practicable, the materials shall be brought to the proper moisture content before excavation or moisture shall be added to the material by sprinkling on the earthfill, and each layer of the random fill shall be conditioned so that the moisture content is uniform throughout the layer prior to and during compaction. The moisture content of the compacted random fill shall be within the limits of 3 percent dry and 3 percent wet of the standard optimum moisture content. Material that is too dry or too wet to permit bonding of layers during compaction shall be rejected and shall be reworked until the moisture content is acceptable. Reworking may include removal, reharrowing, reconditioning, rerolling, or combinations of these procedures.

Density control of compacted random fill shall be such that the compacted material represented by samples having a dry density less than 95 percent of its standard Proctor maximum density shall be rejected. Such rejected material shall be reworked as necessary and controlled until a dry density equal to or greater than 95 percent of its standard Proctor maximum density is obtained.

Verification will be done by observation and review of QA/QC reports.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.9.12 Check Random Fill Soils Test

INSPECTION TASK 404.9.12 Check Random Fill Soils Test: This task is to assure conformance with Specification S-404-1 which is to be done at a frequency interval as described in QP-404-1 (Section 2.5.3); and be done in accordance to QC-1, QC-2, QC-3, QC-4, QC-5, QC-7 and QC-9.

Random fill shall be in organic soils with brush, roots, sod or other perishable, unsuitable materials removed as practicable. The material shall have a maximum size of 12 inches (0.3 m) and shall be compacted to at least 95 percent of the standard Proctor maximum density. The moisture content shall be within the limits of 3 percent dry and 3 percent wet of the standard optimum moisture content. When material is too dry or too wet or is below 95% maximum dry density, the material will be reworked or recompacted and the test result will note a retest and the corrective technique. If more than one retest is done, it shall be noted. All tests shall be reported. The frequency of the tests shall be as follows:

Field density and moisture tests: not less than once per 500 cubic yards and at least one set per lift.

Laboratory standard Proctor compaction test: not less than once per 5000 cubic yards.

Verification will be done by checking the reports for location, lifts, test results and retests.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.9.13 Verify Random Fill Thickness

INSPECTION TASK 404.9.13 Verify Random Fill Thickness: This inspection task is to assure that the thickness is in accordance with Specification S-404-1; QC-16; Drawings P-404-3, P-404-4 (details 1 and 2). The thickness of the existing and newly placed random fill totals shall be at least 6.0 feet (1.8 m) as measured perpendicular to the slope.

Verification will be done by direct measurement, truck load count and from the survey and field reports.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.9.14 Analyze Tailings Pile Settlement

INSPECTION TASK 404.9.14 Analyze Tailings Pile Settlement: This task shall analyze the tailings pile settlement in accordance to Specification S-404-2 and P-404-7 and Quality Plan QP-404-1 Part IV Section 6.

Monitoring devices such as piezometers, erosion monuments, and surface movement monuments shall be constructed as shown on P-404-7 and be located as shown on P-404-1 and P-404-2. The monitoring data shall be evaluated periodically in the context of design expectations and performance predictions. The evaluation shall be comprehensive and shall include discussion of the interrelationship between the monitoring data and the predicted performance of the Tailings Piles with respect to short and long term pile stability, cover integrity, load/settlement, dewatering and seepage. Based on comprehensive assessment, "action" and "concern" levels shall be specified in each evaluation. "Concern" level shall mean that monitoring data is reflecting Tailings Pile performance which is grossly inconsistent with expectations and may lead to environmental damage. "Action" level means action must be taken immediately to mitigate the problem reflected by the monitor data. Contingencies shall be included in this evaluation where appropriate.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.9.15 Approve and Verify Random Fill Regrading

INSPECTION TASK 404.9.15 Approve and Verify Random Fill Regrading: This construction task consists of verifying lines and grades as shown on Drawings P-404-1 and P-404-2. If settlement has occurred, the slopes will be brought to design elevations.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.9.16 Confirm Riprap Specifications

INSPECTION TASK 404.9.16 Confirm Riprap Specifications: This inspection task is to assure that the riprap for the side slopes meets the requirements of Specification S-404-1 (Section 3.4); on Drawings P-404-3 and P-404-4, and in Quality Plan QP-404-1 (Section 2.5) and be prepared in accordance to QC-27. Riprap shall be type B which is a maximum size of 24 inches, a D_{50} size of 12 to 18 inches, and a D_{15} size of 3/4 inch to 3 inches. It shall be obtained from the Burbank Quarry or other approved Borrow Source and shall be placed over the random fill.

Confirmation shall be by visual observations, comparison to the reference stockpiles, and from measurements and calculations set forth in QP-27.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.9.17 Observe Riprap Placement

INSPECTION TASK 404.9.17 Observe Riprap Placement: This task is to assure conformance to Specification S-404-1 (Section 3.4.2); Quality Plan QP-404-1, Drawings P-404-3, P-404-4 (Details 1 and 2); and Quality Control Procedure QC-11.

Riprap material shall be hauled to the Tailings Piles and end-dumped on the slopes in a manner to minimize segregation of the material. The material shall then be placed by dozer or excavator in a single lift. Placement of the rip rap shall avoid accumulation of rip rap sizes less than the minimum D_{50} size and nesting of the larger sized rocks. The riprap layer shall be constructed starting at the top of the rockfill berm to the top of the existing 3H:1V slopes of the Tailings Piles. The riprap layer shall have at least two passes by a D-7 Dozer or equivalent in order to key the rock for stability.

The riprap shall be brought to the rockfill buttress meeting the required gradation. Visual determination of the riprap gradation shall be made at the quarry from a standard pile at the frequencies specified in Part IV, Section 3.5 Frequency of Quality Control Tests.

Any accumulations of rip rap sizes less than the minimum D_{50} size shall be removed and blended with subsequent material to meet visual gradation standards.

The riprap layer is at least 0.6 meter (24 inches) thick.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.9.18 Observe Riprap Compaction

INSPECTION TASK 404.9.18 Observe Riprap Compaction: This inspection task is to assure proper compaction of the riprap and to meet Specification S-404-1 (Section 3.4.2); Quality Plan QP-404-1 (Section 2.5.1) and QC-11.

The riprap shall be placed in a single lift in such a manner as to minimize segregation, and shall receive at least two passes of a D-7 Dozer or equivalent in order to key the rock for stability. This shall be checked by direct observation, measuring lift thickness prior to and after compaction, and counting the number of passes of the D-7 Dozer.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.9.19 Verify Riprap Thickness

INSPECTION TASK 404.9.19 Verify Riprap Thickness: This inspection task is to assure conformance with Specification S-404-1; Plan P-404-4; Quality Plan QP-404-1 and Quality Control Procedure QC-28.

The riprap layer after compaction must be at least one foot (0.3 m) thick. Verification can be done by observation, direct measurement and review of survey and construction truck load reports. The survey report should include location, dimensions, slopes and grades of placed materials. The quantity of material from truck loads as determined in QC-28 "Procedure for Determining Riprap Thickness for Reclamation Covers and Channels" can be used to compare the area filled. Reclamation of the truck factor will be required if the comparison is greater or lesser than 5 percent.

INSPECTION NOTES: Date_____, Inspector, _____.

404.10 SURFACE RUNOFF CONTROL FACILITIES

INSPECTION TASK 404.10 SURFACE RUNOFF CONTROL FACILITIES: This construction task is to be inspected according to the details presented in Sections 404.10.1 through 404.10.8. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-404-6 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

404.10.1 Check Ditch Locations 7, 8, and 9

INSPECTION TASK 404.10.1 Check Ditch Locations 7, 8, and 9: This construction task is to be inspected for conformance with Drawings P-404-1 and P-404-2. Note any significant changes in ditch locations and assure that such changes are noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

404.10.2 Measure Ditch Dimensions and Gradients

INSPECTION TASK 404.10.2 Measure Ditch Dimensions and Gradients: Measure the width, depth, sideslope and gradient of the ditch(es) to assure conformance with the details on Drawing P-404-5. Note any significant changes and assure that such changes are noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

404.10.3 Calculate Ditch Capacity

INSPECTION TASK 404.10.3 Calculate Ditch Capacity: Using the ditch measurements, calculate or estimate the ditch capacity. Use the following equation Q=149/n R(2/3) S(1/2) A. Assure that capacity specifications are met in accordance with Specification S-404-1.

INSPECTION NOTES: Date_____, Inspector, _____.

404.10.4 Check Riprap Sections

INSPECTION TASK 404.10.4 Check Riprap Sections: This construction task shall confirm that riprap has been placed in accordance to Specification S-404-1 Part V and as shown on Drawing P-404-5. Riprap shall be Type C.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.10.5 Check Locations of Channels A and B

INSPECTION TASK 404.10.5 Check Locations of Channels A and B: This construction task is to be inspected for conformance with Drawings P-404-1 and P-404-2. Note any significant changes in ditch locations and assure that such changes are noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.10.6 Measure Dimensions and Gradients of Channels A and B

INSPECTION TASK 404.10.6 Measure Dimensions and Gradients of Channels A and B: Measure the width, depth sideslope and gradient of the ditch(es) to assure conformance with the details on Drawing P-404-6. Note any significant changes and assure that such changes are noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.10.7 Calculate Capacity of Channels A and B

INSPECTION TASK 404.10.7 Calculate Capacity of Channels A and B: Using the ditch measurements, calculate or estimate the ditch capacity. Use the following equation $Q = 1.49/n\ R(2/3)\ S(1/2)\ A$. Assure that capacity specifications are met in accordance with Specification S-404-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.10.8 Check Riprap Sections of Channels

INSPECTION TASK 404.10.8 Check Riprap Sections of Channels: This construction task consists of verifying that riprap channel sections conform to Drawings P-404-5 and P-404-6. Actual sections may vary based on materials encountered during excavation. Variations should be noted and recorded on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.11 MONITORING DEVICES

INSPECTION TASK 404.11 MONITORING DEVICES: This construction task is to be inspected according to the details presented in Sections 404.11.1 through 404.11.5. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-404-7 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

404.11.1 Confirm Maintenance of Existing Piezometers

INSPECTION TASK 404.11.1 Confirm Maintenance of Existing Piezometers: This construction task will confirm where piezometers are located or Tailings Piles 2 and 3. Details for maintaining existing piezometers are presented on Drawing P-404-7. Verification will be performed by visual observation that they are still in place; review of previous results and comparison with recent results. If there is no data reported, the quality control officer will be questioned as to the reason and if the piezometer is damaged, it shall be replaced as near as possible to its original location and depth.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.11.2 Observe and Verify Construction of New Piezometers

INSPECTION TASK 404.11.2 Observe and Verify Construction of New Piezometers: This construction task will verify that piezometers are installed in the Tailings Piles 2 and 3 and be located as shown on Drawings P-404-1 and P-404-2. The purpose of these additional piezometers at the crest of the rockfill buttress, on the embankment face, and on the retirement crest is to monitor the behavior of the Tailings Piles during and after reclamation. They shall be installed as shown on Drawings P-404-7. Depth of the piezometer shall be determined in the field during installation.

Piezometers placed on top of the Tailings Piles shall be installed to sufficient depths to monitor phreatic conditions within the tailings slimes, as far as practicable. Due to the nature of the contaminated materials to be placed on top of the Tailings Piles, installation of piezometers on top of the Tailings Piles may not be feasible at some locations. The final location of these piezometers will be determined in the field after reclamation construction is complete.

Data collected from the piezometers will be used to aid in estimating Tailings Pile settlement (consolidation) and in determining when the toe drain system can be abandoned. Additionally, the monitoring of the piezometers should be used to determine if the Remedial Plan is operating as proposed. When all necessary information has been obtained, the piezometers will be properly plugged with a bentonite slurry.

Monitoring of Piezometers shall be done in accordance to Quality Control Procedure QC-14.

INSPECTION NOTES: Date_____, Inspector, _____.

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404.11.3 Observe and Verify Construction of Surface Movement Monuments
INSPECTION TASK 404.11.3 Observe and Verify Construction of Surface Movement Monuments: This construction task will verify that surface movement monuments are constructed in accordance to Specification S-404-1 Part IV Section 3, Drawings P-404-1, P-404-2, and P-404-7; and Quality Procedure QC-15.

The location of the Surface Movement Monuments shall be at the approximate locations shown on Drawings P-404-1 and P-404-2. The final locations shall be determined in the field at completion of reclamation. Surface Movement Monuments shall be constructed to the dimensions shown on P-404-7. They should not be placed near traffic areas.

Data collected from the Surface Movement Monuments will be used to determine the integrity and effectiveness of the reclamation cover by ascertaining the amount of settlement, erosion, and embankment movement.

Verification will be by observation as to location and condition. Review of QC and survey reports will aid in verifying the monuments. If monuments are damaged or destroyed, they should be replaced as close to the existing monument after determining the reason or cause of the damage.

INSPECTION NOTES: Date_____, Inspector, _____.
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404.11.4 Observe and Verify Construction of Erosion Monuments
INSPECTION TASK 404.11.4 Observe and Verify Construction of Erosion Monuments: This construction task will verify that Erosion Monuments are constructed in accordance to Specification S-404-1 Part VI Section 2; Quality Plan QP-404-1 Section IV Section 4; and Drawings P-404-1, P-404-2, and P-404-7; and Quality Control Procedure QC 13.

The Erosion Monuments shall be used to determine the amount and rate of gully erosion and cliff retreat in the Tailings Piles Area. The location of the Erosion Monuments shall be approximately as shown on P-404-1 and P-404-2. The final locations shall be determined in the field based on access and site conditions. The Erosion Monuments shall be constructed to the size and dimensions presented on P-404-7.

These monuments shall be surveyed and their location described. Additionally, the proximity to the cliff edge and other pertinent observations shall be described, recorded and photographed. During the long term monitoring program, the monuments shall be observed visually and surveyed. From these observations, the rate of cliff retreat shall be determined and potential impact on the integrity of the disposal area assessed.

Verification shall be by observation and review of the survey reports.

INSPECTION NOTES: Date_____, Inspector, _____.
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404.11.5 Verify Aerial Photography on Completion of Cover

INSPECTION TASK 404.11.5 Verify Aerial Photography on Completion of Cover: After completion of the cover, aerial photographs shall be used as required to aid the Performance Evaluation.

INSPECTION NOTES: Date_____, Inspector, _____.

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406 CLUB MESA AREA

INSPECTION TASK 406 CLUB MESA AREA: This project area is to be inspected according to the details presented in Sections 406.5 through 406.8. Refer to those sections for specific details. After approval of these sections, the Final Construction Report is to be reviewed and approval noted in the Document Control Log (DOCLOG).

406.5 SURFACE RUNOFF CONTROL FACILITIES

INSPECTION TASK 406.5 SURFACE RUNOFF CONTROL FACILITIES: This construction task is to be inspected according to the details presented in Sections 406.5.1 through 406.5.14. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-406-1 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

406.5.1 Check Ditch Location(s)

INSPECTION TASK 406.5.1 Check Ditch Location(s): This construction task is to be inspected for conformance with Drawing P-406.5.1. Note any significant changes in ditch locations and assure that such changes are noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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406.5.2 Measure Ditch Dimensions and Gradients

INSPECTION TASK 406.5.2 Measure Ditch Dimensions and Gradients: Measure the width, depth sideslope and gradient of the ditch(es) to assure conformance with the details on Drawing P-406-2. Note any significant changes and assure that such changes are noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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406.5.3 Calculate Ditch Capacity

INSPECTION TASK 406.5.3 Calculate Ditch Capacity: Using the ditch measurements, calculate or estimate the ditch capacity. Use the following equation Q= 1.49/n R(2/3) S(1/2) A. Assure that capacity specifications are met in accordance with Specification S-406-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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406.5.4 Observe/Verify Construction of Sediment Basin

INSPECTION TASK 406.5.4 Observe/Verify Construction of Sediment Basin: Determine that existing Pond 9 is modified according to the dimensions shown in Drawings P-406-1 and P-406-3.

INSPECTION NOTES: Date_____, Inspector, _____.

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406.5.5 Verify Installation of HDPE Liner on Spillway

INSPECTION TASK 406.5.5 Verify Installation of HDPE Liner on Spillway: Determine that the liner is placed in accordance with Drawings P-406-1 and P-406-3. Liner material will be inspected to determine that it meets the thickness and quality requirements in Specification S-406-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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406.5.6 Check Soils Tests of Placed Fill in Basin

INSPECTION TASK 406.5.6 Check Soils Tests of Placed Fill in Basin: Review geotechnical test results to determine if fill meets the requirements of Specification S-406-1, for compaction, moisture content and size.

INSPECTION NOTES: Date_____, Inspector, _____.

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406.5.7 Verify Size and Location of Spillway Riprap

INSPECTION TASK 406.5.7 Verify Size and Location of Spillway Riprap: This construction task is to be inspected for conformance with Drawing P-406-1 and Specification S-406-1. Note any significant changes in locations and assure that such changes are noted on the field office drawings. Assure riprap size is adequate.

INSPECTION NOTES: Date_____, Inspector, _____.

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406.5.8 Observe/Verify Construction of Runoff Control Pond (RC-5)

INSPECTION TASK 406.5.8 Observe/Verify Construction of Runoff Control Pond (RC-5): This construction task is to be inspected for conformance with Drawing P-406-2. Note any significant changes in locations and dimensions and assure that such changes are noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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406.5.9 Measure Pond Dimensions

INSPECTION TASK 406.5.9 Measure Pond Dimensions: Measure the width, depth, and sideslope of the pond to assure conformance with the details on Drawings P-406-2. Note any significant changes and assure that such changes are noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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406.5.10 Calculate Capacity of RC-5

INSPECTION TASK 406.5.10 Calculate Capacity of RC-5: Using the pond measurements, calculate ditch capacity. Assure that capacity specifications are met in accordance with Specification S-406-1 for the 10 year 24 hour event.

INSPECTION NOTES: Date_____, Inspector, _____.

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406.5.11 Verify Dimensions of the Overflow Structure

INSPECTION TASK 406.5.11 Verify the Dimensions of the Overflow Structure: Determine that the width, depth and other dimensions are in conformance with the details on Drawing P-406-3. Note any significant changes and assure that the structure is properly sized in accordance with Specification S-406-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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406.5.12 Observe Runoff Control Pond Earthwork

INSPECTION TASK 406.5.12 Observe Runoff Control Pond Earthwork: Observe and verify that all earthwork meets the in situ specifications for compaction, moisture content and material size in accordance with Specification S-406-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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406.5.13 Check Soils Tests on RC-5 Fill Material

INSPECTION TASK 406.5.13 Check Soils Tests on RC-5 Fill Material: Review laboratory tests and analyses to determine that proper procedures for optimum moisture content, size analysis and Proctor Density were performed. Review laboratory calculations and worksheets.

INSPECTION NOTES: Date_____, Inspector, _____.

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406.5.14 Verify Installation of the Pump and Piping

INSPECTION TASK 406.5.14 Verify Installation of the Pump and Piping: Determine that the pump and piping in RC-5 are installed in accordance with Specification S-406-1. Note any field changes.

INSPECTION NOTES: Date_____, Inspector, _____.

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406.6 CLEANUP OF CRYSTALS, SLUDGES AND CONTAMINATED SOILS

INSPECTION TASK 406.6 CLEANUP OF CRYSTALS, SLUDGES AND CONTAMINATED SOILS: This construction task is to be inspected according to the details presented in Sections 406.6.1 through 406.6.7. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-406-2 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

406.6.1 Verify Pumping of all Liquids to the Club Ranch Ponds

INSPECTION TASK 406.6.1 Verify Pumping of all Liquids to the Club Ranch Ponds: Determine that all liquids in the Club Mesa Ponds have been transported to the Club Ranch Ponds prior to crystal removal.

INSPECTION NOTES: Date_____, Inspector, _____.

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406.6.2 Review/Approve the Site Characterization Survey

INSPECTION TASK 406.6.2 Review/Approve the Site Characterization Survey: The soil characterization survey is to be reviewed for compliance with Specifications S-SCP-1 and S-406-1. Assure that scintillometer measurements have been made and properly recorded.

INSPECTION NOTES: Date_____, Inspector, _____.

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406.6.3 Observe/Verify Removal of Sludges, Crystals and Soil

INSPECTION TASK 406.6.3 Observe/Verify Removal of Sludges, Crystals and Soil: Verify that any contaminated soils or other materials have been removed from the Club Mesa area. Review scintillometer surveys and other available information.

INSPECTION NOTES: Date_____, Inspector, _____.

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406.6.4 Observe Placement of Raffinate Crystals in Burbank Quarry

INSPECTION TASK 406.6.4 Observe Placement of Raffinate Crystals in Burbank Quarry: This construction task will be observed to confirm that the contaminated crystals are placed in cells at the Burbank Quarry according to Specification S-423-1. See Section 423.6 for specific inspection tasks.

INSPECTION NOTES: Date_____, Inspector, _____.

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406.6.5 Observe Placement of Sludges and Soils on Tailings Piles

INSPECTION TASK 406.6.5 Observe Placement of Sludges and Soils on Tailings Piles: This construction task will be observed to confirm that the contaminated soils and sludges are placed in the Tailings Piles according to Specification S-404-1. See Section 404.6 for specific inspection tasks.

INSPECTION NOTES: Date_____, Inspector, _____.

406.6.6 Observe Excavation of Contaminated Materials in Subsidence Areas
INSPECTION TASK 406.6.6 Observe Excavation of Contaminated Materials in Subsidence Areas: Verify that any contaminated soils or other materials have been removed from the subsided areas. Review scintillometer surveys and other available information. Safety considerations will govern materials removal.

INSPECTION NOTES: Date_____, Inspector, _____.

406.6.7 Verify Soils Cleanup Confirmation Investigation
INSPECTION TASK 406.6.7 Verify Soils Cleanup Confirmation Survey: The cleanup confirmation investigation will be reviewed for conformance with Specification S-SCP-1. Scintillometer measurements, soil sample results and survey procedures will be reviewed. The results must meet the appropriate criteria in Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

406.7 SUBSIDED AREAS, SHAFTS, PORTALS
INSPECTION TASK 406.7 SUBSIDED AREAS, SHAFTS, PORTALS: This construction task is to be inspected according to the details presented in Sections 406.7.1 through 406.7.6. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-406-3 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

406.7.1 Observe/Verify Closure of Shafts and Portals
INSPECTION TASK 406.7.1 Observe/Verify Closure of Shafts and Portals: Determine that uncontaminated material is used to fill shafts and portals in accordance with the requirements in Specification S-406-1 and Drawing P-406-3. Determine that all shafts are closed.

INSPECTION NOTES: Date_____, Inspector, _____.

406.7.2 Observe/Verify Backfilling of Subsided Areas
INSPECTION TASK 406.7.2 Observe/Verify Backfilling of Subsided Areas: Determine that uncontaminated material is used to fill subsided areas in accordance with the requirements in Specification S-406-1 and Drawing P-406-3. Determine that all shafts are closed.

INSPECTION NOTES: Date_____, Inspector, _____.

406.8 FINAL RECLAMATION

INSPECTION TASK 406.8 FINAL RECLAMATION: This construction task is to be inspected according to the details presented in Sections 406.8.1 through 406.8.4. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-406-4 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

406.8.1 Verify Removal of Construction Materials

INSPECTION TASK 406.8.1 Verify Removal of Construction Materials: Inspect the site to determine that all pipes liner material and other construction materials have been removed from the site. Determine that all contaminated material has been disposed of on the tailings piles or in the Burbank Quarry.

INSPECTION NOTES: Date_____, Inspector, _____.

406.8.2 Observe/Verify Final Site Grading

INSPECTION TASK 406.8.2 Observe/Verify Final Site Grading: Inspect the site to determine that the site grading conforms to the approximate lines and grades shown on Drawings P-406-1 and P-406-2. Verify that material is uncontaminated and that final slopes are less than 3H:1V.

INSPECTION NOTES: Date_____, Inspector, _____.

406.8.3 Observe/Verify Random Fill Cover

INSPECTION TASK 406.8.3 Observe/Verify Random Fill Cover: Inspect the site to determine that the random fill cover conforms to the location, thickness, and gradation requirements of Specification S-406-1 and Drawings P-406-1 and P-406-2. Verify that material is uncontaminated and that final slopes are less than 3H:1V.

INSPECTION NOTES: Date_____, Inspector, _____.

406.8.4 Observe/Verify Site Revegetation

INSPECTION TASK 406.8.4 Observe/Verify Site Revegetation: Inspect the site to determine that all disturbed areas have been reseeded with the seed mixture, application method and application rate required in Specification S-406-1.

INSPECTION NOTES: Date_____, Inspector, _____.

413 MILL AREAS

INSPECTION TASK 413 MILL AREAS: This project area is to be inspected according to the details presented in Sections 413.5 through 413.10. Refer to those sections for specific details. After approval of these sections, the Final Construction Report is to be reviewed and approval noted in the Document Control Log (DOCLOG).

413.5 HEAP LEACH SITE

INSPECTION TASK 413.5 HEAP LEACH SITE: This construction task is to be inspected according to the details presented in Sections 413.5.1 through 413.5.4. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-413-1 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

413.5.1 Verify Removal of Ore

INSPECTION TASK 413.5.1 Verify Removal of Ore: Verify that the uranium ores have been removed from the ore stockpile area. Review scintillometer surveys and other available information.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.5.2 Verify Contaminated Material Removal

INSPECTION TASK 413.5.2 Verify Contaminated Material Removal: This construction task will verify the undertaking of a soils confirmation investigation to conform that all contaminated soils have been removed according to Specification S-SCP-1, S-413-1 and Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.5.3 Observe Contaminated Material Placement

INSPECTION TASK 413.5.3 Observe Contaminated Material Placement: This construction task will be observed to confirm that the contaminated soils are placed in the tailings piles according to Specification S-404-1. See Section 404.6 for specific inspection tasks.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.5.4 Review/Verify Soils Confirmation Investigation

INSPECTION TASK 413.5.4 Review/Verify Soil Confirmation Investigation: The soil confirmation investigation will be reviewed for conformance with Specification S-SCP-1. Scintillometer measurements, soil sample results and survey procedures will be reviewed. The results must meet the appropriate criteria in Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.6 ORE STOCKPILE AREAS

INSPECTION TASK 413.6 ORE STOCKPILE AREAS: This construction task is to be inspected according to the details presented in Sections 413.6.1 through 413.6.6. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-413-2 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

413.6.1 Review/Approve Soil Characterization Survey

INSPECTION TASK 413.6.1 Review/Approve Soil Characterization Survey: The soil characterization survey is to be reviewed for compliance with Specification S-SCP-1. Assure that scintillometer measurements have been made and properly recorded.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.6.2 Verify Stockpile Removal

INSPECTION TASK 413.6.2 Verify Stockpile Removal: Verify that the ore stockpile or other materials have been removed from the ore stockpile areas. Review scintillometer surveys and other available information.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.6.3 Verify Construction of Sedimentation Barriers

INSPECTION TASK 413.6.3 Verify Construction of Sedimentation Barriers: Inspect the sedimentation barriers to determine that the locations, dimensions and specifications of the barriers are in conformance with Specification S-413-1 and Drawing P-413-3.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.6.4 Verify Contaminated Material Removal

INSPECTION TASK 413.6.4 Verify Contaminated Material Removal: This construction task will verify the undertaking of a soils confirmation investigation to confirm that all contaminated soils and other materials have been removed according to Specification S-SCP-1, S-413-1 and Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.6.5 Observe Contaminated Material Placement

INSPECTION TASK 413.6.5 Observe Contaminated Material Placement: This construction task will be observed to confirm that the contaminated soils and other materials are placed in the tailings pile according to Specification S-404-1. See Section 404.6 for specific inspection tasks.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.6.6 Review/Verify Soil Confirmation Investigation

INSPECTION TASK 413.6.6 Review/Verify Soil Confirmation Investigation: The soil confirmation investigation will be reviewed for conformance with Specification S-SCP-1. Scintillometer measurements, soil sample results and survey procedures will be reviewed. The results must meet the appropriate criteria in Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.7 BARREL STORAGE AREA

INSPECTION TASK 413.7 BARREL STORAGE AREA: This construction task is to be inspected according to the details presented in Sections 413.7.1 through 413.7.4. Refer to those sections for specific details. After approval of these sections, Compliance Reports CR-413-3 and 413-4 are to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

413.7.1 Verify Construction of Sedimentation Barriers

INSPECTION TASK 413.7.1 Verify Construction of Sedimentation Barriers: Inspect the sedimentation barriers to determine that the locations, dimensions and specifications of the barriers are in conformance with Specification and Drawing P-400-3.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.7.2 Check/Verify Barrel Inventory

INSPECTION TASK 413.7.2 Check/Verify Barrel Inventory: The barrel inventory will be checked to determine that all the barrels on site have had their contents evaluated in accordance with Specification S-413-1 and Quality Plan QP-413-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.7.3 Verify Disposition of All Barrels

INSPECTION TASK 413.7.3 Verify Disposition of All Barrels: Determine that all barrels have been properly handled or disposed of an accordance with Specification S-413-1 Part IV 4.0.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.7.4 Observe/Verify Placement of Non-Hazardous Barrels on Tailings Pond
INSPECTION TASK 413.7.4 Observe/Verify Placement of Non-Hazardous Barrels on Tailings Ponds: Determine that all barrels placed on the tailings ponds are non-hazardous and that these barrels are placed in accordance with Specification S-413-1.

INSPECTION NOTES: Date_____, Inspector, _____.
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413.8 BONE YARD CLEANUP
INSPECTION TASK 413.8 BONE YARD CLEANUP: This project area is to be inspected according to the details presented in Sections 413.8.1 through 413.8.6. After approval of these sections, Compliance Report CR-413-5 is to be reviewed and approval noted in the APPROVAL field of The Construction Tracking and Inspection System file.

413.8.1 Verify Construction of Sedimentation Barriers
INSPECTION TASK 413.8.1 Verify Construction of Sedimentation Barriers: Inspect the sedimentation barriers to determine that the locations, dimensions and specifications of the barriers are in conformance with Specification S-413-1 and Drawing P-400-3.

INSPECTION NOTES: Date_____, Inspector, _____.
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413.8.2 Observe/Verify Removal of Scrap
INSPECTION TASK 413.8.2 Observe/Verify Removal of Scrap: This construction task will be observed to confirm that the scrap has been removed according to Specification S-413-1.

INSPECTION NOTES: Date_____, Inspector, _____.
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413.8.3 Observe/Verify Placement of Scrap
INSPECTION TASK 413.8.3 Observe/Verify Placement of Scrap: This construction task will be observed to confirm that the scrap material is placed in the tailings piles according to Specification S-413-1. See Section 404 for specific inspection tasks.

INSPECTION NOTES: Date_____, Inspector, _____.
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413.8.4 Observe/Verify Removal of Contaminated Soil
INSPECTION TASK 413.8.4 Observe/Verify Removal of Contaminated Soil: This construction task will verify the undertaking of a soils confirmation investigation to confirm that all contaminated soils have been removed according to Specification S-SCP-1, S-413-1 and Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.8.5 Observe/Verify Placement of Contaminated Soil

INSPECTION TASK 413.8.5 Observe/Verify Placement of Contaminated Soil: This construction task will be Observed to confirm that the contaminated soils are placed on the tailings piles according to Specification S-404-1. See Section 404.6 for specific inspection tasks.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.8.6 Review Soils Confirmation Investigation

INSPECTION TASK 413.8.6 Review Soils Confirmation Investigation: The soil confirmation investigation will be reviewed for conformance with Specification S-SCP-1. Scintillometer measurements, soil sample results and survey procedures will be reviewed. The results must meet the appropriate criteria in Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.9 OTHER MILL AREAS

INSPECTION TASK 413.9 OTHER MILL AREAS: This construction task is to be inspected according to the details presented in Sections 413.9.1 through 413.9.4. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-413-6 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

413.9.1 Verify Construction of Sedimentation Barriers

INSPECTION TASK 413.9.1 Verify Construction of Sedimentation Barriers: Inspect the sedimentation barriers to determine that the locations, dimensions and specifications of the barriers are in conformance with Specification S-413-1 and Drawing P-413-3.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.9.2 Verify Contaminated Material Removal

INSPECTION TASK 413.9.2 Verify Contaminated Material Removal: This construction task will verify the undertaking of a soils confirmation investigation to confirm that all contaminated soils and other materials have been removed according to Specification S-SCP-1, S-413-1 and Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.9.3 Verify Contaminated Material Placement

INSPECTION TASK 413.9.3 Verify Contaminated Material Placement: This construction task will be observed to confirm that the contaminated soils and other materials are placed on the tailings pile according to Specification S-404-1. See Section 404.6 for specific inspection tasks.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.9.4 Review/Verify Soil Confirmation Investigation

INSPECTION TASK 413.9.4 Review/Verify Soil Confirmation Investigation: The soil confirmation investigation will be reviewed for conformance with Specification S-SCP-1. Scintillometer measurements, soil sample results and survey procedures will be reviewed. The results must meet the appropriate criteria in Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.10 FINAL RECLAMATION

INSPECTION TASK 413.10 FINAL RECLAMATION: This construction task is to be inspected according to the details presented in Sections 413.10.1 through 413.10-5. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-413-7 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

413.10.1 Verify Removal of Construction Materials

INSPECTION TASK 413.10.1 Verify Removal of Construction Materials: Inspect the site to determine that all pipes, liner material, and other construction materials have been removed from the site. Determine that all contaminated material has been disposed of on the tailings piles or in the Burbank Quarry.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.10.2 Observe/Verify Final Site Grading

INSPECTION TASK 413.10.2 Observe/Verify Final Site Grading: Inspect the site to determine that the site grading conforms to the approximate lines and grades shown on Drawing P-413-1. Verify that material is uncontaminated and that final slopes are less than 3H:1V.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.10.3 Observe/Verify Random Fill Cover

INSPECTION TASK 413.10.3 Observe/Verify Random Fill Cover: Inspect the site to determine that the random fill cover conforms to the location, thickness, and gradation requirements of Specification S-413-1 and Drawing P-413-1. Verify that material is uncontaminated and that final slopes are less than 3H:1V. Steeper natural slopes may exist.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.10.4 Observe/Verify Site Revegetation

INSPECTION TASK 413.10.4 Observe/Verify Site Revegetation: Inspect the site to determine that all disturbed areas have been reseeded with the seed mixture, application method and application rate required in Specification S-413-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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413.10.5 Observe/Verify Reclamation of Sediment Barriers

INSPECTION TASK 413.10.5 Observe/Verify Reclamation of Sediment Barriers: Inspect and verify that all materials including sediment have been removed and properly disposed of contaminated materials shall be placed in the tailings piles. Verify scintillometer survey of the area.

INSPECTION NOTES: Date_____, Inspector, _____.

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418 TOWN AND ADJACENT AREAS

INSPECTION TASK 418 TOWN AND ADJACENT AREAS: This project area is to be inspected according to the details presented in Sections 418.5 through 418.9. Refer to those sections for specific details. After approval of these sections, the Final Construction Report is to be reviewed and approval noted in the Document Control Log (DOCLOG).

418.5 TOWN AND DISPERSED DEPOSITS

INSPECTION TASK 418.5 TOWN AND DISPERSED DEPOSITS: This construction task is to be inspected according to the details presented in Sections 418.5.1 through 418.5.6. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-418-1 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

418.5.1 Observe/Verify Removal of Existing Structures and Utilities

INSPECTION TASK 418.5.1 Observe/Verify Removal of Existing Structures and Utilities: This task is to confirm that all buildings and utilities within the town of Uravan have been removed or demolished and hauled to the tailings piles.

INSPECTION NOTES: Date_____, Inspector, _____.

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418.5.2 Review/Approve the Soil Characterization Survey

INSPECTION TASK 418.5.2 Review/Approve the Soil Characterization Survey: The soil characterization survey is to be reviewed for compliance with Specification S-SCP-1. Assure that Scintillometer measurements have been made and properly recorded.

INSPECTION NOTES: Date_____, Inspector, _____.

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418.5.3 Verify Contaminated Material Removal

INSPECTION TASK 418.5.3 Verify Contaminated Material Removal: This construction task will verify the undertaking of a soils confirmation investigation to confirm that all contaminated soils have been removed according to Specification S-SCP-1 and Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

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418.5.4 Observe Contaminated Material Transport

INSPECTION TASK 418.5.4 Observe Contaminated Material Transport: This construction task will verify the undertaking of a soils confirmation investigation to confirm that all contaminated soils have been removed according to Specification S-SCP-1 and Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

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418.5.5 Observe Contaminated Material Placement

INSPECTION TASK 418.5.5 Observe Contaminated Material Placement: This construction task will be observed to confirm that the contaminated soils placed in the tailings piles according to Specification S-404-1. Refer to Section 404.6.

INSPECTION NOTES: Date_____, Inspector, _____.

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418.5.6 Review/Verify Soil Confirmation Investigation

INSPECTION TASK 418.5.6 Review/Verify Soil Confirmation Investigation: The soil confirmation investigation will be reviewed for conformance with Specification S-SCP-1. Scintillometer measurements, soil sample results and survey procedures will be reviewed. The results must meet the appropriate criteria in Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

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418.6 TOWN DUMP INVESTIGATION PROGRAM

INSPECTION TASK 418.6 TOWN DUMP INVESTIGATION PROGRAM: This construction task is to be inspected according to the details presented in Sections 418.6.1 through 418.6.4. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-418-2 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

418.6.1 Verify Records Search for the Town Dump

INSPECTION TASK 418.6.1 Verify Records Search for the Town Dump: This task is to verify and document that an adequate search of UCC/Umetco records has been made to determine if any hazardous or radioactive substances were disposed of in the town dump.

INSPECTION NOTES: Date_____, Inspector, _____.

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418.6.2 Observe Soil Test Borings and Trenches

INSPECTION TASK 418.6.2 Observe Soil Test Borings and Trenches: This task is to observe the test borings and trenches in the town dump and to verify that appropriate field investigations have been conducted.

INSPECTION NOTES: Date_____, Inspector, _____.

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418.6.3 Review Town Dump Investigation Report

INSPECTION TASK 418.6.3 Review Town Dump Investigation Report: This inspection report, prepared by Umetco, is to be reviewed to determine the necessity or need to conduct remedial activities at the town dump.

INSPECTION NOTES: Date_____, Inspector, _____.

418.6.4 Review Remedial Action Plan

INSPECTION TASK 418.6.4 Review Remedial Action Plan: This task is to review and comment on the Remedial Action Plan for the town dump if such actions are deemed necessary from the town dump investigation. See Section 418.6.4 for investigation results.

INSPECTION NOTES: Date_____, Inspector, _____.

418.7 REMNANT TAILINGS AND WINDBLOWN MATERIAL

INSPECTION TASK 418.7 REMNANT TAILINGS AND WINDBLOWN MATERIAL: This construction task is to be inspected according to the details presented in Sections 418.7.1 through 418.7.5. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-418-3 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

418.7.1 Review/Approve the Soil Characterization Survey

INSPECTION TASK 418.7.1 Review/Approve the Soil Characterization Survey: The soil characterization survey is to be reviewed for compliance with Specification S-SCP-1. Assure that scintillometer measurements have been made and properly recorded.

INSPECTION NOTES: Date_____, Inspector, _____.

418.7.2 Observe Removal of Discrete Tailings Material

INSPECTION TASK 418.7.2 Observe Removal of Discrete Tailings Material: This construction task will be observed to document that removal activities are conducted in good and workmanlike manner and that trucks leaving the contaminated area are clean.

INSPECTION NOTES: Date_____, Inspector, _____.

418.7.3 Observe Contaminated Material Transport

INSPECTION TASK 418.7.3 Observe Contaminated Material Transport: This construction task will be observed to confirm that the trucks are properly covered and that excess spillage does not occur. Document cleanup of spilled material.

INSPECTION NOTES: Date_____, Inspector, _____.

418.7.4 Observe Contaminated Materials Placement

INSPECTION TASK 418.7.4 Observe Contaminated Material Placement: This construction task will be observed to confirm that the contaminated soils and tailings are placed in the tailings piles according to Specification S-404-1. Refer to Section for 404.6 for specific inspection tasks.

INSPECTION NOTES: Date_____, Inspector, _____.

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418.7.5 Review/Verify Soil Confirmation Investigation

INSPECTION TASK 418.7.5 Review/Verify Soil Confirmation Investigation: The soil confirmation investigation will be reviewed for conformance with Specification S-SCP-1. Scintillometer measurements, soil sample results and survey procedures will be reviewed. The results must meet the appropriate criteria in Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

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418.8 WINDBLOWN MATERIALS

INSPECTION TASK 418.8 WINDBLOWN MATERIALS: This construction task is to be inspected according to the details presented in Section 418.8.1 through 418.8.5. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-418-4 and CR-418-5 are to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

418.8.1 Review/Approve Soil Characterization Survey

INSPECTION TASK 418.8.1 Review/Approve Soil Characterization Survey: The soil characterization survey for windblown material is to be reviewed for compliance with Specifications S-SCP-1 and S-418-1. Assure that scintillometer measurements have been made and properly recorded. Review reclamation proposal for windblown material.

INSPECTION NOTES: Date_____, Inspector, _____.

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418.8.2 Verify Construction of Sediment Control Barriers

INSPECTION TASK 418.8.2 Verify Construction of Sediment Control Barriers: Inspect the sedimentation barriers to determine that the locations, dimensions and specifications of the barriers are in conformance with Specification S-418-1 and Drawing P-400-3.

INSPECTION NOTES: Date_____, Inspector, _____.

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418.8.3 Review/Approve the Remedial Action Plan

INSPECTION TASK 418.8.3 Review/Approve the Remedial Action Plan: This task is to review and approve the Remedial Action Plan for the removal and disposal of wind dispersed radioactive materials. This plan is to be developed, if needed, from data gathered in the Soil Characterization Survey (Section 418.8.1).

INSPECTION NOTES: Date_____, Inspector, _____.

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418.8.4 Verify Reclamation of the Sediment Control Barriers

INSPECTION TASK 418.8.4 Verify Reclamation of the Sediment Control Barriers: This task is to confirm that the sediment control barriers have been removed after contaminated sediments are below 30 u R/hr.

INSPECTION NOTES: Date_____, Inspector, _____.

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418.8.5 Review/Verify Soil Confirmation Investigation

INSPECTION TASK 418.8.5 Review/Verify Soil Confirmation Investigation: The soil confirmation investigation will be reviewed for conformance with Specification S-SCP-1. Scintillometer measurements, soil sample results and survey procedures will be reviewed. The results must meet the appropriate criteria in Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

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418.9 STREAMWAY AND DRAINAGEWAY DEPOSITS

INSPECTION TASK 418.9 STREAMWAY AND DRAINAGEWAY DEPOSITS: This construction task is to be inspected according to the details presented in Sections 418.9.1 through 418.9.4. Refer to those sections for specific details. After approval of these sections, Compliance Reports CR-418-4 and CR-418-5 are to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

418.9.1 Review/Approve the Soil Characterization Survey for Atkinson Creek

INSPECTION TASK 418.9.1 Review/Approve the Soil Characterization Survey for Atkinson Creek: The soil characterization survey is to be reviewed for compliance with Specification S-SCP-1. Assure that scintillometer measurements have been made and properly recorded.

INSPECTION NOTES: Date_____, Inspector, _____.

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418.9.2 Review/Approve the Soil Characterization Survey for Hieroglyphic Canyon

INSPECTION TASK 418.9.2 Review/Approve the Soil Characterization Survey for Hieroglyphic Canyon: The soil characterization survey is to be reviewed for compliance with Specification S-SCP-1. Assure that scintillometer measurements have been made and properly recorded.

INSPECTION NOTES: Date_____, Inspector, _____.

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418.9.3 Review/Approve the Remedial Action Plan

INSPECTION TASK 418.9.3 Review/Approve the Remedial Action Plan: This task is to review the Remedial Action Plan for Atkinson Creek and Hieroglyphic Canyon, if such a plan is necessary from data gathered in the Soil Characterization Survey.

INSPECTION NOTES: Date_____, Inspector, _____.

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418.9.4 Review/Verify Soil Confirmation Investigation

INSPECTION TASK 418.9.4 Review/Verify Soil Confirmation Investigation: The soil confirmation investigation for Atkinson Creek and Hieroglyphic Canyon will be reviewed for conformance with Specification S-SCP-1. Scintillometer measurements, soil sample results and survey procedures will be reviewed. The results must meet the appropriate criteria in Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

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423 BURBANK QUARRY

INSPECTION TASK 423 BURBANK QUARRY: This project area is to be inspected according to the details presented in Sections 423.5 through 423.10. Refer to those sections for specific details. After approval of these sections, the Final Construction Report is to be reviewed and approval noted in the Document Control Log (DOCLOG).

423.5 PLACEMENT OF COMPACTED CLAY LINER

INSPECTION TASK 423.5 PLACEMENT OF COMPACTED CLAY LINER: This construction task is to be inspected according to the details presented in Sections 423.5.1 through 423.5.6. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-423-1 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

423.5.1 Observe Clay Liner Placement

INSPECTION TASK 423.5.1 Observe Clay Liner Placement: This inspection task is to assure compliance with QC-11, QP-423-1 Specification S-423-1 and Drawings P-423-3 and P-423-4 (details 1 and 2).

A summary of these documents is as follows: the clayey soil is to be placed in horizontal lifts of 1 foot (0.30 m) or less in thickness and compacted to at least 95% of standard proctor maximum density. The compacted thickness of the entire clayey soil layer must be at least 1 foot (0.30 m). The distribution and gradation of the materials throughout the clay soil layer shall be such that the fill as far as practicable be free of lenses, pockets, streaks or layers of material differing substantially in texture, gradation or moisture content from the surrounding material. Successive loads of material shall be placed on the fill so as to produce the best practiced distribution of material.

The layers shall be constructed in sequences such that no single layer of clay soil material is allowed to dry below the specified lower placement moisture content. If the compacted surface of any layer of fill is too dry or smooth to bond properly with the layer of material to be placed thereon, it shall be moistened and/or reworked with a harrow, scarifier or other suitable equipment to a sufficient depth to provide relatively uniform moisture content and a satisfactory bonding surface before the next succeeding layer of earth fill is placed. If the compacted surface of any layer in place is too wet, due to precipitation, for proper compaction of the earth fill material to be placed thereon, it shall be removed, allowed to dry or reworked with harrow, scarifier or other suitable equipment to reduce the moisture content to the required level. It shall then be recompacted to the clayey soil requirements. If sponginess is observed as the trucks are driving across, the material may be too wet and may have to be disced or remixed.

No material shall be placed in the clay soil layer when either the materials, existing random fill or the clay soil layer on which material is to be placed is frozen or when ambient temperatures do not permit the placement or compaction of the materials to the specified density without development frost lenses in the fill.

Verification will be by field observation and review of the QA/QC and surveyors reports to assure correct location, dimensions, slopes and grades; quantities of soils from load counts; and fill placement, thickness of fill lifts by measuring, uniformity of soils, moisture and compactive effort.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.5.2 Observe Clay Liner Compaction

INSPECTION TASK 423.5.2 Observe Clay Liner Compaction: This inspection task is to assure compliance with Specification S-423-1 and QP-423-1 which shall be done at intervals as specified in QP-423-1. Quality control tests will be performed in accordance with QC-1, QC-7 and QC-11.

The clay soils shall be compacted to at least 95 percent of the standard proctor maximum density (ASTMD-698). Materials shall be placed in the clayey soil layer in continuous layers not more than 1 foot (0.30 m) in thickness after being compacted. The moisture content of the clay soil shall be within the limits of 3 percent dry and 2 percent wet of the standard optimum moisture content. Material that is not within the specified limits after compaction shall be rejected and shall be reworked until the moisture content is between the specified limits. Reworking may include removal, reharrowing, reconditioning, rerolling or combinations of these procedures.

Density control of compacted clay soil shall be such that the compacted material represented by samples having a dry density less than 95 percent of its standard proctor maximum density shall be rejected. Such rejected material shall be reworked as necessary and rerolled until a dry density equal to or greater than 95 percent of its standard proctor maximum density is obtained.

Verification will be cone by observation and review of QA/QC reports.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.5.3 Check Clay Liner Soils Tests

INSPECTION TASK 423.5.3 Check Clay Liner Soils Tests: This inspection task is to assure conformance to Specification S-423-1 which is to be done at a frequency interval as described in QP 423-1 and be done in accordance to QC-1, QC-2, QC-3, QC-4, QC-5, QC-7 and QC-9.

Clayey soils shall be in organic soils with maximum size of 12 inches (0.30 m) with at least 40% passing the No. 200 sieve, liquid limit of at least 20% and a minimum plasticity index of 10%. Material shall be placed and compacted in maximum 12 inches (0.30 m) lifts to at least 95% of the maximum standard proctor dry density at a moisture content of between 3% below to 2% above optimum moisture content. When material is too dry or too wet or is below 95% maximum dry density, the material will be reworked or recompacted and the test result will note a retest and the corrective techniques. If more than one retest is done, it shall also be noted. All tests should be reported.

The frequency of the tests shall be as follows:

Field density and moisture tests: not less than once per 500 cubic yards and at least one set per lift.

Gradation and Atterberg Limits: not less than once per 1000 cubic yards.

Laboratory standard Proctor compaction test: not less than once per 5000 cubic yards.

When the nuclear density method is used to determine compaction and moisture tests, other tests such as sand cone will be done as a check for accuracy at least once per week.

Verification will be done by checking the reports for location, lifts, test results, and retests.

INSPECTION NOTES: Date_____, Inspector, _____.
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423.5.4 Verify Clay Liner Thickness
INSPECTION TASK 423.5.4 Verify Clay Liner Thickness: This inspection task is to assure a minimum clayey soil thickness of 1.0 foot measured perpendicular to the slope for conformance with Specification S-423-1, Quality Plan, QP-423-1, Drawings P-423-1 and P-423-2 and Quality Control Procedure QC-26. Verification can be done from direct field measurements and inspection of the survey data and field reports.

INSPECTION NOTES: Date_____, Inspector, _____.
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423.6 PLACEMENT OF RAFFINATE CRYSTALS AND CLAYEY COVER
INSPECTION TASK 423.6 PLACEMENT OF RAFFINATE CRYSTALS AND CLAYEY COVER: This construction task is to be inspected according to the details presented in Sections 423.6.1 through 423.6.5. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-423-2 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

423.6.1 Observe Raffinate Crystal Placement in Quarry
INSPECTION TASK 423.6.1 Observe Raffinate Crystal Placement in Quarry: This task is to be inspected in accordance with Specification S-423-1 and QP-423-1 to assure that crystals are properly placed to avoid nesting. Only crystals shall be placed in the quarry.

INSPECTION NOTES: Date_____, Inspector, _____.
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423.6.2 Observe Compaction of Crystals
INSPECTION TASK 423.6.2 Observe Compaction of Crystals: This task is to be inspected to assure proper compaction of crystals, including thickness, location, and dimensions of crystal cells. Compactive effort and specifications will be developed from field tests. The results of the field tests will be reviewed.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.6.3 Review/Check Crystal Soils Tests

INSPECTION TASK 423.6.3 Review/Check Crystal Soils Tests: Review geotechnical tests and quality control tests for conformance with Specification S-423-1, QP-423-1, QC-1, QC-2,and QC-9. Review laboratory calculations and worksheets.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.6.4 Observe Clay Cell Cover Placement and Compaction

INSPECTION TASK 423.6.4 Observe Clay Cell Cover Placement and Compaction: This construction task is to be inspected to determine compliance with Specification S-423-1 and QP-423-1. Observe placement of the cell covers to determine that a minimum thickness of 1.0 foot is achieved and the dimensions of the cells meet specifications.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.6.5 Review/Check Clayey Cover Soils Tests

INSPECTION TASK 423.6.5 Review/Check Clayey Cover Soils Tests: Review geotechnical tests and quality control tests to assure that moisture, gradation, size, and compaction meet the requirements in Specification S-423-1 and Quality Plan QP-423-1. Review laboratory calculations and worksheets.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.7 RECLAMATION COVER FOR REPOSITORY

INSPECTION TASK 423.7 RECLAMATION COVER FOR REPOSITORY: This construction task is to be inspected according to the details presented in Sections 423.7.1 through 423.7.14. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-423-3 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

423.7.1 Confirm Clayey Soil Properties

INSPECTION TASK 423.7.1 Confirm Clayey Soil Properties: Inspection of the material properties used in the radon barrier will be conducted to assure conformance with Specification S-423-1 Quality Plan QP-423-1 and Drawings P-423-3 and P-423-4 (Details 1 and 2). The clayey soils shall be inorganic soils free of brush, roots, sod or other perishable or unsuitable material. It will have a maximum size of QC-6 12 inches with at least 40% passing the No. 200 sieve QC-5, liquid limit of at least 20% and a minimum plasticity

index of 10%. Clay materials that do not meet the Atterberg limit criteria may be used provided the material has diffusion coefficients and emanation coefficients that will not produce radon emanation rates above acceptable levels. All material intended for use as a clayey soil shall be approved by the QC officer.

The sources for the clayey soil shall be from the Upper Club Mesa Borrow area, Burbank Quarry or other state approved borrow source. Verification will be by direct observation of the clayey materials (looking for oversize material, insufficient clay) and review of QA/QC reports.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.7.2 Observe Clayey Soil Placement

INSPECTION TASK 423.7.2 Observe Clayey Soil Placement: This inspection task is to assure compliance with QC-11, QP-423-1 Specification S-423-1 and Drawings P-423-3 and P-423-4.

A summary of these documents is as follows: the clayey soil is to be placed in horizontal lifts of 1 foot (0.30 m) or less in thickness and compacted to at least 95% of standard proctor maximum density. The compacted thickness of the entire clayey soil layer must be at least 1 foot (0.33 m). The distribution and gradation of the materials throughout the clay soil layer shall be such that the fill as far as practicable be free of lenses, pockets, streaks or layers of material differing substantially in texture, gradation or moisture content from the surrounding material. Successive loads of material shall be placed on the fill so as to produce the best practiced distribution of material.

The layers shall be constructed in sequences such that no single layer of clay soil material is allowed to dry below the specified lower placement moisture content. If the compacted surface of any layer of fill is too dry or smooth to bond properly with the layer of material to be placed thereon, it shall be moistened and/or reworked with a harrow, scarifier or other suitable equipment to a sufficient depth to provide relatively uniform moisture content and a satisfactory bonding surface before the next succeeding layer of earth fill is placed. If the compacted surface of any layer in place is too wet, due to precipitation, for proper compaction of the earth fill material to be placed thereon, it shall be removed, allowed to dry or reworked with harrow, scarifier or other suitable equipment to reduce the moisture content to the required level. It shall then be recompacted to the clayey soil requirements. If sponginess is observed as the trucks are driving across, the material may be too wet and may have to be disced or remixed.

No material shall be placed in the clay soil layer when either the materials, existing random fill or the clay soil layer on which material is to be placed is frozen or when ambient temperatures do not permit the placement or compaction of the materials to the specified density without development frost lenses in the fill.

Verification will be by field observation and review of the QA/QC and surveyors reports to assure correct location, dimensions, slopes and grades; quantities of soils from load counts; and fill placement, thickness of fill lifts by measuring, uniformity of soils, moisture and compactive effort.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.7.3 Observe Clayey Soil Compaction

INSPECTION TASK 423.7.3 Observe Clayey Soil Compaction: This inspection task is to assure compliance with Specification S-423-1 and QP-423-1 which shall be done at intervals as specified in Part IV Section 3.5 Frequency of Quality Control Tests. Quality control tests will be performed in accordance with QC-1, QC-7 and QC-11.

The clay soils shall be compacted to at least 95 percent of the standard proctor maximum density (ASTMD-698). Materials shall be placed in the clayey soil layer in continuous layers not more than 1 foot (0.30 m) in thickness after being compacted. The moisture content of the clay soil shall be within the limits of 3 percent dry and 2 percent wet of the standard optimum moisture content. Material that is not within the specified limits after compaction shall be rejected and shall be reworked until the moisture content is between the specified limits. Reworking may include removal, reharrowing, reconditioning, rerolling or combinations of these procedures.

Density control of compacted clay soil shall be such that the compacted material represented by samples having a dry density less than 95 percent of its standard proctor maximum density shall be rejected. Such rejected material shall be reworked as necessary and rerolled until a dry density equal to or greater than 95 percent of its standard proctor maximum density is obtained.

Verification will be done by observation and review of QA/QC reports.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.7.4 Observe Clayey Layer Soils Tests

INSPECTION TASK 423.7.4 Observe Clayey Layer Soils Tests: This inspection task is to assure conformance to Specification S-423-1 which is to be done at a frequency interval as described in QP 423-1 and be done in accordance to QC-1, QC-2, QC-3, QC-4, QC-5, QC-7 and QC-9.

Clayey soils shall be in organic soils with maximum size of 12 inches (0.30 m) with at least 40% passing the No. 200 sieve, liquid limit of at least 20% and a minimum plasticity index of 10%. Material shall be placed and compacted in maximum 12 inches (0.30 m) lifts to at least 95% of the maximum standard proctor dry density at a moisture content of between 3% below to 2% above optimum moisture content. When material is too dry or too wet or is below 95% maximum dry density, the material will be reworked or recompacted and the test result will note a retest and the corrective techniques. If more than one retest is done, it shall also be noted. All tests should be reported.

The frequency of the tests shall be as follows:

Field density and moisture tests: not less than once per 500 cubic yards and at least one set per lift.

Gradation and Atterberg Limits: not less than once per 1000 cubic yards.

Laboratory standard Proctor compaction test: not less than once per 5000 cubic yards.

When the nuclear density method is used to determine compaction and moisture tests, other tests such as sand cone will be done as a check for accuracy at least once per week.

Verification will be done by checking the reports for location, lifts, test results, and retests.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.7.5 Verify Clayey Layer Thickness

INSPECTION TASK 423.7.5 Verify Clayey Layer Thickness: This inspection task is to assure a minimum clayey soil thickness of 12 inches (0.33 m) measured perpendicular to the slope for conformance with Specification S-423-1, Quality Plan, QP-423-1, Drawings P-423-3 and P-423-4 and Quality Control Procedure QC-26. Verification can be done from direct field measurements and inspection of the survey data and field reports.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.7.6 Confirm Random Fill Materials Properties

INSPECTION TASK 423.7.6 Confirm Random Fill Materials Properties: This inspection task is to assure conformance with Specification S-423-1 and Quality Plan QP-423-1.

Random fill shall be inorganic soils with brush, roots, sod, or other perishable, unsuitable materials removed as practicable. The material shall have a maximum size of 12 inches (0.30 m) . All material for use as random fill shall be approved by the QC officer.

The source for the random fill shall be from the Upper Club Mesa Borrow Area, the Burbank Quarry, or other State approved borrow area.

Verification will be by observation of the borrow source areas and materials being placed on the clayey layer.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.7.7 Observe Random Fill Placement

INSPECTION TASK 423.7.7 Observe Random Fill Placement: This inspection task is to assure that the random fill placement will be done in accordance to Specification S-423.1 QP-423-1; QC-26, and as shown on Drawings P-423-3 and P-423-4.

The Random fill shall be placed in lifts not exceeding one foot (0.30 m) in thickness and compacted to at least 95 percent of the Standard Proctor maximum density. The total thickness of the newly placed random fill shall be at least 0.84 m on the 3H:1V slope and 1.17 m on the top of the repository. The distribution and gradation of the materials shall be such that the fill shall as far as practicable be free of lenses, pockets, streaks, or layers of material differing substantially in texture, gradation or moisture content from the surrounding material. Successive loads of material shall be placed on the fill so as to produce the best practical distribution of material.

If the compacted surface of any layer of fill is too dry or both to bond properly with the layer of material to be placed there on, it shall be moistened and/or reworked with a harrow, scarifier, or other suitable equipment to a sufficient depth to provide relatively uniform moisture content and a satisfactory bonding surface before the next succeeding layer of earthfill is placed. If the compacted surface of any layer of earthfill in-place is too wet, due to precipitation, for proper compaction of the earthfill material to be placed thereon, it shall be removed; allowed to dry; or reworked with harrow, scarifier or other suitable equipment to reduce the moisture content to the required level. It shall then be recompacted to the earthfill requirements.

No material shall be placed in the random fill layer when either the materials, clayey soil layer, or the random fill on which material is to be placed is frozen or when ambient temperatures do not permit the placement or compaction of the materials to the specified density without developing frost lenses in the fill. Verification will be by field observation and review of the QA/QC and surveyors reports.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.7.8 Observe Random Fill Compaction

INSPECTION TASK 423.7.8 Observe Random Fill Compaction: This inspection task is to assure that the random fill is compacted according to Specification S-423-1 which is to be done in intervals as specified and QP-423-1, Part II, (Section 2.4.3). Quality control tests will be performed in accordance to QC-1, QC-7 and QC-11.

Materials shall be placed in the random fill layer in continuous layers not more than 1 foot (0.30 m) in thickness after being compacted. The earthfill shall be compacted to at least 95 percent of the standard Proctor maximum density (ASTMD-698).

As far as practicable, the materials shall be brought to the proper moisture content before excavation or moisture shall be added to the material by sprinkling on the earthfill, and each layer of the random fill shall be

conditioned so that the moisture content is uniform throughout the layer prior to and during compaction. The moisture content of the compacted random fill shall be within the limits of 3 percent dry and 3 percent wet of the standard optimum moisture content. Material that is too dry or too wet to permit bonding of layers during compaction shall be rejected and shall be reworked until the moisture content is acceptable. Reworking may include removal, reharrowing, reconditioning, rerolling, or combinations of these procedures.

Density control of compacted random fill shall be such that the compacted material represented by samples having a dry density less than 95 percent of its standard Proctor maximum density shall be rejected. Such rejected material shall be reworked as necessary and controlled until a dry density equal to or greater than 95 percent of its standard Proctor maximum density is obtained. Verification will be done by observation and review of QA/QC reports.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.7.9 Check Random Fill Soils Tests

INSPECTION TASK 423.7.9 Check Random Fill Soils Tests: This task is to assure conformance with Specification S-423-1 which is to be done at a frequency interval as described in QP-423-1, Part II (Section 2.4.3); and be done in accordance to QC-1, QC-2, QC-3, QC-4, QC-5, QC-7 and QC-9.

Random fill shall be in organic soils with brush, roots, sod or other perishable, unsuitable materials removed as practicable. The material shall have a maximum size of 12 inches (0.30 m) and shall be compacted to at least 95 percent of the standard Proctor maximum density. The moisture content shall be within the limits of 3 percent dry and 3 percent wet of the standard optimum moisture content. When material is too dry or too wet or is below 95% maximum dry density, the material will be reworked or recompacted and the test result will note a retest and the corrective technique. If more than one retest is done, it shall be noted. All tests shall be reported. The frequency of the tests shall be as follows:

Field density and moisture tests: not less than once per 500 cubic yards and at least one set per lift.

Laboratory standard Proctor compaction test: not less than once per 5000 cubic yards.

Verification will be done by checking the reports for location, lifts, test results and retests.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.7.10 Verify Random Fill Layer Thickness

INSPECTION TASK 423.7.10 Verify Random Fill Layer Thickness: This inspection task is to assure that the thickness is in accordance with Specification S-423-1; QC-16; Drawings P-423-3, P-423-4 (details 1 and 2). The thickness of the existing and newly placed random fill totals shall be

at least 0.84 m on the 3H:1V slope and 1.17 m on the top, as measured perpendicular to the slope. Verification will be done by direct measurement, truck load count and from the survey and field reports.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.7.11 Confirm Riprap Cover Specifications

INSPECTION TASK 423.7.11 Confirm Riprap Cover Specifications: This inspection task is to assure that the riprap for the side slopes and top meet the requirements of Specification S-423-1; on Drawings P-423-3 and P-423-4, and in Quality Plan QP-423-1 and be prepared in accordance to QC-27. Riprap shall be type B which is a maximum size of 24 inches, a D_{50} size of 12 to 18 inches, and a D_{15} size of 3/4 inch to 3 inches and type A which is a maximum size of 12 inches, a D_{50} size of 3 to 6 inches and a D_{15} size of 3/4 inch to the number 8 sieves. It shall be obtained from the Burbank Quarry or other approved Borrow Source and shall be placed over the random fill.

Confirmation shall be by visual observations, comparison to the reference stockpiles, and from measurements and calculations set forth in QP-27.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.7.12 Observe Riprap Cover Placement

INSPECTION TASK 423.7.12 Observe Riprap Cover Placement: This task is to assure conformance to Specification S-423-1; Quality Plan QP-423-1, Drawings P-423-3, P-423-4; and Quality Control Procedure QC-11.

Riprap material shall be hauled to the Repository and end-dumped in a manner to minimize segregation of the material. The material shall then be placed by dozer or excavator in a single lift. Placement of the rip rap shall avoid accumulation of rip rap sizes less than the minimum D_{50} size and nesting of the larger sized rocks. The riprap layer shall have at least two passes by a D-7 Dozer or equivalent in order to key the rock for stability.

Visual determination of the riprap gradation shall be made at the quarry from a standard pile at the frequencies specified in Part IV, Section 3.5 Frequency of Quality Control Tests.

Any accumulations of rip rap sizes less than the minimum D_{50} size shall be removed and blended with subsequent material to meet visual gradation standards.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.7.13 Observe Riprap Compaction

INSPECTION TASK 423.7.13 Observe Riprap Compaction: This inspection task is to assure proper compaction of the riprap and to meet Specification S-423-1; Quality Plan QP-423-1 and QC-11.

The riprap shall be placed in a single lift in such a manner as to minimize segregation, and shall receive at least two passes of a D-7 Dozer or equivalent in order to key the rock for stability. This shall be checked by direct observation, measuring lift thickness prior to and after compaction, and counting the number of passes of the D-7 Dozer.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.7.14 Verify Riprap Thickness

INSPECTION TASK 423.7.14 Verify Riprap Thickness: This inspection task is to assure conformance with Specification S-423-1; Drawing P-423-4; Quality Plan QP-423-1 and Quality Control Procedure QC-28.

The riprap layer after compaction must be at least 0.66 m thick on the 3H:1V slope and 0.33 m thick on the top. Verification can be done by observation, direct measurement and review of survey and construction truck load reports. The survey report should include location, dimensions, slopes and grades of placed materials. The quantity of material from truck loads as determined in QC-28 "Procedure for Determining Riprap Thickness for Reclamation Covers and Channels" can be used to compare the area filled. Recalculation of the truck factor will be required if the comparison is greater or lesser than 5 percent.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.8 SURFACE RUNOFF CONTROL FACILITIES, REMEDIAL ACTIVITIES PERIOD

INSPECTION TASK 423.8 SURFACE RUNOFF CONTROL FACILITIES, REMEDIAL ACTIVITIES PERIOD: This construction task is to be inspected according to the details presented in Sections 423.8.1 through 423.8.11. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-423-4 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

423.8.1 Review/Approve Soil Characterization Survey

INSPECTION TASK 423.8.1 Review/Approve the Soil Characterization Survey: The soil characterization survey is to be reviewed for compliance with Specification S-SCP-1. Assure that scintillometer measurements have been made and properly recorded.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.8.2 Verify Contaminated Soil Removal

INSPECTION TASK 423.8.2 Verify Contaminated Soils Removal: Verify that any contaminated soils or other materials have been removed from the area of the runoff control facilities. Review scintillometer surveys and other available information.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.8.3 Check Ditch Location(s)

INSPECTION TASK 423.8.3 Check Ditch Location(s): This construction task is to be inspected for conformance with Drawings P-423-1 and P-423-2. Note any significant changes in ditch locations and assure that such changes are noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.8.4 Measure Ditch Dimensions and Gradients

INSPECTION TASK 423.8.4 Measure Ditch Dimensions and Gradients: Measure the width, depth sideslope and gradient of the ditch(es) to assure conformance with the details on Drawings P-423-1 and P-423-2. Note any significant changes and assure that such changes are noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.8.5 Calculate Ditch Capacity

INSPECTION TASK 423.8.5 Calculate Ditch Capacity: Using the ditch measurements, calculate or estimate the ditch capacity. Use the following equation $Q = 1.49/n\ R(2/3)\ S(1/2)\ A$. Assure that capacity specifications are met in accordance with Specification S-423-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.8.6 Observe and Check Retention Pond Earthwork

INSPECTION TASK 423.8.6 Observe and Check Retention Pond Earthwork: This construction task will be observed to confirm that the retention pond is constructed in the appropriate location (see Drawing P-423-1), with the dimensions and capacity per Specification S-423-1, and that the earth embankment has been placed and compacted properly (Quality Plan QP-423-1).

INSPECTION NOTES: Date_____, Inspector, _____.

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423.8.7 Inspect Liner Material

INSPECTION TASK 423.8.7 Inspect Liner Material: Liner material will be inspected to determine that it meets the thickness and quality requirements in Specification S-423-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.8.8 Observe Liner Installation

INSPECTION TASK 423.8.8 Observe Liner Installation: Liner installation will be observed to determine conformance with the lines, grades, and details shown in Drawings P-423-1 and P-423-3. Field changes will be noted and field drawings checked for those changes.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.8.9 Check Liner Seam Tests (Nondestructive)

INSPECTION TASK 423.8.9 Check Liner Seam Tests (Nondestructive): Review liner seam test procedures and results to determine conformance with Quality Control Procedure QC-19. Check retests of failed seams.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.8.10 Check Liner Seam Tests (Destructive)

INSPECTION TASK 423.8.10 Check Liner Seam Tests (Destructive): Review liner seam test procedures and results to determine conformance with Quality Control Procedure QC-19. Check retests of failed seams.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.8.11 Review Liner Installation QC Report

INSPECTION TASK 423.8.11 Review Liner Installation QC Report: Review the liner installation quality control report to determine that the liner is certified to meet intended application; field seams have been tested and repaired; and that no holes, blisters, or other defects exist in the material.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.9 SURFACE RUNOFF CONTROL FACILITIES-POST RECLAMATION PERIOD

INSPECTION TASK 423.9 SURFACE RUNOFF CONTROL FACILITIES-POST RECLAMATION PERIOD: This construction task is to be inspected according to the details presented in Sections 423.9.1 through 423.9.5. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-423-5 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

423.9.1 Observe/Verify Modification to Drainage in Southwest Corner of Burbank Quarry

INSPECTION TASK 423.9.1 Observe/Verify Modification to Drainage in Southwest Corner of Burbank Quarry: This construction task is to be inspected for conformance with Drawings P-423-1 and P-423-2. The natural drainage shall be changed to route water away from the repository.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.9.2 Check Location of Channel C

INSPECTION TASK 423.9.2 Check Location of Channel C: This construction task is to be inspected for conformance with Drawings P-423-3 and P-423-4. Note any significant changes in ditch locations and assure that such changes are noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.9.3 Measure Dimensions and Gradient of Channel C

INSPECTION TASK 423.9.3 Measure Dimensions and Gradient of Channel C: Measure the width, depth sideslope and gradient of the ditch(es) to assure conformance with the details on Drawings P-423-3 and P-423-4. Note any significant changes and assure that such changes are noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.9.4 Calculate Capacity of Channel C

INSPECTION TASK 423.9.4 Calculate Capacity of Channel C: Using the ditch measurements, calculate or estimate the ditch capacity. Use the following equation $Q = 1.49/n\ R(2/3)\ S(1/2)\ A$. Assure that capacity specifications are met in accordance with Specification S-423-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.9.5 Check Riprap Sections of Channel C

INSPECTION TASK 423.9.5 Check Riprap Sections of Channel C: This construction task consists of verifying that riprap sections of Channel C conform to Drawing P-423-4. Actual sections may vary based on materials encountered during excavation. Variations should be noted and recorded on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.11 MONITORING DEVICES

INSPECTION TASK 423.11 MONITORING DEVICES: This construction task is to be inspected according to the details presented in Sections 423.11.1 through 423.11.3. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-423-6 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

423.11.1 Observe/Verify Construction of Surface Movement Monuments

INSPECTION TASK 423.11.1 Observe/Verify Construction of Surface Movement Monuments: This construction task will verify that surface movement monuments are constructed in accordance to Specification S-423-1 Part IV Section 2, Drawings P-423-3 and P-423-4; and Quality Procedure QC-15.

The location of the Surface Movement Monuments shall be at the approximate locations shown on Drawing P-423-3. The final locations shall be determined in the field at completion of reclamation. Surface Movement Monuments shall be constructed to the dimensions shown on P-423-4. They should not be placed near traffic areas.

The purpose of these monuments is to establish the post remediation settlement, erosion, and to determine the amount of movement of the embankments.

Data collected from the Surface Movement Monuments will be used to determine the integrity and effectiveness of the reclamation cover by ascertaining the amount of settlement, erosion, and embankment movement.

Verification will be by observation as to location and condition of the movement. Review of QC and survey reports will aid in verifying the monuments. If monuments are damaged or destroyed, they should be replaced as close to the existing monument after determining the reason or cause of the damage.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.11.2 Observe/Verify Construction of Erosion Monuments

INSPECTION TASK 423.11.2 Observe/Verify Construction of Erosion Monuments: This construction task will verify that Erosion Monuments are constructed in accordance to Specification S-423-1 Part VI Section 3; Quality Plan QP-423-1 Part IV Section 3; and Drawings P-423-3 and P-423-4; and Quality Control Procedure QC 13.

The Erosion Monuments shall be used to determine the amount and rate of gully erosion and cliff retreat in the Tailings Piles Area. The location of the Erosion Monuments shall be approximately as shown on Drawing P-423-3. The final locations shall be determined in the field based on access and site conditions. The Erosion Monuments shall be constructed to the size and dimensions presented on Drawing P-423-4.

These monuments shall be surveyed and their location described. Additionally, the proximity to the cliff edge and other pertinent observations shall be described, recorded and photographed. During the long term monitoring program, the monuments shall be observed visually and surveyed. From these observations, the rate of cliff retreat shall be determined and potential impact on the integrity of the disposal area assessed.

Verification shall be by observation and review of the survey reports.

INSPECTION NOTES: Date_____, Inspector, _____.
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423.11.3 Verify Aerial Photography on Completion of Cover
INSPECTION TASK 423.11.3 Verify Aerial Photography on Completion of Cover: After completion of the cover, aerial photographs shall be used as required to aid the Performance Evaluation.

INSPECTION NOTES: Date_____, Inspector, _____.
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423.12 FINAL QUARRY RECLAMATION
INSPECTION TASK 423.12 FINAL QUARRY RECLAMATION: This construction task is to be inspected according to the details presented in Sections 423.12.1 through 423.12.3. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-423-7 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

423.12.1 Verify Removal of Construction Materials
INSPECTION TASK 423.12.1 Verify Removal of Construction Materials: Inspect the site to determine that all pipes, liner material and other construction materials have been removed from the site. Determine that all contaminated material has been disposed of on the tailings piles or in the Burbank Quarry.

INSPECTION NOTES: Date_____, Inspector, _____.
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423.12.2 Observe/Verify Final Site Grading
INSPECTION TASK 423.12.2 Observe/Verify Final Site Grading: Inspect and review survey reports of the site to determine that the site grading conforms to the approximate lines and grades shown on Drawing P-423-2. Verify that material outside of the repository is uncontaminated and that final slopes are less than or equal to 3H:1V.

INSPECTION NOTES: Date_____, Inspector, _____.

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423.12.3 Observe/Verify Site Revegetation

INSPECTION TASK 423.12.3 Observe/Verify Site Revegetation: Inspect the site to determine that all disturbed areas have been reseeded with the seed mixture, application method and application rate required in Specification S-423-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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424 UPPER CLUB MESA BORROW AREA

INSPECTION TASK 424 UPPER CLUB MESA BORROW AREA: This project area is to be inspected according to the details presented in Sections 424.1 through 424.2. Refer to those sections for specific details. After approval of these sections, the Final Construction Report is to be reviewed and approval noted in the Document Control Log (DOCLOG).

424.5 PREPARATION OF BORROW AREA

INSPECTION TASK 424.5 PREPARATION OF BORROW AREA: This construction task is to be inspected according to the details presented in Sections 424.5.1 through 424.5.7. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-424-1 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

424.5.1 Verify Removal and Stockpiling of Topsoil and Unsuitable Material

INSPECTION TASK 424.5.1 Verify Removal and Stockpiling of Topsoil and Unsuitable Material: This task is to be inspected to determine that topsoil and other material unsuitable for engineering purposes are segregated and stockpiled. Determine that the stockpiles are located according to Drawing P-424-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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424.5.2 Observe Modification to County Road

INSPECTION TASK 424.5.2 Observe Modification to County Road: This task is to be inspected to determine that the county road is widened and relocated as shown in Drawing P-424-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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424.5.3 Observe/Verify Utility Relocation

INSPECTION TASK 424.5.3 Observe/Verify Utility Relocation: This task is to be inspected to verify that the power transmission lines and other utilities have been located and moved prior to mining the area.

INSPECTION NOTES: Date_____, Inspector, _____.

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424.5.4 Verify Construction of Sedimentation Pond

INSPECTION TASK 424.5.4 Verify Construction of Sedimentation Pond: Inspect the sedimentation pond to determine that the locations, dimensions and specifications of the pond are in conformance with Specifications S-424-1 and S-424-2.

INSPECTION NOTES: Date_____, Inspector, _____.

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424.5.5 Verify Maintenance of Working Bench Slopes

INSPECTION TASK 424.5.5 Verify Maintenance of Working Bench Slopes: This construction task is to be inspected to assure that slopes are maintained to provide drainage away from the mine benches.

INSPECTION NOTES: Date_____, Inspector, _____.

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424.5.6 Verify Erosion Mitigation Measures

INSPECTION TASK 424.5.6 Verify Erosion Mitigation Measures: This construction task is to be inspected to determine that sediment barriers are placed in the locations and to the specifications shown in Drawings P-424-1 and P-424-2.

INSPECTION NOTES: Date_____, Inspector, _____.

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424.5.7 Verify Fugitive Dust Control Measures

INSPECTION TASK 424.5.7 Verify Fugitive Dust Control Measures: This task is to be inspected in the field to determine that all fugitive dust control measures in Specification S-424-1 Part I, Section 4.0 and the AQCD permit are undertaken during operations.

INSPECTION NOTES: Date_____, Inspector, _____.

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424.7 FINAL RECLAMATION

INSPECTION TASK 424.7 FINAL RECLAMATION: This construction task is to be inspected according to the details presented in Sections 424.7.1 through 424.7.5. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-424-2 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

424.7.1 Observe/Verify Conformance with MLR Permit

INSPECTION TASK 424.7.1 Observe/Verify Conformance with MLR Permit: This task is to be inspected to determine conformance with all operating and reclamation conditions of the MLRD permit.

INSPECTION NOTES: Date_____, Inspector, _____.

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424.7.2 Verify Reclamation of Sediment Barriers

INSPECTION TASK 424.7.2 Verify Reclamation of Sediment Barriers: This construction task is to be inspected to determine that the sediment barriers have been removed and that all sediment has been properly disposed of prior to final reclamation of the site.

INSPECTION NOTES: Date_____, Inspector, _____.

424.7.3 Observe/Verify Cleanup of All Mining Material

INSPECTION TASK 424.7.3 Observe/Verify Cleanup of All Mining Material: This construction task is to be inspected to determine that all mining materials have been removed and properly disposed of prior to final site reclamation.

INSPECTION NOTES: Date_____, Inspector, _____.

424.7.4 Observe/Verify Final Site Grading

INSPECTION TASK 424.7.4 Observe/Verify Final Site Grading: Inspect the site to determine that the site grading conforms to the approximate lines and grades shown on Drawings P-424-1 and P-424-2. Verify that material is uncontaminated and that final slopes are less than 3H:1V.

INSPECTION NOTES: Date_____, Inspector, _____.

424.7.5 Observe/Verify Site Revegetation

INSPECTION TASK 424.7.5 Observe/Verify Site Revegetation: Inspect the site to determine that all disturbed areas have been reseeded with the seed mixture, application method and application rate required in Specification S-424-1.

INSPECTION NOTES: Date_____, Inspector, _____.

425 VALLEY BORROW AREA

INSPECTION TASK 425 VALLEY BORROW AREA: This project area is to be inspected according to the details presented in Sections 425.1 through 425.6. Refer to those sections for specific details. After approval of these sections, the Final Construction Report is to be reviewed and approval noted in the Document Control Log (DOCLOG).

425.5 PREPARATION OF BORROW AREA

INSPECTION TASK 425.5 PREPARATION OF BORROW AREA: This construction task is to be inspected according to the details presented in Sections 425.5.1 through 424.5.2. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-425-1 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

425.5.1 Verify Removal and Stockpiling of Topsoil and Unsuitable Material

INSPECTION TASK 425.5.1 Verify Removal and Stockpiling of Topsoil and Unsuitable Material: This task is to be inspected to determine that topsoil and other material unsuitable for engineering purposes are segregated and stockpiled. Verify that stockpiles are located according to Drawing P-425-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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425.5.2 Observe State Highway 141 Road Crossing

INSPECTION TASK 425.5.2 Observe State Highway 141 Road Crossing: This construction task is to be inspected to determine that the Highway 141 crossing is constructed as required by the State Highway Department and that adequate site distance exists along Highway 141. Verify the culvert construction according to Drawing P-425-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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425.5.3 Observe/Verify Utility Relocation

INSPECTION TASK 425.5.3 Observe/Verify Utility Relocation: This construction task is to be inspected to confirm that the existing power transmission line, and any other utilities has been identified and moved prior to the commencement of mining activities.

INSPECTION NOTES: Date_____, Inspector, _____.

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425.5.4 Verify Construction of Sedimentation Pond/Ditches

INSPECTION TASK 425.5.4 Verify Construction of Sedimentation Pond/Ditches: Inspect the sedimentation pond to determine that the locations, dimensions and specifications of the pond are in conformance with Drawings P-425-1 and P-425-2.

INSPECTION NOTES: Date_____, Inspector, _____.

425.5.5 Observe/Verify Fugitive Dust Control Measures

INSPECTION TASK 425.5.5 Observe/Verify Fugitive Dust Control Measures: This task is to be inspected in the field to determine that all fugitive dust control measures in Specification S-425-1, Part I, Section 4.0 and the AQCD permit are undertaken during operations.

INSPECTION NOTES: Date_____, Inspector, _____.

425.7 FINAL RECLAMATION

INSPECTION TASK 425.7 FINAL RECLAMATION: This construction task is to be inspected according to the details presented in Sections 425.7.1 through 425.7.4. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-425-2 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

425.7.1 Verify Conformance with MLR Permit

INSPECTION TASK 425.7.1 Verify Conformance with MLR Permit: This task is to be inspected to determine conformance with all operating and reclamation conditions of the MLRD permit.

INSPECTION NOTES: Date_____, Inspector, _____.

425.7.2 Verify Removal of Mining Material

INSPECTION TASK 425.7.2 Verify Removal of Mining Material: This construction task is to be inspected to determine that all mining materials have been removed and properly disposed of prior to final site reclamation.

INSPECTION NOTES: Date_____, Inspector, _____.

425.7.3 Check Final Reclamation Slopes

INSPECTION TASK 425.7.3 Check Final Reclamation Slopes: Inspect the site to determine that the site grading conforms to the approximate lines and grades shown on Drawings P-425-1 and P-425-2. Verify that material is uncontaminated and that final slopes are less than 3H:1V.

INSPECTION NOTES: Date_____, Inspector, _____.

425.7.4 Observe/Verify Final Revegetation

INSPECTION TASK 425.7.4 Observe/Verify Final Revegetation: Inspect the site to determine that all disturbed areas have been reseeded with the seed mixture, application method and application rate required in Specification S-425-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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426 HILLSIDE SEEPAGE

INSPECTION TASK 426 HILLSIDE SEEPAGE: This project area is to be inspected according to the details presented in Sections 426.1 through 426.8. Refer to those sections for specific details. After approval of these sections, the Final Construction Report is to be reviewed and approval noted in the Document Control Log (DOCLOG).

426.5 EXISTING COLLECTION SYSTEM

INSPECTION TASK 426.5 EXISTING COLLECTION SYSTEM: This construction task is to be inspected according to the details presented in Sections 426.5.1 through 426.5.12. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-426-1 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

426.5.1 Observe/Verify Cleaning and Regrading of Existing Ditches

INSPECTION TASK 426.5.1 Observe/Verify Cleaning and Regrading of Existing Ditches: This construction task is to be inspected to determine that the existing ditches have been regraded to the lines, locations, and grades shown in Drawings P-426-1, P-426-2, and P-426-3. Note any modifications or field changes. Verify culvert placements.

INSPECTION NOTES: Date_____, Inspector, _____.

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426.5.2 Measure Ditch Dimensions and Gradients

INSPECTION TASK 426.5.2 Measure Ditch Dimensions and Gradients: Measure the width, depth sideslope and gradient of the ditch(es) to assure conformance with the details on Drawings P-426-1 and P-426-2. Note any significant changes and assure that such changes are noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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426.5.3 Calculate Ditch Capacity

INSPECTION TASK 426.5.3 Calculate Ditch Capacity: Using the ditch measurements, calculate or estimate the ditch capacity. Use the following equation Q= 1.49/n R(2/3) S(1/2) A. Assure that capacity specifications are met in accordance with Specification S-426-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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426.5.4 Observe/Verify Cleaning of Diversion Ponds

INSPECTION TASK 426.5.4 Observe/Verify Cleaning of Diversion Ponds: This construction task is to be inspected to determine that all Diversion Ponds have been cleaned and regraded in accordance with Specification S-426-1 and Drawings P-426-1 and P-426-2. Verify that contaminated materials are disposed of in the Tailings Piles.

INSPECTION NOTES: Date_____, Inspector, _____.

426.5.5 Measure Diversion Pond Dimensions

INSPECTION TASK 426.5.5 Measure Diversion Pond Dimensions: Measure the width, depth, and sideslope of the ponds to determine conformance with Specification S-426-1 and Drawings P-426-1 and P-426-2. Note any significant changes and assure that these changes are noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

426.5.6 Calculate Diversion Pond Capacity

INSPECTION TASK 426.5.6 Calculate Diversion Pond Capacity: Calculate the pond capacities with the information collected in Section 426.5.5. Determine that each pond has the equivalent design capacity shown in Drawings P-426-1 and P-426-2.

INSPECTION NOTES: Date_____, Inspector, _____.

426.5.7 Check Soils Tests for Compacted Areas

INSPECTION TASK 426.5.7 Check Soils Tests for Compacted Areas: Review all soils data for fill areas. Determine that the moisture content, material size and compaction requirements in Specification S-426-1 and Quality Plan QP-426-1 are achieved.

INSPECTION NOTES: Date_____, Inspector, _____.

426.5.8 Observe/Verify Installation of Liner Material

INSPECTION TASK 426.5.8 Observe/Verify Installation of Liner Material: Liner installation will be observed to determine conformance with the lines, grades, and details shown in Drawings P-400-1 and P-400-2. Field changes will be noted and field drawings checked for those changes.

INSPECTION NOTES: Date_____, Inspector, _____.

426.5.9 Check Liner Seam Tests (Nondestructive)

INSPECTION TASK 426.5.9 Check Liner Seam Tests (Nondestructive): Review liner seam test procedures and results to determine conformance with Quality Control Procedure QC-19. Check retests of failed seams.

INSPECTION NOTES: Date_____, Inspector, _____.

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426.5.10 Check Liner Seam Tests (Destructive)

INSPECTION TASK 426.5.10 Check Liner Seam Tests (Destructive): Review liner seam test procedures and results to determine conformance with Quality Control Procedure QC-19. Check retests of failed seams.

INSPECTION NOTES: Date_____, Inspector, _____.

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426.5.11 Observe/Verify Shotcrete Placement

INSPECTION TASK 426.5.11 Observe/Verify Shotcrete Placement: This construction task is to be observed to determine that shotcrete has been placed in the proper locations in accordance with Drawings P-426-1 and P-426-2. Specific requirements for the placement of shotcrete must be in accordance with Specification S-426-1, Part III, Section 5 and Quality Plan QP-426-1, Part II, Section 2.6 and QC Procedure QC-20.

INSPECTION NOTES: Date_____, Inspector, _____.

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426.5.12 Review Shotcrete Test Data

INSPECTION TASK 426.5.12 Review Shotcrete Test Data: The task shall be inspected to determine that compressive strength tests and other tests are taken to ensure proper strength of the shotcrete. Test results shall be reviewed to determine that all Specifications in S-426-1 are met. Frequency of the tests shall also be verified.

INSPECTION NOTES: Date_____, Inspector, _____.

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426.6 NEW COLLECTION SYSTEM

INSPECTION TASK 426.6 NEW COLLECTION SYSTEM: This construction task is to be inspected according to the details presented in Sections 426.6.5 through 426.6.10. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-426-2 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

426.6.1 Review/Approve Soil Characterization Survey

INSPECTION TASK 426.6.1 Review/Approve the Soil Characterization Survey: The soil characterization survey is to be reviewed for compliance with Specification S-SCP-1. Assure that scintillometer measurements have been made and properly recorded.

INSPECTION NOTES: Date_____, Inspector, _____.

426.6.2 Verify Contaminated Soil Removal

INSPECTION TASK 426.6.2 Verify Contaminated Soils Removal: Verify that any contaminated soils or other materials have been removed from the area of the new collection systems. Review scintillometer surveys and other available information.

INSPECTION NOTES: Date_____, Inspector, _____.

426.6.3 Observe Excavation of Drainage Trenches

INSPECTION TASK 426.6.3 Observe Excavation of Drainage Trenches: This construction task will be observed to confirm location, lines, and grades, variations from these lines and grades and reasons for the field changes. Trenches shall be graded to a surface tolerance of plus or minus 0.1 foot over a 10 foot distance and sharp protrusions shall be removed.

INSPECTION NOTES: Date_____, Inspector, _____.

426.6.4 Verify Trench Locations and Grades

INSPECTION TASK 426.6.4 Verify Trench Locations and Grades: Verify that the trench location and grades conform to Specification S-426-1 and Drawings P-426-1 and P-426-2 by field observation and review of the survey reports. Alignments and excavations may vary due to field conditions and changes should be noted in the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

426.6.5 Observe Trench Liner Installation

INSPECTION TASK 426.6.5 Observe Trench Liner Installation: Liner installation will be observed to determine conformance with the lines, grades, and details shown in Drawings P-426-1, P-426-2, and P-426-3. Field changes will be noted and field drawings checked for those changes. Liner will be installed prior to placement of drainage material and drain pipe.

INSPECTION NOTES: Date_____, Inspector, _____.

426.6.6 Observe Drain Pipe/Materials Placement

INSPECTION TASK 426.6.6 Observe Drain Pipe/Materials Placement: This construction task shall be observed to confirm that the correct materials are placed in a manner to minimize segregation and avoid damage to the drain pipes. Perforations in the drain pipe should be placed facing down. Placement should conform to Specification S-426-1 and Drawing P-426-2.

INSPECTION NOTES: Date_____, Inspector, _____.

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426.6.7 Check Drain Pipe/Materials Specifications and Tests

INSPECTION TASK 426.6.7 Check Drain Pipe/Materials Specifications and Tests: Drainage materials and drain pipe shall conform to Specification S-426-1 and conform to Quality Control Procedures QC-6, QC-9, and QC-11. Lining shall be as shown on Drawing P-426-3. Field observations and review of QC reports will confirm the materials.

INSPECTION NOTES: Date_____, Inspector, _____.

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426.6.8 Check Location and Construction of Sumps

INSPECTION TASK 426.6.8 Check Location and Construction of Sumps: CRP sumps shall conform to Specification S-426-1 and be constructed to the lines and grades shown on Drawing P-426-3. Type of sump material and backfill should be observed and noted.

INSPECTION NOTES: Date_____, Inspector, _____.

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426.6.9 Observe/Verify Placement of Clayey Linings and Caps

INSPECTION TASK 426.6.9 Observe/Verify Placement of Clayey Linings and Caps: Determine that the clayey linings and caps are placed above and below the drains in accordance with Specification S-426-1, Part III, Sections 3.5 and 3.8. Verify that soils tests for size, moisture content and compaction are taken.

INSPECTION NOTES: Date_____, Inspector, _____.

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426.6.10 Review Soils Tests of Compacted Materials

INSPECTION TASK 426.6.10 Review Soils Tests of Compacted Materials: Review soils test data taken for Proctor Density, moisture, compaction, and size analysis to determine conformance with Specification S-426-1 and Quality Plan QP-426-1 for fill materials. Review laboratory calculations and worksheets.

INSPECTION NOTES: Date_____, Inspector, _____.

426.7 FINAL CLEANUP OF HILLSIDE COLLECTION SYSTEM

INSPECTION TASK 426.7 FINAL CLEANUP OF HILLSIDE COLLECTION SYSTEM: This construction task is to be inspected according to the details presented in Sections 426.7.1 through 426.7.4. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-426-3 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

426.7.1 Review/Approve Soil Characterization Survey

INSPECTION TASK 426.7.1 Review/Approve the Soil Characterization Survey: The soil characterization survey is to be reviewed for compliance with Specification S-SCP-1. Assure that scintillometer measurements have been made and properly recorded.

INSPECTION NOTES: Date_____, Inspector, _____.

426.7.2 Observe/Verify Removal of Construction Materials

INSPECTION TASK 426.7.2 Observe/Verify Removal of Construction Materials: Inspect the site to determine that all pipes, liner material and other construction materials have been removed from the site. Determine that all contaminated material has been disposed of on the tailings piles or in the Burbank Quarry.

INSPECTION NOTES: Date_____, Inspector, _____.

426.7.3 Observe/Verify Removal of Contaminated Soils

INSPECTION TASK 426.7.3 Observe/Verify Removal of Contaminated Soils: Verify that any contaminated soils or other materials have been removed from the Hillside Seepage Collection System along the ditches, ponds, and sumps. Review scintillometer surveys and other available information.

INSPECTION NOTES: Date_____, Inspector, _____.

426.7.4 Review/Approve Soils Confirmation Investigation

INSPECTION TASK 426.7.4 Review/Approve Soils Confirmation Investigation: This soil confirmation investigation will be reviewed for conformance with Specification S-SCP-1. Scintillometer measurements, soil sample results and survey procedures will be reviewed. The results must meet the appropriate criteria in Table 4.1.2-1 of the RAP.

INSPECTION NOTES: Date_____, Inspector, _____.

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426.8 FINAL RECLAMATION

INSPECTION TASK 426.8 FINAL RECLAMATION: This construction task is to be inspected according to the details presented in Sections 426.8.1 through 426.8.3. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-426-4 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

426.8.1 Observe/Verify Final Site Grading

INSPECTION TASK 426.8.1 Observe/Verify Final Site Grading: Inspect the site to determine that the site grading conforms to the approximate lines and grades shown on Drawings P-426-1, P-426-2, and P-426-3. Verify that material is uncontaminated and that final slopes are less than 3H:1V.

INSPECTION NOTES: Date_____, Inspector, _____.

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426.8.2 Observe/Verify Placement of Random Fill Cover

INSPECTION TASK 426.8.2 Observe/Verify Placement of Random Fill Cover: Inspect the site to determine that the random fill cover conforms to the location, thickness, and gradation requirements of Specification S-426-1. Verify that material is uncontaminated and that final slopes are less than 3H:1V. Natural slopes may exceed 3H:1V.

INSPECTION NOTES: Date_____, Inspector, _____.

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426.8.3 Observe/Verify Seeding of Disturbed Areas

INSPECTION TASK 426.8.3 Observe/Verify Seeding of Disturbed Areas: Inspect the site to determine that all disturbed areas have been reseeded with the seed mixture, application method and application rate required in Specification S-426-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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428 NEW EVAPORATION PONDS

INSPECTION TASK 428 NEW EVAPORATION PONDS: This project area is to be inspected according to the details presented in Sections 428.5 through 428.9. Refer to those sections for specific details. After approval of these sections, the Final Construction Report is to be reviewed and approval noted in the Document Control Log (DOCLOG).

428.5 SURFACE RUNOFF CONTROL FACILITIES (DITCH 6)

INSPECTION TASK 428.5 SURFACE RUNOFF CONTROL FACILITIES (DITCH 6): This construction task is to be inspected according to the details presented in Sections 428.5.1 through 428.5.5. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-428-1 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

428.5.1 Review/Approve the Soil Characterization Survey

INSPECTION TASK 428.5.1 Review/Approve the Soil Characterization Survey: The soil characterization survey is to be reviewed for compliance with Specification S-SCP-1. Assure that scintillometer measurements have been made and properly recorded.

INSPECTION NOTES: Date_____, Inspector, _____.

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428.5.2 Verify Contaminated Soils Removal

INSPECTION TASK 428.5.2 Verify Contaminated Soils Removal: Verify that any contaminated soils or other materials have been removed from the area surrounding the Club Ranch Ponds and in the area of the ditches. Review scintillometer surveys and other available information.

INSPECTION NOTES: Date_____, Inspector, _____.

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428.5.3 Check Ditch Location(s)

INSPECTION TASK 428.5.3 Check Ditch Location(s): This construction task is to be inspected for conformance with Drawings P-428-1 and P-428-2. Note any significant changes in ditch locations and assure that such changes are noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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428.5.4 Measure Ditch Dimensions and Gradients

INSPECTION TASK 428.5.4 Measure Ditch Dimensions and Gradients: Measure the width, depth sideslope and gradient of the ditch(es) to assure conformance with the details on Drawings P-428-1 and P-428-2. Note any significant changes and assure that such changes are noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

428.5.5 Calculate Ditch Capacity

INSPECTION TASK 428.5.5 Calculate Ditch Capacity: Using the ditch measurements, calculate or estimate the ditch capacity. Use the following equation Q= 1.49/n R(2/3) S(1/2) A. Assure that capacity specifications are met in accordance with Specification S-428-1.

INSPECTION NOTES: Date_____, Inspector, _____.

428.6 SITE PREPARATION

INSPECTION TASK 428.6 SITE PREPARATION: This construction task is to be inspected according to the details presented in Sections 428.6.1 through 428.6.5. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-428-2 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

428.6.1 Observe/Verify Site Cleaning and Stripping

INSPECTION TASK 428.6.1 Observe/Verify Site Cleaning and Stripping: This task is to be inspected to determine that all existing vegetation, roots and other unsuitable foundation materials are removed from the site prior to embankment construction in accordance with Specification S-428-1, Part III, Section 3.4.

INSPECTION NOTES: Date_____, Inspector, _____.

428.6.2 Observe Stockpiling of Top Soil

INSPECTION TASK 428.6.2 Observe Stockpiling of Top Soil: Determine that all topsoil from the site is stockpiled for future reclamation. Determine that a uncontaminated topsoil stockpile is established.

INSPECTION NOTES: Date_____, Inspector, _____.

428.6.3 Observe Contaminated Materials Removal

INSPECTION TASK 428.6.3 Observe Contaminated Materials Removal: This construction task will be observed to document that removal activities are conducted in good and workmanlike manner and that trucks leaving the contaminated area are clean.

INSPECTION NOTES: Date_____, Inspector, _____.

428.6.4 Observe Contaminated Materials Transport

INSPECTION TASK 428.6.4 Observe Contaminated Materials Transport: This construction task will be observed to confirm that the trucks are properly covered and that excess spillage does not occur. Document cleanup of spilled material.

INSPECTION NOTES: Date_____, Inspector, _____.

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428.6.5 Observe Contaminated Material Placement

INSPECTION TASK 428.6.5 Observe Contaminated Material Placement: This construction task will be observed to confirm that the contaminated soils are placed in the tailings piles and crystals are placed in the Burbank Quarry according to Specification S-428-1. Refer to Sections 404.6 and 423.7 for specific inspection tasks.

INSPECTION NOTES: Date_____, Inspector, _____.

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428.7 EARTHWORK FOR POND CONSTRUCTION

INSPECTION TASK 428.7 EARTHWORK FOR POND CONSTRUCTION: This construction task is to be inspected according to the details presented in Sections 428.7.1 through 428.7.6. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-428-3 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

428.7.1 Verify Lines, Grades and Dimensions of Pond

INSPECTION TASK 428.7.1 Verify Lines, Grades and Dimensions of Pond: This task shall be confirmed by measuring the lines, grades, and dimensions of the ponds, including sideslope grades, during construction. The dimensions shall conform with Drawing P-428-1 and P-428-2. Note any changes during construction.

INSPECTION NOTES: Date_____, Inspector, _____.

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428.7.2 Observe Placement and Compaction of Embankment Earthwork

INSPECTION TASK 428.7.2 Observe Placement and Compaction of Embankment Earthwork: This task shall be observed to determine that the distribution and gradation of materials throughout the embankment meets the requirements in Specification S-428-1. The material shall be free of any streaks, lenses, pockets or layers. Lift thickness shall not exceed 1 foot (0.30 m).

INSPECTION NOTES: Date_____, Inspector, _____.

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428.7.3 Check Soils Tests of Embankment Earthwork

INSPECTION TASK 428.7.3 Check Soils Tests of Embankment Earthwork: Soils tests for moisture, size, gradation, Proctor Density, and compaction shall be reviewed to determine conformance with Specification S-428-1, Part III, Section 4.4.4. Tests shall be conducted in accordance with Quality Plan QP-428.1. Note retest of any failed materials.

INSPECTION NOTES: Date_____, Inspector, _____.

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428.7.4 Observe Placement of Clayey Base

INSPECTION TASK 428.7.4 Observe Placement of Clayey Base: This construction task will be observed to confirm that placement of the clayey base material conforms to Specification S-428-1 and lines and grades shown on Drawings P-428-1 and P-428-2. Elevations may be subject to change and any changes should be noted on the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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428.7.5 Check Clayey Base Soils Tests

INSPECTION TASK 428.7.5 Check Clayey Base Soils Tests: The soil test confirmation will be done in accordance to QP-428-1 by observing field and laboratory testing and reviewing QC reports. Failed tests will require retesting.

INSPECTION NOTES: Date_____, Inspector, _____.

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428.7.6 Verify Fugitive Dust Control Measures

INSPECTION TASK 428.7.6 Verify Fugitive Dust Control Measures: This task shall be inspected in the field to determine that all fugitive dust control measures in Specification S-428-1, Part I, Section 4.0 and the AQCD permit are being performed.

INSPECTION NOTES: Date_____, Inspector, _____.

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428.8 LEAK DETECTION SYSTEM

INSPECTION TASK 428.8 LEAK DETECTION SYSTEM: This construction task is to be inspected according to the details presented in Sections 428.8.1 through 428.8.8. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-428-4 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

428.8.1 Observe Excavation of Drainage Trenches

INSPECTION TASK 428.8.1 Observe Excavation of Drainage Trenches: This construction task will be observed to confirm location, lines, and grades, variations from these lines and grades and reasons for the field changes. Trenches shall be graded to a surface tolerance of plus or minus 0.1 foot over a 10 foot distance and sharp protrusions shall be removed.

INSPECTION NOTES: Date_____, Inspector, _____.

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428.8.2 Verify Trench Locations and Grades

INSPECTION TASK 428.8.2 Verify Trench Locations and Grades: Verify that the trench location and grades conform to Specification S-428-1 and Drawings P-428-1 and P-428-2 by field observation and review of the survey reports. Alignments and excavations may vary due to field conditions and changes should be noted in the field office drawings.

INSPECTION NOTES: Date_____, Inspector, _____.

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428.8.3 Observe Trench Liner Installation

INSPECTION TASK 428.8.3 Observe Trench Liner Installation: Liner installation will be observed to determine conformance with the lines, grades, and details shown in Drawings P-428-1 and P-428-2. Field changes will be noted and field drawings checked for those changes. Liner will be installed prior to placement of drainage material and drain pipe.

INSPECTION NOTES: Date_____, Inspector, _____.

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428.8.4 Check Liner Seam Tests (Nondestructive)

INSPECTION TASK 428.8.4 Check Liner Seam Tests (Nondestructive): Review liner seam test procedures and results to determine conformance with Quality Control Procedure QC-19. Check retests of failed seams.

INSPECTION NOTES: Date_____, Inspector, _____.

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428.8.5 Check Liner Seam Tests (Destructive)

INSPECTION TASK 428.8.5 Check Liner Seam Tests (Destructive): Review liner seam test procedures and results to determine conformance with Quality Control Procedure QC-19. Check retests of failed seams.

INSPECTION NOTES: Date_____, Inspector, _____.

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428.8.6 Observe Drain Pipe/Materials Placement

INSPECTION TASK 428.8.6 Observe Drain Pipe/Materials Placement: This construction task shall be observed to confirm that the correct materials are placed in a manner to minimize segregation and avoid damage to the drain pipes. Holes in the drain pipe should be placed facing down. Placement should conform to Specification S-428-1 and Drawing P-428-2.

INSPECTION NOTES: Date_____, Inspector, _____.

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428.8.7 Check Drain Pipe/Materials Specifications and Tests

INSPECTION TASK 428.8.7 Check Drain Pipe/Materials Specifications and Tests: Drainage materials and drain pipe shall conform to Specification S-428-1 and conform to Quality Control Procedures QC-6, QC-9, and QC-11. Lining shall be as shown on Drawing P-428-2. Field observations and review of QC reports will confirm the materials.

INSPECTION NOTES: Date_____, Inspector, _____.

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428.8.8 Check Location/Construction of CRP Sumps

INSPECTION TASK 428.8.8 Check Location/Construction of CRP Sumps: CRP sumps shall conform to Specification S-428-1 and be constructed to the lines and grades shown on Drawing P-428-2. Type of sump material and backfill should be observed and noted.

INSPECTION NOTES: Date_____, Inspector, _____.

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428.9 INSTALLATION OF SYNTHETIC LINERS

INSPECTION TASK 428.9 INSTALLATION OF SYNTHETIC LINERS: This construction task is to be inspected according to the details presented in Sections 428.9.1 through 428.9.5. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-428-5 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

428.9.1 Inspect Liner Material

INSPECTION TASK 428.9.1 Inspect Liner Material: Liner material will be inspected to determine that it meets the thickness and quality requirements in Specification S-428-1.

INSPECTION NOTES: Date_____, Inspector, _____.

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428.9.2 Observe Liner Installation

INSPECTION TASK 428.9.2 Observe Liner Installation: Liner installation will be observed to determine conformance with the lines, grades, and details shown in Drawings P-428-1 and P-428-2. Field changes will be noted and field drawings checked for those changes.

INSPECTION NOTES: Date_____, Inspector, _____.

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428.9.3 Check Liner Seam Tests (Nondestructive)

INSPECTION TASK 428.9.3 Check Liner Seam Tests (Nondestructive): Review liner seam test procedures and results to determine conformance with Quality Control Procedure QC-19. Check retests of failed seams.

INSPECTION NOTES: Date_____, Inspector, _____.

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428.9.4 Check Liner Seam Tests (Destructive)

INSPECTION TASK 428.9.4 Check Liner Seam Tests (Destructive): Review liner seam test procedures and results to determine conformance with Quality Control Procedure QC-19. Check retests of failed seams.

INSPECTION NOTES: Date_____, Inspector, _____.

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428.9.5 Review Liner Installer QC Report

INSPECTION TASK 428.9.5 Review Liner Installer QC Report: Review the liner installation quality control report to determine that the liner is certified to meet intended application, field seams have been tested and repaired and that no holes, blisters, or other defects exist in the material.

INSPECTION NOTES: Date_____, Inspector, _____.

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429 PONDED LIQUIDS AND SURFACE RUNOFF

INSPECTION TASK 429 PONDED LIQUIDS AND SURFACE RUNOFF: This project area is to be inspected according to the details presented in Section 429.5. Refer to that section for specific details. After approval of the section, the Final Construction Report is to be reviewed and approval noted in the Document Control Log (DOCLOG).

429.5 TRANSFER OF LIQUIDS WITHIN THE MILL CIRCUITS

INSPECTION TASK 429.5 TRANSFER OF LIQUIDS WITHIN THE MILL CIRCUITS: This construction task is to be inspected according to the details presented in Section 429.5.1. Refer to that section for specific details. After approval of that section, Compliance Report CR-429-1 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file. Other Compliance Reports for Ponded Liquids and Surface Runoff are listed in the respective cleanup areas.

429.5.1 Verify Mill Circuit Liquids are Pumped to Lined Club Ranch Ponds

INSPECTION TASK 429.5.1 Verify Mill Circuit Liquids are Pumped to Lined Club Ranch Ponds: This inspection task is to verify that mill circuit liquids are properly transferred to the lined evaporation ponds.

INSPECTION NOTES: Date_____, Inspector, _____.

_____

_____

_____

430 GROUND WATER

INSPECTION TASK 430 GROUND WATER: This project area is to be inspected according to the details presented in Sections 430.5 through 430.6. Refer to those sections for specific details. After approval of these sections, the Final Construction Report is to be reviewed and approval noted in the Document Control Log (DOCLOG).

430.5.1 Observe/Verify Replacement Well Construction

INSPECTION TASK 430.5.1 Observe/Verify Replacement Well Construction: If replacement wells are needed, their construction is to be inspected for conformance with Specification S-430-1, Figure 2 for Club Mesa, Salt Wash Member replacement wells, Figure 3 for Club Mesa Kayenta-Wingate replacement wells, and Figure 4 for River Valley Kayenta-Wingate replacement wells. The well depths and locations are specified in S-430-1. The abandoned well location and plugging procedure should be described.

INSPECTION NOTES: Date_____, Inspector, _____.

_____

_____

_____

430.5.2 Check Well Construction Specifications

INSPECTION TASK 430.5.2 Check Well Construction Specifications: Verify that the construction specifications for any replacement wells are in conformance with Specification S-430-1, Part III, Section 2.0, Part IV, Section 2.0 or Part V, Section 2.0.

INSPECTION NOTES: Date_____, Inspector, _____.

_____

_____

_____

430.5.3 Verify Depth of Well(s)

INSPECTION TASK 430.5.3 Verify Depth of Well(s): Verify the replacement well depth and determine that this depth is consistent with the well being replaced.

INSPECTION NOTES: Date_____, Inspector, _____.

_____

_____

_____

430.6 INSTALLATION OF WITHDRAWAL WELLS

INSPECTION TASK 430.6 INSTALLATION OF WITHDRAWAL WELLS: This construction task is to be inspected according to the details presented in Sections 430.6.1 through 430.6.3. Refer to those sections for specific details. After approval of these sections, Compliance Report CR-430-2 is to be reviewed and approval noted in the APPROVAL field of the Construction Tracking and Inspection System file.

430.6.1 Verify the Number and Location of Wells

INSPECTION TASK 430.6.1 Verify the Number and Location of Wells: Review the ground water model submitted by Umetco to determine the number and location of wells proposed (and accepted) by the state. Verify the number of wells and their location in the field.

INSPECTION NOTES: Date_____, Inspector, _____.

_____

_____

_____

430.6.2 Check Well Construction Specifications

INSPECTION TASK 430.6.2 Check Well Construction Specifications: Inspect the wells during construction to determine conformance with Specification S-430-1, Figure 4.

INSPECTION NOTES: Date_____, Inspector, _____.

_____

_____

_____

430.6.3 Verify Depth and Pumping Rate of Well(s)

INSPECTION TASK 430.6.3 Verify Depth and Pumping Rate of Well(s): After well development, inspect the wells to determine that the depth and pumping rate are consistent with the model supplied by Umetco and approved by the state.

INSPECTION NOTES: Date_____, Inspector, _____.

_____

_____

_____

3.0 MONITORING OVERSIGHT PLAN

The Monitoring Oversight Plan is a computer-based system by which various monitoring activities are checked and the monitoring results evaluated. Monitoring activities at Uravan are divided into three basic categories: 1) Operational Monitoring (OPMON), 2) Environmental Monitoring (ENMON), and 3) Post Reclamation Monitoring (POMON). Each of these monitoring activities, shown in Table 6, are discussed in the following sections.

3.1 Operational Monitoring System (OPMON)

Operational monitoring at Uravan is conducted to assure that remedial activities do not cause a release of contaminants to the environment. The State's oversight of the operational monitoring is to assure that the monitoring is being conducted properly and that the monitoring results meet Remedial Action Plan requirements and Quality Plan guidelines.

The Operational Monitoring System is tied directly to Environment Procedures developed by Umetco and approved by the State. Table 6 lists the Operational Monitoring activities at Uravan and the corresponding monitoring procedures. The Operational Monitoring System is designed to be input into dBase III Plus. Table 7 shows the operational monitoring activities to be checked by the State's on-site coordinator (OSC). A Review Form has been included in the MEMO FIELD of the dBase III Plus program. This MEMO FIELD is described in detail in Table 8 and should be used by the OSC on a quarterly basis as a check list of specific items to be reviewed and inspected. The memo field can also be used to record the results of the inspections. It is anticipated that the OSC will inspect the operational monitoring activities on a quarterly basis and such inspections will be tied to the submittal of quarterly reports by Umetco. Both the independent field inspection and review of the quarterly report should be used to fill in Table 7.

Table 6. Monitoring oversight plan, Uravan Project.

FILE NUMBER	ACTIVITY	MONITORING PROCEDURE(S)
500	OPERATIONAL MONITORING	
501	EVAPORATION IMPOUNDMENT MONITORING	E-1.8
502	TAILINGS SEEPAGE MONITORING	E-2.1.1
503	HILLSIDE SEEPAGE MONITORING	E-2.1.2
504	FUGITIVE DUST CONTROL	E-2.2
505	DIVERSION DITCH INSPECTION	E-3.4
506	RUNOFF CONTROL MONITORING	E-3.7
507	SEDIMENT COLLECTION MONITORING	E-3.8
508	STORMWATER DISCHARGE MONITORING	E-4.3
509	TAILING STABILITY MONITORING	E-4.5
510	CLUB RANCH PUMPBACK SYSTEM	E-1.6
600	ENVIRONMENTAL MONITORING	
601	GROUND WATER MONITORING	
601.1	Club Mesa - Salt Wash Wells	E-2.4
601.2	Club Mesa - Kayenta/Wingate Wells	E-2.5
601.3	River Valley -Kayenta/Wingate Wells	E-2.6
601.4	Compliance Well CRP-8	E-2.6
602	SURFACE WATER MONITORING - SAN MIGUEL RIVER	
602.1	Surface Water Quality and Quantity	E-3.6
602.2	Aquatic Bioassay	E-1.5
603	SOILS SURVEY	S-SCP-1, E-4.0, E-4.1, E-4.2, E-4.4 QC-24 and QC-25
603.1	Base Line Soils Study	
603.2	Soils Characterization Investigations	
603.3	Soils Confirmation Investigations	
604	AIR QUALITY MONITORING	
604.1	Air Particulate Monitoring	E-1.1
604.2	Ambient Radon Monitoring	E-1.2
700	POST RECLAMATION MONITORING	
701	REVEGETATION ANALYSIS	
702	SURFACE CONFIGURATION/EROSION CONTROL	
703	TAILINGS REPOSITORY STABILITY	

Table 7. Operational monitoring system, Uravan Project.

DATE	EVAPORATION IMPOUNDMENT MONITORING (EVAPMON)	TAILINGS SEEPAGE MONITORING (TAILSEEP)	HILLSIDE SEEPAGE MONITORING (HILLSEEP)	FUGITIVE DUST CONTROL (FUGDUST)	DIVERSION DITCH INSPECTION (DITCHINSP)	RUNOFF CONTROL MONITORING (RUNOFFCOL)	SEDIMENT COLLECTION MONITORING (SEDCOLCT)	TAILING STABILTIY MONITORING (TAILSTAB)	CLUB RANCH PUMPBACK SYSTEM (CR-PUMP)	MEMO FIELD REVIEW (REFORM)
1st Qtr 1988										
2nd Qtr 1988										
3rd Qtr 1988										
4th Qtr 1988										
1st Qtr 1989										
2nd Qtr 1989										
3rd Qtr 1989										
4th Qtr 1989										
1st Qtr 1990										
(etc.)										

Key for Operation Monitoring

A - Adequate
I - Inadequate
NI - Not Inspected
NS - Not Submitted
CA - Corrective Action

Table 8. Operational monitoring memo field review form.

500 OPERATIONAL MONITORING

Field procedures for operational monitoring need to be evaluated on a quarterly or semi-annual basis. For most of the monitoring tasks, either field inspection or review of records will be required. Conformance with the required procedures is the primary objective. Review of the data generated will also be needed to detemine if any action levels have been exceeded and what corrective actions have been taken.

Specific procedures for each monitoring item as well as inspection tasks are discussed below. Each time the operational monitoring items are reviewed an inspection report shall be entered in the memo field entitled COMPREPORT.

501 (EVAPMON) EVAPORATION IMPOUNDMENT MONITORING (PROCEDURE E-1.8)

Evaporation Impoundment Monitoring is outlined in Procedure E-1.8. This monitoring is an ongoing process performed on the Club Ranch Ponds CRP-1 through CRP-8. Both physical and chemical monitoring are performed. The chemical quality of the ponds is analyzed on an annual basis. The primary inspection task is _____.

Inspection Review Date: _____
Inspector: _____
Changes and Corrective Actions: _____
_____

Review Items	YES	NO
1. Inspection and sampling frequency meets the procedure requirements.	___	___
2. Results of inspections and tests are consistent with design specifications or environmental procedures.	___	___
3. QA/QC procedures were followed.	___	___
4. Documentation and record keeping is adequate.	___	___

502 (TAILSEEP) TAILING SEEPAGE MONITORING (PROCEDURE E-2.1.1)

Tailings Seepage Monitoring is Procedure E-2.1.1. The purpose of this monitoring system is to determine the quantity of seepage collected from the toe drains of the tailings piles. Flow measurements and pumping times are recorded. The inspection tasks are a determination of conformance with the procedure and checking the records with special attention to the average and maximum flow rates.

Inspection Review Date: _____
Inspector: _____
Changes and Corrective Actions: _____
_____

Review Items	YES	NO
1. Inspection and sampling frequency meets the procedure requirements.	___	___
2. Results of inspections and tests are consistent with design specifications or environmental procedures.	___	___

3. QA/QC procedures were followed. ___ ___
4. Documentation and record keeping is adequate. ___ ___

503 (HILLSEEP) HILLSIDE SEEPAGE MONITORING (PROCEDURE E-2.1.2)
Hillside Seepage Monitoring is performed according to Procedure E-2.1.2. The purpose of this monitoring system is to determine the quality and quantity of liquid collected by the Hillside Seepage Collection System. In addition to review of procedures used, the chemical quality will need to be compared to Table 5.4.3.2-1 and Table 5.4.3.2-3 of the Remedial Action Plan. Monitoring frequencies are described both in Procedure E-2.1.2 and the Remedial Action Plan.

Inspection Review Date: _____
Inspector: _____
Changes and Corrective Actions: _____

Review Items	YES	NO
1. Inspection and sampling frequency meets the procedure requirements.	___	___
2. Results of inspections and tests are consistent with design specifications or environmental procedures.	___	___
3. QA/QC procedures were followed.	___	___
4. Documentation and record keeping is adequate.	___	___

504 (FUGDUST) FUGITIVE DUST CONTROL (PROCEDURE E-2.2)
The Fugitive Dust Control Plan is described in Procedure E-2.2. Control of fugitive dust is an ongoing process. Sprinkling of roadways, use of wheel wash facilities and limiting of vehicle speeds are the primary measures taken. Other measures for specific construction areas are outlined in E-2.2. Review of records and field observations of implementation are the inspection tasks to be performed.

Inspection Review Date: _____
Inspector: _____
Changes and Corrective Actions: _____

Review Items	YES	NO
1. Inspection and sampling frequency meets the procedure requirements.	___	___
2. Results of inspections and tests are consistent with design specifications or environmental procedures.	___	___
3. QA/QC procedures were followed.	___	___
4. Documentation and record keeping is adequate.	___	___

505 (DITCHINSP) DIVERSION DITCH INSPECTION (PROCEDURE E-3.4)
Diversion Ditch Inspection is found in Procedure E-3.4. Diversion ditches will be placed around many of the cleanup areas to intercept runon and divert it away from contaminated areas. This inspection program will be ongoing. Field observation of all ditches is the primary inspection task. Notification of Umetco regarding problem areas and implementation of corrective actions should also be noted.

Inspection Review Date: _____
Inspector: _____
Changes and Corrective Actions: _____

Review Items	YES	NO
1. Inspection and sampling frequency meets the procedure requirements.	___	___
2. Results of inspections and tests are consistent with design specifications or environmental procedures.	___	___
3. QA/QC procedures were followed.	___	___
4. Documentation and record keeping is adequate.	___	___

506 (RUNOFFCOL) RUNOFF CONTROL MONITORING (PROCEDURE E-3.7)
Runoff Collection Monitoring is described in Procedure E-3.7. The runoff collection system being monitored is around the A-Plant and B-Plant areas and overlaps the Hillside Seepage Collection System. Runoff control ditches and runoff control ponds will be monitored for maintenance. Further, contaminated water from this system cannot be discharged to waters of the state except as provided in Section 5.01 of the Remedial Action Plan. The primary tasks are inspection of maintenance and inspection records and review of records to determine that discharges to waters of the state have not occurred.

Inspection Review Date: _____
Inspector: _____
Changes and Corrective Actions: _____
_____

Review Items	YES	NO
1. Inspection and sampling frequency meets the procedure requirements.	___	___
2. Results of inspections and tests are consistent with design specifications or environmental procedures.	___	___
3. QA/QC procedures were followed.	___	___
4. Documentation and record keeping is adequate.	___	___

507 (SEDCOLL) SEDIMENT COLLECTION MONITORING (PROCEDURE E-3.8)
Sediment Catchment Monitoring is outlined in Procedure E-3.8. Sediment Collection Structures will be built in many areas of the site in order to trap contaminated material that could migrate off-site during the cleanup. The primary inspection task is to observe each barrier in the field to determine its performance, note any corrective actions needed and determine that sediment has been removed at appropriate times according to Procedure E-3.8.

Inspection Review Date: _____
Inspector: _____
Changes and Corrective Actions: _____
_____

Review Items	YES	NO
1. Inspection and sampling frequency meets the procedure requirements.	___	___
2. Results of inspections and tests are consistent with design specifications or environmental procedures.	___	___
3. QA/QC procedures were followed.	___	___
4. Documentation and record keeping is adequate.	___	___

508 (STORMWATER) STORMWATER DISCHARGE MONITORING (PROCEDURE E-4.3)
Stormwater Discharge Monitoring is described in Procedure E-4.3. This procedure is related to Runoff Collection Monitoring (Procedure E-3.7). The monitoring program is invoked when a storm event causes water to overflow the runoff control ponds. Overflow from each pond is to be sampled and chemically analyzed. Inspection tasks for this program include records review to determine if overflow occurred and observation of chemical quality.

Inspection Review Date: _____
Inspector: _____
Changes and Corrective Actions: _____
_____

Review Items	YES	NO
1. Inspection and sampling frequency meets the procedure requirements.	___	___
2. Results of inspections and tests are consistent with design specifications or environmental procedures.	___	___
3. QA/QC procedures were followed.	___	___
4. Documentation and record keeping is adequate.	___	___

509 (TAILSTABIL) TAILINGS STABILITY MONITORING (PROCEDURE E-4.5)
Tailing Stability Monitoring is discussed in Procedure E-4.5. The purpose of this monitoring program is to ascertain and predict changes and rates of change in tailings pile stability. Items to be monitored include tailings surface runoff control, side slope movement, phreatic levels, toe drain flow and collection channel maintenance.

Inspection tasks include records review and review of data plots specifically for side slope movement, phreatic levels and toe drain flow.

Inspection Review Date: _____
Inspector: _____
Changes and Corrective Actions: _____
_____

Review Items	YES	NO
1. Inspection and sampling frequency meets the procedure requirements.	___	___
2. Results of inspections and tests are consistent with design specifications or environmental procedures.	___	___
3. QA/QC procedures were followed.	___	___
4. Documentation and record keeping is adequate.	___	___

510 CLUB RANCH PUMPBACK SYSTEM (PROCEDURE E-1.6)
This procedure is to be prepared once the field investigations and analysis has been performed by Umetco.

Inspection Review Date: _____
Inspector: _____
Changes and Corrective Actions: _____
_____

Review Items	YES	NO
1. Inspection and sampling frequency meets the procedure requirements.	___	___

2. Results of inspections and tests are consistent with design specifications or environmental procedures. ___ ___
3. QA/QC procedures were followed. ___ ___
4. Documentation and record keeping is adequate. ___ ___

3.2 Environmental Monitoring System (ENMON)

Environmental monitoring at Uravan is designed to provide baseline data with regards to ground water, surface water, soils, and air and to determine the effectiveness of the cleanup activities. The Environmental Monitoring System is a computer-based system that evaluates the performance of the cleanup activities as work progresses at Uravan and, ultimately, that will be used to prepare a Performance Evaluation Report for inclusion in the Certification Report.

The Environmental Monitoring System is tied directly to Umetco's environmental monitoring procedures. Table 6 lists the environmental monitoring activities to be conducted by Umetco and the corresponding monitoring procedure. Table 9 shows the dBase III Plus computer-based spread sheet for tracking the environmental monitoring activities. This system is based on the annual review and analysis of the environmental data. Included in Table 9 is a MEMO FIELD for use by the OSC as a check list to determine if the sampling frequency and laboratory tests are as required in the environmental procedures. The specific check list for this MEMO FIELD is set forth in Table 10.

It is anticipated that the State's on-site coordinator (OSC) will review the monitoring data annually using the Annual Report prepared by Umetco as a basis. Data contained in this report for each of the environmental monitoring activities should be carefully evaluated for the first two years as baseline information is established. Once this data has been analyzed, key parameters should be selected and a data base developed for input into a computer-based spread sheet and graphics package such as LOTUS. Key parameters can then be input into this program on an annual basis and the results of the monitoring activities evaluated as cleanup work proceeds. Ultimately, this evaluation should be used to prepare the Performance Evaluation Report.

Table 9. Environmental monitoring system, Uravan Project.

FIELD NAME	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
GROUND WATER CLUB MESA - SALT WASH (GW - CM SW)													
GROUND WATER CLUB MESA - KAYENTA/WINGATE (GW - CM KW)													
GROUND WATER RIVER VALLEY - KAYENTA/WINGATE (GW - RV KW)													
GROUND WATER CRP-18 (GW - CRP18)													
SURFACE WATER QUALITY QUANTITY (SW QUAL/QUAN)													
AQUATIC BIOASSAY (AQU BIO)													
BASE LINE SOILS STUDY (B L - SOILS)													
SOILS CHARACTERIZATION INVESTIGATIONS (SOILS CHAR)													
SOILS CONFIRMATION INVESTIGATIONS (SOIL COP)													
AIR PARTICULATE MONITORING (AIR MON)													
AMBIENT RADON MONITORING (RAD MON)													
MEMO FIELD REVIEW FORM (REFORM)													

Table 10. Environmental monitoring memo field review form.

600 ENVIRONMENTAL MONITORING

Field and laboratory procedures need to be evaluated on at least an annual basis. Conformance to the required procedure is the primary objective of the memo field in this Table.

601 GROUND WATER

Field and laboratory procedures for sample collection and analysis should be observed or reviewed by the on-site coordinator or his/her designated representative. Field methods set forth in E-2.4 (Ground Water Monitoring: Club Mesa-Salt Wash), E-2.5 (Ground Water Monitoring: Club Mesa-Kayenta/Wingate) and E-2.6 (Ground Water Monitoring: River Valley-Kayenta/Wingate) should be used to evaluate field sampling procedures and measurements and the following check list considered.

Inspection Activity	Adequate	Inadequate
1) Proper field equipment was used:		
2) Water level elevation(s) were measured:		
3) Appropriate sampling and pumping procedures were used:		
4) pH, conductivity, and temperature were measured:		

601.1 GROUND WATER CLUB MESA - SALT WASH (PROCEDURE E-2.4)

Inspection Review Date:_____

Inspector:_____

Changes and Corrective Actions:_____

_____

Review Items	YES	NO
1. Sampling frequency meets or exceeds the procedure requirements.	___	___
2. Sampling and handling procedures follow the proper QC/QA requirements.	___	___
3. Laboratory results are properly documented and follow QC/QA requirements.	___	___
4. Tests results are consistent with past analyses.	___	___

601.2 GROUND WATER CLUB MESA - KAYENTA/WINGATE (PROCEDURE E-2.5)

Inspection Review Date:_____

Inspector:_____

Changes and Corrective Actions:_____

_____

Review Items	YES	NO
1. Sampling frequency meets or exceeds the procedure requirements.	___	___
2. Sampling and handling procedures follow the proper QC/QA requirements.	___	___

3. Laboratory results are properly documented and follow QC/QA requirements. ___ ___
4. Tests results are consistent with past analyses. ___ ___

601.3 GROUND WATER RIVER VALLEY - KAYENTA/WINGATE (PROCEDURE E-2.6)
Inspection Review Date:_____
Inspector:_____
Changes and Corrective Actions:_____
_____

Review Items	YES	NO
1. Sampling frequency meets or exceeds the procedure requirements.	___	___
2. Sampling and handling procedures follow the proper QC/QA requirements.	___	___
3. Laboratory results are properly documented and follow QC/QA requirements.	___	___
4. Tests results are consistent with past analyses.	___	___

601.4 GROUND WATER COMPLIANCE WELL CRP-18 (PROCEDURE E-2.6)
Inspection Review Date:_____
Inspector:_____
Changes and Corrective Actions:_____
_____

Review Items	YES	NO
1. Sampling frequency meets or exceeds the procedure requirements.	___	___
2. Sampling and handling procedures follow the proper QC/QA requirements.	___	___
3. Laboratory results are properly documented and follow QC/QA requirements.	___	___
4. Tests results are consistent with past analyses.	___	___

602 SURFACE WATER SAN MIGUEL RIVER
Field and laboratory procedures for sample collection and analysis should be observed or reviewed the the On-Site Coordinator or his/her designated representative. Field and laboratory procedures are set forth in Procedure E-3.6 and E-1.5. This information should be used to evaluate field sampling techniques to assure quality control and to review analytical results.

602.1 SURFACE WATER QUALITY/QUANTITY (PROCEDURE E-3.6)
Inspection Review Date:_____
Inspector:_____
Changes and Corrective Actions:_____
_____

Review Items	YES	NO
1. Sampling frequency meets or exceeds the procedure requirements.	___	___
2. Sampling and handling procedures follow the proper QC/QA requirements.	___	___
3. Laboratory results are properly documented and follow QC/QA requirements.	___	___
4. Tests results are consistent with past analyses.	___	___

602.2 AQUATIC BIOASSAY (PROCEDURE E-1.5)

Inspection Review Date:_____

Inspector:_____

Changes and Corrective Actions:_____

_____

Review Items	YES	NO
1. Sampling frequency meets or exceeds the procedure requirements.	___	___
2. Sampling and handling procedures follow the proper QC/QA requirements.	___	___
3. Laboratory results are properly documented and follow QC/QA requirements.	___	___
4. Tests results are consistent with past analyses.	___	___

603 SOILS SURVEY

A one-time baseline soil study to establish background concentrations of radium and metals in soils will be undertaken. Quality Plan S-SCP-1 shall be used to evaluate the sampling procedure. Subsequent Soils Characterization and Confirmation Investigations should be verified according to Procedure S-SCP-1.

603.1 BASE LINE SOILS STUDY (PROCEDURE S-SCP-1)

Inspection Review Date:_____

Inspector:_____

Changes and Corrective Actions:_____

_____

Review Items	YES	NO
1. Sampling frequency meets or exceeds the procedure requirements.	___	___
2. Sampling and handling procedures follow the proper QC/QA requirements.	___	___
3. Laboratory results are properly documented and follow QC/QA requirements.	___	___
4. Tests results are consistent with past analyses.	___	___

603.2 SOILS CHARACTERIZATION INVESTIGATIONS (PROCEDURE S-SCP-1)

Inspection Review Date:_____

Inspector:_____

Changes and Corrective Actions:_____

_____

Review Items	YES	NO
1. Sampling frequency meets or exceeds the procedure requirements.	___	___
2. Sampling and handling procedures follow the proper QC/QA requirements.	___	___
3. Laboratory results are properly documented and follow QC/QA requirements.	___	___
4. Tests results are consistent with past analyses.	___	___

603.3 SOILS CONFIRMATION INVESTIGATION (PROCEDURE S-SCP-1)

Inspection Review Date:_____

Inspector:_____

Changes and Corrective Actions:_____

_____

Review Items	YES	NO
1. Sampling frequency meets or exceeds the procedure requirements.	___	___
2. Sampling and handling procedures follow the proper QC/QA requirements.	___	___
3. Laboratory results are properly documented and follow QC/QA requirements.	___	___
4. Tests results are consistent with past analyses.	___	___

604 AIR MONITORING

Air particulate monitoring is discussed in Procedure E-1.1 and ambient radon monitoring is discussed in Procedure E-1.2. Particulate monitoring is performed using high volume air samples and Terradex Type F detectors are used to measure levels of Radon-222 gas. Conformance to these procedures is the objective of this monitoring activity.

604.1 AIR PARTICULATE MONITORING (PROCEDURE E-1.1)

Inspection Review Date:_____

Inspector:_____

Changes and Corrective Actions:_____

_____

Review Items	YES	NO
1. Sampling frequency meets or exceeds the procedure requirements.	___	___
2. Sampling and handling procedures follow the proper QC/QA requirements.	___	___
3. Laboratory results are properly documented and follow QC/QA requirements.	___	___
4. Tests results are consistent with past analyses.	___	___

604.2 AMBIENT RADON MONITORING (PROCEDURE E-1.2)

Inspection Review Date:_____

Inspector:_____

Changes and Corrective Actions:_____

_____

Review Items	YES	NO
1. Sampling frequency meets or exceeds the procedure requirements.	___	___
2. Sampling and handling procedures follow the proper QC/QA requirements.	___	___
3. Laboratory results are properly documented and follow QC/QA requirements.	___	___
4. Tests results are consistent with past analyses.	___	___

3.3 Post Reclamation Monitoring System (POMON)

The Post Reclamation Monitoring System is designed to assure that reclamation of the various project areas at Uravan is proceeding as planned and to develop a final Performance Evaluation Report for each of the project areas. Three activities, set forth in Table 6, are incorporated into the post reclamation monitoring: 1) Revegetation Analysis, 2) Surface Configuration and Erosion, and 3) Tailings Repository Stability. Table 11 shows the POMON system that can be placed in to the dBase III Plus program.

The results of the Post Reclamation Monitoring will be included in the Annual Report prepared by Umetco. These results should be reviewed by the State's On-Site Coordinator and the success or failure of reclamation procedures noted for each of the project areas in the Post Reclamation Monitoring System. Any additional reclamation procedures or mitigative measures taken should also be recorded in the system. This review should provide the necessary data so that the overall performance of the remedial activities can be fully assessed.

Table 11. Post operation monitoring, Uravan Project.

DATE	REVEGETATION ANALYSIS (REVEG)	SURFACE CONFIGURATION EROSION CONTROL (ERO CON)	TAILINGS PILE STABILITY (TAILSTAB)
1988			
1989			
1990			
1991			
1992			
1993			
1994			
1995			
1996			
1997			
1998			
1999			
2000			

3681/3694