

SITE MAINTENANCE PLAN
CSMRI SITE REMEDIATION

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SITE MAINTENANCE PLAN

CSMRI SITE REMEDIATION

1.0 HISTORY / INTRODUCTION

This *Site Maintenance Plan* addresses activities to be performed to manage the temporary cessation of remediation of the former CSMRI facility located in Golden, Colorado (Site).

The 6-acre Site is located on the south side of Clear Creek, east of U.S. Highway 6, in the northeast quarter of the northwest quarter of Section 33, Township 3 South, Range 70 West. The main entrance to the Site is located about 475 feet northwest of the intersection of Birch and 12th Street in Golden, Colorado. A chain-link fence restricts access to the Site, except for a small area located south of 12th Street known as the Clay Pits area.

Remediation activities started in April of 2004 included the excavation of soils and placement into transport bags and stockpiles. The bagged and stockpiled soils had been designated for transport to off-site landfills for disposal.

The initial remediation work resulted in the excavation and bagging of over 2,000 cubic yards of soils identified as Class One material. These quantities were greater than what had been previously identified or budgeted for in project planning. In order to allow evaluation of the nature of excavated material prior to disposal and to review overall remediation procedures, excavation activities were stopped at the Site on May 13, 2004.

Maintenance of open completed excavations, partially excavated areas, stockpiles, and bagged materials to protect public health and the environment is necessary. This Site Maintenance Plan addresses interim protective measures to be taken during the temporary shutdown.

The Site Maintenance Plan is a planning document only and may be changed as necessary to meet project requirements.

2.0 SITE SECURITY

2.1 Site Access

Two main access points to the overall project are maintained including a temporary highway access onto U.S. Six on the west side of the project, and a Twelfth Street access approximately one block west of Maple Street. Both of these access points are controlled by locked and signed gates to restrict access.

Use of the overall project gates and the remediation Site gates are controlled by the project Contractor, CSM Environmental Health and Safety, and CSM Public Safety.

The actual remediation Site is located several blocks inside of the main gates, and is surrounded by a six foot chain link security fence. These gates are located on the northwest, southwest, south, and northeast corners of the Site. All of these gates are signed and maintained in a locked condition. Gates include radioactive materials warning signs.

2.2 Security Fencing

The area being remediated, (the Site) is surrounded by a six-foot chain link security fence. The fence encloses the Site and the former settling pond area previously remediated by EPA.

As part of this Site Maintenance Plan, all fencing and gates associated with the project will be inspected on a regular basis. Inspections will identify any damage to the security fence that occurred during remediation activities, damage resulting from erosion, weather damage, or vandalism.

Damaged areas of the security fence will be repaired as they are identified.

During initial excavation activities, the bagged material storage area was expanded outside the original Site fence. Bags were also stored in an area directly south of the south security fence. Approximately four hundred bags were stored in this area. Additional six foot chain link security fencing will be installed around the bag storage area. An additional gate will be installed at the southeast corner of this area for access into the storage area and the remediation Site. The additional gate will be posted and maintained in a locked condition.

3.0 PROTECTION OF STORED MATERIALS

3.1 Description of Stored Material

Impacted material on the Site is managed in three ways. These include soils that remain in place and unexcavated, excavated soil stored in stockpiles, and excavated soils in bags.

Several stockpiles of excavated soil are in place on the Site. One stockpile of Class Two soil is located at the east-center portion of the Site and contains soils removed from the top 12 inches of the northeast roadway leading to the Eleventh Street gate. No Class One soils were included in this stockpile.

Another stockpile of Class Two soils is located near the south center gate to the Site. This stockpile was created in 2001 during the removal of soils on top of concrete and asphalt that had been in place at the Site. Class One soils in this stockpile were identified, removed, and bagged by New Horizons during the spring 2004 remediation effort.

Several much smaller soil stockpiles were created by investigatory trenching performed by New Horizons during the spring 2004 remediation effort. These stockpiles are located in the central and west central portions of the Site.

3.2 Bagged Materials Storage Area Management

Impacted materials are currently stored in 106 cubic foot capacity Lift Liners (bags). Approximately 500 bags are in storage at the south central part of the Site. The bags are placed on top of poly barriers to minimize spillage of materials to the ground surface. The transport bags are secured by tie closures at the top of the bags.

The bags have been covered with geotextile fabric to protect against ultraviolet radiation and weather. The perimeter of the fabric has been weighted to maintain it in place.

The bagged material storage area has been graded to ensure that no stormwater runoff enters the area.

3.3 Stockpiled Soils Management

Soil stockpile areas have been graded, trenched, and/or bermed to minimize the introduction of stormwater runoff into the stockpiles. Soil stockpiles have also been covered with an encapsulating material to reduce erosion of soils from stockpile surfaces.

3.4 In-Place Unexcavated Soils Management

Unexcavated areas of the Site were seeded with native grasses following the removal of concrete and asphalt. Resulting vegetative cover has been maintained in those areas undisturbed by spring 2004 remedial activities. In addition, a soil encapsulating material has been applied to areas disturbed by spring 2004 remedial activities. Berms, trenches, and/or grading have been used to minimize the introduction of stormwater runoff into excavated areas of the Site.

4.0 ADDITIONAL TEMPORARY STORMWATER MANAGEMENT ACTIVITIES

4.1 Introduction

The Site is subject to stormwater control requirements for construction projects. An extensive stormwater control program is in place at the Site. The existing program includes the use and implementation of controls such as diversions, impoundments, roughage of surfaces, seeding, silt control fencing, trenching, inspection, and monitoring.

4.2 Additional Activities

In addition to the stormwater management activities described in paragraph 4.1 above, several temporary conditions at the Site require attention. The positions of excavations, stockpiles, and contaminated areas require the use of controls similar to those identified in paragraph 4.1 to prevent release of contaminants.

Additional trenching, diversions, and installation of encapsulating materials on and around excavations, stockpiles, and contaminated areas have been implemented.

Following significant storm events, the Site will be inspected to determine what damage to controls has occurred and identify needed repairs. Repair and replacement of stormwater control mechanisms will be implemented in a timely fashion following storm events.

5.0 SITE AIR AND WATER MONITORING

5.1 Introduction

Excavation operations at the Site have been shut down prior to the completion of remediation work. Monitoring of air and water pathways will be performed during the shutdown to ensure the performance of control measures to that prevent release of impacted material.

Perimeter air monitoring will be conducted at a minimum during all working hours while excavation operations are in progress. The air-monitoring program is described more fully in the SAP.

5.2 Ground and Surface Water Monitoring

Quarterly ground- and surface-monitoring sampling will be performed during the temporary shutdown of remediation operations. Five ground-water wells and three surface-water locations on Clear Creek will be sampled and analyzed for Site specific radionuclides and metals, common anions and cations, and volatile organic compounds. Field parameter measurements will be collected during each sampling round and the nearby U.S. Geological Survey stream gage will be used to document stream discharge. Details of the monitoring program are provided in the Ground- and Surface-Water Monitoring Plan.

5.3 Air Monitoring

Four perimeter air monitoring stations were installed and used during excavation activities. These same stations have been used to collect air samples on a 24-hour basis during the cessation of activities. Air samples are analyzed for ?????

Perimeter air monitoring during the first six weeks following excavation activities demonstrated no detectable contaminants leaving the Site. These sampling events occurred during a wide range of weather events prior to, during, and after the implementation of temporary control measures. Weather events included severe wind, severe thunderstorms, hot and dry, and cool and wet conditions.

The perimeter air monitoring will be continued during the temporary shutdown with samplers run for 7-day sampling periods between each analysis.

6.0 PLAN REVIEW AND REVISION

This plan will be reviewed and updated by the Colorado School of Mines on an annual basis.