PURPOSE

To ensure Cadman minimizes the risk that Cadman will be jointly and severally liable for the clean-up of any Cadman mine site (the "Site") resulting from the acceptance of fill other than Clean Fill.

SCOPE

This procedure applies to all Cadman mine sites which accept fill material, except for those which require a site specific plan. Awareness and training of this policy will be provided to all employees and contractors at the Site and to customers delivering fill.

DEFINITIONS

Clean Fill

Fill that meets all of the following requirements:

- does not contain chemical or radiological substances from human activities;
- does not contain contaminants from a release
- does not meet the definition of contaminated soil or dangerous waste
- has not originated (or has not been mixed with any soil) from any site cleanup or corrective action, soil treatment activities, sewage treatment facility, dry cleaning sites or other cleaning activities, or any other Recognized Environmental Conditions (RECs);
- is defined as acceptable soil in accordance with the Unified Soil Classification System (Schedule A, Table 2);
- has substance concentrations less than those defined in the MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses per the Washington Administrative Code Chapter 173-340 and as outlined in Table 740-1 (Schedule A, Table 1).

Contaminated Soil

Soils removed during the cleanup of a hazardous waste site, a dangerous waste facility closure, corrective actions or other clean-up activities or soils which contain harmful substances or one or more contaminants from a release.

Dangerous Waste

Any solid waste designated as dangerous waste by the Department of Ecology under chapter 173-303 WAC, Dangerous waste regulations.

Greenfield Site

An area of forest land, or some other site which has not been previously developed or polluted.

MTCA

Model Toxics Control Act, WAC 173-340

Residential Site	A property which has historically only been used as a single family residence.
Site Specific Fill Declaration	A declaration by Customer, among other thing, agreeing and acknowledging that the fill meets the definition of Clean Fill.
Soil Characterization Report	A report outlining sampling methodology and laboratory physical and chemical characterization results. Lab results must include the MTCA list of contaminants (Schedule A, Table 1) as well as pH.
TPH Test	A field portable method for the determination of total petroleum hydrocarbons in soil that does not distinguish between aromatic and aliphatic hydrocarbons, but quantifies all fuels, oils, and greases as total hydrocarbons (e.g. Petroflag Test, Hanby).

GENERAL REQUIREMENTS

In order to provide Cadman with sufficient assurance that fill to be deposited at the Site meets the definition of Clean Fill, the following process and due diligence sampling must be followed:

1. Each Customer must be educated about the CFMP and the Site Specific Fill Declaration.

2. Each Customer must sign a Site Specific Fill Declaration for each source site where the fill originated prior to fill arriving at site. Source sites composed of multiple parcels of adjoining land require one Site Specific Fill Declaration.

3. Each Customer must provide a Soil Characterization Report or soil analytical results from an accredited laboratory from the source site where the fill originated in order for Cadman to determine whether the fill qualifies as Clean Fill. Documentation must be submitted to Cadman's Area Environment Manager for review prior to fill arriving at site.

    a. If the source site is considered a Greenfield site, a Soil Characterization Report or analytical results are not required.
    b. If the source site is considered a Residential site, a Soil Characterization Report or analytical results may be required depending on the site history information provided on the Site Specific Fill Declaration.

4. Cadman, or its designate, will conduct QA/QC Sampling of the fill.

RESPONSIBILITIES FOR CLEAN FILL ACCEPTANCE

1. Sales Team
    a. Ensure customers understand the requirements of the Fill Management Policy.
    b. Provide customers with copies of the CFMP and the Site Specific Fill Declaration.

c. Coordinate provision of soil analytical results (as required) and Site Specific Fill Declarations to Environment Manager prior to material arriving at site.

2. Cadman Area Environment Manager or designate:
   a. Review the supporting documentation to determine whether the fill from the source site qualifies as Clean Fill, or the source site qualifies as a Greenfield Site.
   b. Review the soil characterization results to approve/reject fill material.

3. On Site Coordinator:
   a. Inspect all incoming loads of fill for any unacceptable soils as defined in Table 1.
   b. Confirm the customer has completed and executed a Site Specific Fill Declaration for each source site and that the Area Environment Manager has approved each source site.
   c. Record the customer name, site source name, vehicle license, and weight of load.
   d. Conduct TPH testing as outlined below under Monitoring Requirements.

MONITORING REQUIREMENTS

1. Daily Sampling
   a. Conduct a TPH Test on one random truck load per day.
   b. Conduct a TPH Test on all suspect loads.
   c. Conduct a TPH Test on one truck per residential source site.

   If a positive result, collect larger sample and send to the Cadman Gas Chromatograph Lab for a more detailed analysis. Material from entire source site must be segregated until results are received.

2. Due Diligence Sampling
   a. Conduct due diligence sampling at a rate of once per month on a random truck load (regardless of source site) for the following parameters:
      i. Hydrocarbons
      ii. Volatile and Semi Volatile Organic Compounds (VOC)
      iii. Semi Volatile Organic Compounds (sVOC) including Polycyclic Aromatic Hydrocarbons (PAH)
      iv. Polychlorinated Biphenyls (PCB)
      v. Total Metals (including arsenic and inorganic mercury)
      vi. pH

   b. Quarterly, Cadman will collect a composite sample from the backfill area and analyze for the parameters listed above for the due diligence sampling.

      The samples will be stored separately with the lab until the composite results are received. If there is an exceedance, the individual samples will be tested.

3. Fill from residential sources will be segregated and kept separate until the TPH Test results indicate the fill quality meets the requirements of Clean Fill.

4. Fill selected for due diligence sampling and analysis will be segregated and kept separate until the results indicate the fill quality meets the requirements of Clean Fill.

5. All fill which does not meet the requirements of Clean Fill will be rejected and must be picked up by the Customer within 24 hours to avoid potentially mixing loads or causing contamination at the Site.

RECORDKEEPING

The following records must be maintained on the Cadman shared drive:

- Site Specific Fill Declarations (signed and complete)
- Soil Characterization Reports
- Daily sampling log
- Due diligence sampling log and laboratory data

ATTACHMENTS

- Site Specific Fill Declaration
- Sampling Guide

REFERENCES

- Guidance for Remediation of Petroleum Contaminated Sites (Ecology Publication No. 10-09-057; June 2016)
- Soil Methods B & A Unrestricted Land Use (Cleanup Levels and Risk Calculation [CLARC] document): https://fortress.wa.gov/ecy/clarc/FocusSheets/Soil%20Methods%20B%20and%20A%20unrestricted.pdf
- Table 740-1 Method A Soil Cleanup Levels for Unrestricted Land Uses From Model Toxics Control Act Cleanup Regulation Chapter 173-340 WAC: https://fortress.wa.gov/ecy/clarc/FocusSheets/Soil%20Methods%20B%20and%20A%20unrestricted.pdf

Schedule "A"
Table 1 and Table 2

Table 1: Screening Levels

CONTAMINANT	***MTCA Table 740-1 Unrestricted Land - Use***
Arsenic	20 mg/kg
Benzene	0.03 mg/kg
Benzo(a)pyrene	0.1 mg/kg
Cadmium	2 mg/kg
Chromium	
Chromium (VI)	19 mg/kg
Chromium (III)	2,000 mg/kg
DDT	3 mg/kg
Ethyl benzene	6 mg/kg
Ethylene dibromide (EDB)	0.005 mg/kg
Lead	250 mg/kg
Lindane	0.01 mg/kg
Methylene chloride	0.02 mg/kg
Mercury (inorganic)	2 mg/kg
MTBE	0.1 mg/kg
Naphthalenes	5 mg/kg
PAHs (carcinogenic)	0.1 mg/kg
PCB Mixtures	1 mg/kg
Tetrachloroethylene	0.05 mg/kg
Toluene	7 mg/kg
Total Petroleum Hydrocarbons	
Gas Range Organics • without benzene • all other	 100 mg/kg 30 mg/kg
Diesel Range Organics	2,000 mg/kg
Heavy Oils	2,000 mg/kg
Mineral Oils	4,000 mg/kg
1,1,1 Trichloroethane	2 mg/kg
Trichloroethylene	0.03 mg/kg
Xylenes	9 mg/kg

Table 2: Unified Soil Classification System

ACCEPTABLE SOILS		***UNACCEPTABLE SOILS***	
Symbols, Group Name		**Symbol,** Group Name	
GW	Well-graded gravel, fine to coarse gravel	**OL**	Organic silt, organic clay
GP	Poorly graded gravel	**MH**	Silt of high plasticity, elastic silt
GM	Silty gravel	**CH**	Clay of high plasticity, fat clay
GC	Clayey gravel	**OH**	Organic clay, organic silt
SW	Well-graded sand, fine to coarse sand	**Pt**	Peat
SP	Poorly graded sand	**Soils Containing**	Construction, demolition, land-clearing waste (inc. concrete, glass, etc.)
SM	Silty sand		Asphalt
SC	Clayey sand		Tires, rubber, or plastic materials
ML	Silt		Garbage, or man-made materials
CL	Clay of low plasticity, lean clay		Sludge
			Organic materials
			Wood waste

Sampling Guide

SAMPLE COLLECTION PROCEDURES

1. Clean sampling equipment.
    a. Clean with water and Alconex detergent (or similar).
    b. Rinse thoroughly with tap water.
    c. Rinse with deionized water.
2. Wear clean sampling gloves.

    A clean pair of new, non-powdered, disposable gloves shall be worn each time a different sample is collected. The gloves should be donned immediately prior to sampling.
3. Remove at least 1 foot of exposed soil prior to collecting sample.
4. Collect sample and place in clean glass jar.
5. Label sample jar with the following information:
    a. Sample ID
    b. Location of sample
    c. Time and Date of sample collection
    d. Initials of person who collected sample