

## ROSS ISLAND SAND AND GRAVEL

### FILL EVALUATION SCOPE OF WORK

(5/27/03)

#### I. OBJECTIVES

- A. Work performed under this SOW shall be completed to meet the goals of the reclamation plan as described in DSL Permit (RF-26). The Reclamation Plan specifies that fill placed in the lagoon must not pose an unacceptable short or long-term risk to human health and the environment. The objectives of the tasks described in this SOW are:
1. To confirm, on an annual basis, that fill determined not to require management (Class A) or to require minimal management (Class B), has been adequately evaluated and appropriately managed.
  2. To ensure that fill containing hazardous substances above screening levels (Class C) is managed as necessary, based on evaluation of initial data and any subsequent testing, to keep it isolated from the surrounding aquatic habitat.
  3. To confirm that fill is not hazardous waste.

#### II. FILL CATEGORIES – IN-WATER FILL

For the purposes of this SOW, in-water criteria will apply to all fill placed in Ross Island Lagoon below the ordinary high water line or above the ordinary high water line but within 50 feet landward of it, where overland flow (erosion) into the lagoon is possible. Upland criteria will apply to fill placed above this boundary, or within 50 feet of the ordinary high water line in areas where erosion to the lagoon is prevented by existing topography or construction of a berm. Fill destined for placement in Ross Island Lagoon will generally fall into four categories based on the presence of hazardous substances:

- 1) Class "A" Fill - Material with concentrations of hazardous substances less than both toxicity and bioaccumulation screening levels (see Table 1), or for which toxicity and bioaccumulation testing demonstrate no toxicity and concentrations of bioaccumulative hazardous substances in tissue are below Acceptable Tissue Levels (ATLs) (see Ross Island Fill Evaluation Fact Sheet (DEQ, 2003)). This material will not pose an unacceptable risk to human health and the environment and will require no management after placement.

- 2) Class "B" Fill – Material with concentrations of hazardous substances no more than five (5) times toxicity screening levels and no more than two (2) times bioaccumulation screening levels. This material may pose an unacceptable risk to human health or the environment and will require capping with a three (3) foot cap after placement.
- 3) Class "C" Fill – Material with concentrations of hazardous substances that exceed five (5) times toxicity screening levels and two (2) times bioaccumulation screening levels, or for which toxicity and bioaccumulation testing demonstrate toxicity and concentrations of bioaccumulative hazardous substances that exceed acceptable screening levels in tissue (see Table 1). This material is likely to pose an unacceptable risk to human health or the environment and will require case-specific engineering controls/capping and development of a long-term monitoring and management plan.
- 4) Class "D" Fill – Fill containing free product, radioactive compounds, or hazardous wastes. This fill contains contaminants with characteristics such that it cannot safely be managed in Ross Island lagoon.

#### **A. CLASS "A" FILL DETERMINATION**

The following information must be documented to support a finding that the proposed fill material will not pose an unacceptable risk to human health and the environment without capping:

1. The source area from which the fill is obtained must be described. This description shall include at a minimum:
  - a) Area and depth over which fill will be removed and estimated fill volume. A map depicting the site and surrounding areas should be provided.
  - b) Nature of the material; e.g., general consistency, particle size, heterogeneity.
  - c) Historical activities at the site and any surrounding areas (a minimum of .25 miles up and downstream) that may have impacted the site.
  - d) Data indicating the concentration range of naturally occurring metals at the site.
  - e) Any existing chemical or physical sampling data for the site.

If the information provided above is sufficient to determine that hazardous substances are not present above the concentrations for Class A materials, an "inerts" determination can be made at this point

and further testing is not necessary. Under this scenario, approval from DEQ prior to placement in Ross Island Lagoon is not required. However, the basis for the clean fill determination must be documented for future submittal in the Annual Progress Report, described in Item IV of this SOW.

2. Chemical analyses for substances likely to be present in the potential fill material must be provided. Testing protocols are described in DEQ's Fill Evaluation Fact Sheet (DEQ, 2003). If testing indicates that concentrations of hazardous substances in the proposed fill are less than both toxicity and bioaccumulation screening levels, or for which subsequent toxicity and bioaccumulation testing demonstrate no toxicity and tissue concentrations of bioaccumulative hazardous substances below ATLs (DEQ, 2003), the fill can be placed in Ross Island Lagoon. Under this scenario, approval from DEQ prior to placement in Ross Island Lagoon is not required. However, the basis for the clean fill determination must be documented for future submittal in the Annual Progress Report, described in Item IV of this SOW. General fill placement location must also be documented.

## **B. CLASS "B" FILL DETERMINATION**

The following information must be documented to support a finding that the proposed fill material will not pose an unacceptable risk to human health or the environment if covered with a three (3) foot cap of clean material:

1. The source area from which the fill is obtained must be described. This description shall include at a minimum:
  - a) Area and depth over which fill will be removed and estimated fill volume. A map depicting the site and surrounding areas should be provided.
  - b) Nature of the material; e.g., general consistency, particle size, heterogeneity.
  - c) Historical activities at the site and any surrounding areas that may have impacted the site.
  - d) Data indicating the concentration range of naturally occurring metals at the site.
  - e) Any existing chemical or physical sampling data for the site.
2. Chemical analyses for substances likely to be present in the potential fill material must be provided. Testing protocols are described in DEQ's Fill Evaluation Fact Sheet (DEQ, 2003). If testing indicates that concentrations of hazardous substances are no more than five (5) times toxicity screening levels and no more than two (2) times bioaccumulation screening levels, the fill can be placed

in Ross Island Lagoon with a cover<sup>1</sup> as described in item III.C. Under this scenario approval from DEQ prior to placement in Ross Island Lagoon is not required; however, DEQ must be notified a minimum of 30 days prior to the planned placement. Also, the basis for the Class “B” fill determination must be documented for future submittal in the Annual Progress Report, described in Item IV of this SOW.

3. Documentation of cap placement. Once sufficient time has passed for the fill material to have settled adequately, based on evaluation of the characteristics of the fill, and no longer than 6 months from the date of the last fill placement at this location or 2 years from the date of the first fill placement, the fill shall be covered with a minimum of three (3) feet of clean material. Bathymetric surveys shall be conducted before fill placement, after fill placement, and after cap placement to assure all fill material is adequately covered. The source and nature of the cap material and the associated documentation that it is clean shall be provided as described in Item III.A of this SOW. Documentation associated with capping shall be provided in the Annual Progress Report, described in Item IV of this SOW.

### **C. CLASS “C” FILL DETERMINATION**

Materials with concentrations of hazardous substances that exceed five (5) times toxicity screening levels and two (2) times bioaccumulation screening levels, and for which toxicity and bioaccumulation testing demonstrate toxicity or concentrations of bioaccumulative hazardous substances that exceed acceptable screening levels in tissue (DEQ, 2003) are acceptable only in conjunction with capping, monitoring, and management. The following submittals will be required for evaluation of the suitability of placement of the material in Ross Island Lagoon with a cap and associated long-term monitoring and management:

1. The source area from which the fill is obtained must be described. This description shall include at a minimum:
  - a) Area and depth over which fill will be removed and estimated fill volume. A map depicting the site and surrounding areas should be provided.
  - b) Nature of the material; e.g., general consistency, particle size, heterogeneity.
  - c) Historical activities at the site and any surrounding areas that may have impacted the site.
  - d) Data indicating the concentration range of naturally occurring metals at the site.

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<sup>1</sup> Note that a cover is not necessary if subsequent testing, as described in the fill evaluation protocols (described in DEQ, 2003) indicates that the material does not pose toxicity or bioaccumulative threats.

- e) Any existing chemical or physical sampling data for the site.
2. Chemical analyses for substances likely to be present in the potential fill material must be provided. Testing protocols are described in DEQ's Fill Evaluation Fact Sheet (DEQ, 2003). If contaminants are detected that would characterize the material as Class "D" Fill as described in Item II. D of this SOW, the material cannot be placed in the Ross Island lagoon.
3. A work plan describing the planned placement of the contaminated material must be submitted for DEQ review a minimum of 3 months prior to the date of proposed placement. The work plan should include: identification of the location within the lagoon that the material will be placed, method of placement including techniques used to minimize turbidity, time frame for settling, source of cap material, placement method and timing for cap, thickness of cap (and supporting basis for thickness), method for documenting that cap design has been achieved, and long-term monitoring that will be implemented to ensure that the cap is effective. DEQ will make the work plan available for public review and hold a public meeting to accept comments on the proposal as warranted. DEQ approval of the work plan is required prior to proceeding with the planned activity.
4. A report documenting the placement of the contaminated fill and associated cap shall be submitted to DEQ within 30 days of completion of the capping and receipt of any associated analytical results. Long-term monitoring and management will be conducted as defined in the work plan. Periodic reports documenting monitoring results will be submitted to DEQ for review according to the schedule agreed to in the work plan.

#### **D. CLASS "D" FILL**

The following materials cannot be placed in Ross Island lagoon: material exhibiting a sheen, material exhibiting radiological properties, or hazardous wastes.

### **III. FILL CATEGORIES – UPLAND FILL**

Fill destined for placement upland on Ross or Hardtack Islands will generally fall into four (4) categories based on the presence of hazardous substances:

- (1) Class "A" Fill - Material with concentrations of hazardous substances that fall below the lowest applicable screening level considering: ecological

terrestrial exposure, human direct contact, and potential leaching to ground or surface water at concentration that exceed aquatic screening levels (DEQ, 2003). The leachate evaluation can be based on total concentrations or leachate tests. This material will not pose an unacceptable risk to human health or the environment and will require no management after placement.

- (2) Class "B" Fill – Material meeting the criteria for Class "A" fill described above, with the exception that the screening criteria for petroleum hydrocarbons is exceeded by no more than ten (10) times the screening concentrations. This material must be landfarmed after placement with the goal of reducing petroleum concentrations to below screening levels. Once landfarming is complete, this material must be covered with a minimum of two (2) feet of clean soil. **Note that disposal of imported fill under this criteria requires a Solid Waste Landfill Permit.**
- (3) Class "C" Fill – Material with concentrations of hazardous substances no more than five (5) times the direct contact screening levels for human or ecological receptors and meeting the leachate screening concentrations. This material may pose an unacceptable risk to human health or the environment and will require capping with a minimum of three (3) feet of clean soil and associated long term management of the cap. **Note that disposal of this material requires a Solid Waste Landfill Permit.**
- (4) Class "D" Fill – material with concentrations of hazardous substances greater than five (5) times direct contact screening levels, exceeding leachate screening concentrations, exhibiting a sheen, containing radioactive compounds, or that would be considered hazardous waste. This fill contains hazardous substances at a level or in a form that cannot safely be managed on Ross or Hardtack Islands.

**A. CLASS "A" FILL DETERMINATION** The following information must be documented to support a finding that the proposed fill material will not pose an unacceptable risk to human health and the environment without capping:

1. The source area from which the fill is obtained must be described. This description shall include at a minimum:
  - a) Area and depth over which fill will be removed and estimated fill volume. A map depicting the site and surrounding areas should be provided.
  - b) Nature of the material; e.g., general consistency, particle size, heterogeneity.

- c) Historical activities at the site and any surrounding areas that may have impacted the site.
- d) Data indicating the concentration range of naturally occurring metals at the site.
- e) Any existing chemical or physical sampling data for the site.

If the information provided above is sufficient to determine that hazardous substances will not be present above the concentrations for Class A material, an “inerts” determination can be made at this point and further testing is not necessary. Under this scenario approval from DEQ prior to placement on Ross or Hardtack Islands is not required. However, the basis for the clean fill determination must be documented for future submittal in the Annual Progress Report, described in Item IV of this SOW.

- 2. Chemical analyses for substances likely to be present in the potential fill material must be provided. Testing protocols are described in DEQ’s Fill Evaluation Fact Sheet (DEQ, 2003). If testing indicates that concentrations of hazardous substances in the proposed fill are less than screening levels, the fill can be placed upland on Ross or Hardtack Islands. Under this scenario, approval from DEQ prior to placement is not required. However, the basis for the clean fill determination must be documented for future submittal in the Annual Progress Report, described in Item IV of this SOW.

## **B. CLASS “B” FILL DETERMINATION**

**Note that disposal of imported fill meeting this criteria requires a Solid Waste Landfill Permit.** The following information must be documented to support a finding that the proposed fill material will not pose an unacceptable risk to human health or the environment if landfarmed and covered with a minimum of two (2) feet of clean fill:

- 1. The source area from which the fill is obtained must be described. This description shall include at a minimum:
  - a) Area and depth over which fill will be removed and estimated fill volume. A map depicting the site and surrounding areas should be provided.
  - b) Nature of the material; e.g., general consistency, particle size, heterogeneity.
  - c) Historical activities at the site and any surrounding areas that may have impacted the site.
  - d) Data indicating the concentration range of naturally occurring metals at the site.

- e) Any existing chemical or physical sampling data for the site.
2. Chemical analyses for substances likely to be present in the potential fill material must be provided. Testing protocols are described in DEQ's Fill Evaluation Fact Sheet (DEQ, 2003). If testing indicates that, with the exception of petroleum hydrocarbons, concentrations of hazardous substances in the proposed fill are less than screening levels; and total petroleum hydrocarbons (TPH) are less than 1,000 ppm, the fill can be placed upland on Ross or Hardtack Islands. This material must be landfarmed and resampled, with the goal of reducing petroleum concentrations to less than 100 ppm. Additional fill must not be placed over material that has not yet attained the 100 ppm TPH goal. Under this scenario, approval from DEQ prior to placement is not required; however, DEQ must be notified a minimum of 30 days prior to the planned placement. Also, the basis for the Class "B" fill determination must be documented for future submittal in the Annual Progress Report, described in Item IV of this SOW.
  3. Documentation of cap placement. Once landfarming is complete and no more than six (6) months following receipt of analytical results confirming treatment goals were achieved, the fill must be covered with a minimum of two (2) feet of clean soil. The source and nature of the cap material and the associated documentation that it is clean shall be provided as described in Item III.A of this SOW. Documentation associated with capping shall be provided in the Annual Progress Report, described in Item IV of this SOW.

### **C. CLASS "C" FILL DETERMINATION**

**Note that disposal of this material requires a Solid Waste Landfill Permit.** Any material with concentrations of hazardous substances no more than five (5) times the direct contact screening levels, but meeting leachate screening criteria, are only acceptable for upland placement in conjunction with capping, monitoring, and management. The following submittals will be required for evaluation of the suitability of placement of the material upland on Ross or Hardtack Islands with a cap and associated long-term maintenance:

1. The source area from which the fill is obtained must be described. This description shall include at a minimum:
  - a) Area and depth over which fill will be removed and estimated fill volume. A map depicting the site and surrounding areas
  - b) Historical activities at the site and any surrounding areas that should be provided.
  - c) Nature of the material; e.g., general consistency, particle size, heterogeneity. may have impacted the site.



- d) Data indicating the concentration range of naturally occurring metals at the site.
  - e) Any existing chemical or physical sampling data for the site.
2. Chemical analyses for substances likely to be present in the potential fill material must be provided. Testing protocols are described in DEQ's Fill Evaluation Fact Sheet (DEQ, 2003). If contaminants are detected in a form or at a concentration that would characterize the material as Class "D" Fill as described in Item III.D of this SOW, the material cannot be placed upland on Ross or Hardtack Islands.
  3. A work plan describing the planned placement of the contaminated material must be submitted for DEQ review a minimum of 3 months prior to the date of proposed placement. The work plan should include: identification of the location that the material will be placed, method of placement, source of cap material, placement method and timing for cap, thickness of cap (and supporting basis), method for documenting that cap design has been achieved, and long-term maintenance that will be implemented. DEQ will make the work plan available for public review and hold a public meeting to accept comments on the proposal as warranted. DEQ approval of the work plan is required prior to proceeding with the planned activity.
  4. A report documenting the placement of the contaminated fill and associated cap shall be submitted to DEQ within 30 days of completion of the capping and receipt of any associated analytical results. Long-term monitoring and management will be conducted as defined in the work plan. Periodic reports documenting monitoring results will be submitted to DEQ for review according to the schedule agreed to in the work plan.

#### **D. CLASS "D" FILL**

The following materials cannot be placed upland on Ross or Hardtack Islands: (a) material with concentrations exceeding five (5) times the ecological or human health screening levels with the exception of petroleum, (b) material with petroleum concentrations exceeding 1,000 ppm, (c) material exceeding leachate screening criteria, (d) material exhibiting a sheen, (e) material exhibiting radiological properties, or (f) hazardous wastes.

#### **IV. PROGRESS REPORTS**

On an annual basis, Ross Island Sand and Gravel shall submit Progress Reports that document fill activities for the prior year and project anticipated fill activities for the upcoming year. The following information shall be included:

- A. Source, volume, fill date, fill category, and general placement location for all fill. All information used to determine fill category including sampling results and associated lab reports. For Class C fill, simply reference the report documenting the activity.
- B. Bathymetric surveys conducted before and after in-water fill requiring a cap. For Class C fill, simply reference the associated report.
- C. Source, volume, placement date, and placement method for cap material used for Class B inwater and upland fill.
- D. Anticipated fill sources, including volumes, for the upcoming year and estimated schedule for placement.

## V. SUPPORTING DOCUMENTS

The following documents should be prepared in conjunction with any planned sampling activities:

### A. SAMPLING AND ANALYSIS PLAN

Objective: To adequately document all sampling and analysis procedures.

Scope: In preparation of the SAP, the following guidance documents shall be utilized: Data Quality Objectives Process for Superfund, EPA 540-R-93-071, September, 1993; Test Methods for Evaluating Solid Waste, SW-846; and A Compendium of Superfund Field Operations Methods, EPA/540/P-87/001 (OSWER Directive 9355.0-14), December, 1987. The SAP shall address all topics listed in Environmental Cleanup Division Policy #760.000, Quality Assurance Policy.

Procedures: The work plan shall include a sampling and analysis plan (SAP). The SAP shall include quality assurance and quality control (QA/QC) procedures for both field and lab procedures. The SAP shall be sufficiently detailed to function as a manual for field staff.

### B. HEALTH AND SAFETY PLAN (HASP)

Objective: To establish policies and procedures to protect workers and the public from the potential hazards posed by a hazardous materials site.

Scope: The HASP portion of the work plan shall comply with 29 CFR 1910.120 and OAR Chapter 437, Division 2.

Procedures: The HASP shall include a description of risks related to RI activities, protective clothing and equipment, training, monitoring procedures, decontamination procedures and emergency response actions.

**C. MAPS**

The work plan shall include a map or maps of the facility which clearly shows site topography, on-site structures, waste disposal areas and proposed sampling locations.

**Reference** – DEQ Fact Sheet – Ross Island Fill Evaluation; April 15, 2003 and subsequent updates.