

**West Lake Landfill Superfund Site**

**Work Plan for Removal Action: Pre-Construction Work Plan Dated May 16, 2014**

**USACE Review Comments as of 30 May, 2014**

<b>Comment #</b>	<b>Document</b>	<b>Reference: Section/ Paragraph/ Appendix</b>	<b>Commentor</b>
1	Work Plan	Vegetation & Surface Obstacle Clearing, Sec 2.2	Donakowski
2	Work Plan	Vegetation & Surface Obstacle Clearing, Sec 2.2	Donakowski
3	Work Plan	Vegetation & Surface Obstacle Clearing, Sec 2.2	Donakowski
4	Work Plan	Vegetation & Surface Obstacle Clearing, Sec 2.2	Donakowski
5	Work Plan	Vegetation & Surface Obstacle Clearing, Sec 2.2	Donakowski
6	Work Plan	Air Monitoring Sampling, and QA/QC, Sec. 2.4	Donakowski
7	Work Plan	Air Monitoring Sampling, and QA/QC, Sec. 2.4	Donakowski
8	Air Monitoring, Sampling, and QA/QC Plan	Appendix B	Donakowski
9	Radiation Safety Plan	4.1, Appendix D	Donakowski

10	Work Plan	Identification of Waste Staging, Management, & Relocation Areas, Sec 2.1	Conroy
11	Work Plan	Identification of Waste Staging, Management, & Relocation Areas, Sec 2.1	Conroy
12	Work Plan	Identification of Waste Staging, Management, & Relocation Areas, Sec 2.1	Conroy
13	Work Plan	Identification of Waste Staging, Management, & Relocation Areas, Sec 2.1	Conroy
14	Work Plan	Vegetation and Surface Obstacle Clearing, Sec 2.2	Conroy
15	Work Plan	Litter Control Barriers, Sec 2.5	Conroy
16	Work Plan	Litter Control Barriers, Sec 2.5	Conroy

17	Work Plan	Identification of Waste Staging, Management, & Relocation Areas, Sec 2.1	Kiefer
18	Work Plan	Identification of Waste Staging, Management, & Relocation Areas, Sec 2.1	Kiefer
19	Work Plan	Vegetation & Surface Obstacle Clearing, Sec 2.2	Kiefer
20	Work Plan	Vegetation & Surface Obstacle Clearing, Sec 2.2	Kiefer
21	Work Plan	Vegetation & Surface Obstacle Clearing, Sec 2.2	Kiefer
22	Work Plan	Air Monitoring Sampling, and QA/QC, Sec. 2.4	Kiefer
23	Work Plan	Table 2, Schedule	Kiefer
24	Work Plan	Table 2, Schedule	Kiefer
25	Bird Monitoring Plan	Appendix A,	Bass
26	Work Plan	Identification of Waste Staging, Management, & Relocation Areas, Sec 2.1, 4th Para, pg 3	Speckin
27	Work Plan	Identification of Waste Staging, Management, & Relocation Areas, Sec 2.1, 4th Para, pg 3	Speckin

28	Work Plan	Vegetation & Surface Obstacle Clearing, Sec 2.2, 4th Para, pg 5	Speckin
29	Work Plan	Vegetation & Surface Obstacle Clearing, Sec 2.2, 4th Para, pg 5	Speckin
30	Work Plan	Air Monitoring Sampling, and QA/QC, Sec. 2.4, 2nd Para, pg 7	Speckin
31	General	Odor Control	Speckin
32	Work Plan	Vegetation & Surface Obstacle Clearing, Sec 2.2, 2nd Para	Kiefer
33	Work Plan	Vegetation & Surface Obstacle Clearing, Sec 2.2, 4th Para	Kiefer
34	Radiation Safety Plan	Appendix	Kiefer

**Comment**

"Background" not well defined in the document. Should either reference established background from past activities or discuss establishment of a reference area prior to scanning

"Above background" can be a nebulous term. Suggest using more definitive action level such as instrument MDC, instrument MDC, or instrument readings at levels above 95% UCL of established reference area, etc. Often background is taken as the average of background measurements, which can lead to situations where 50% of measurements are "above" background even though they are consistent with expected background readings.

To note, in past discussion it appears UMTRCA 5.0 pCi/g total thorium has been established as the "free release" criteria. As such, an "above background" measurement may still meet the release criteria.

Soil sampling requirements are not discussed. Will soil samples be collected? If so, there should be some discussion of sample bias, sample identification, duplicate frequency, sample depth, etc.

Provide clarification regarding the purpose of placing a layer of rock over areas of elevated gamma. Is it an engineered containment structure to prevent spread of contamination or to provide shielding for workers? If significant contamination is encountered that requires containment control or shielding, it is recommended the work plan should include re-evaluation of the barrier location in order to avoid the contaminated area rather than attempt to place a temporary barrier/shield.

Table 1 lists collection frequency for alpha track detectors as semi-annual. Recommend deploying multiple sets of detectors, one set left for annual monitoring and one set to be switched out quarterly, rather than semi-annually, to coincide with the collection frequency.

Note - Air monitoring plan states alpha track detectors are to be exchanged quarterly. If in error, reconcile these two. Quarterly exchange is preferable.

The reviewer is not familiar with the Inspect USA alpha track detectors, but with some alpha track vendors it is possible to purchase detectors with a thoron (i.e. radon 220) filter. Recommend deployment of both unfiltered and thoron filtered alpha track detectors. A significant difference in colocated filtered and unfiltered detectors would suggest thoron, though short lived, is a significant contributor to radon levels. This is important to ensure that reported radon-222 results are not biased high due to radon-220 contribution. It is also important to determine whether radon-220 and its decay products are present at levels that could cause it to become a constituent of concern.

General question regarding air monitoring and not necessarily a comment directly related to the preconstruction activities - is air monitoring from the surface of the disposal areas conducted? UMTRCA has limits of 20 pCi/m<sup>2</sup>/s. If surface flux monitoring is performed, it would be helpful to include a discussion of that activity as well.

Are there locations where dose rates in excess of 2 mrem/hr exist? If so, is work planned in these areas? Recommend a map of radiologically restricted areas, if they exist, be included in the work plan.

Recommend the designers take a closer look at the bottom width of the proposed excavation to aid the excavation isolation barrier. Although the proposed bottom width of 45-feet would be just wide enough to accommodate an excavator machine wielding a clamshell, it may not be wide enough to allow support vehicles to pass behind the excavating machine. The configuration assumes the machine is orientated at a 90-degree angle to the excavation centerline and that the centerline is located at an edge of the proposed excavation. If the excavation must be made wider than 45-feet at the base, the quantities will be larger and more disposal area may need to be identified.

The disposal area for any encountered RIM is not identified. The plan only states that RIM will be disposed of in an "appropriate manner". An area for disposal of RIM encountered in the excavation must be identified. Recommend including a figure outlining the areas designated for disposal.

The plan identifies a map to be prepared which identifies potential areas for waste relocation, the size of each area, and a preliminary estimate of the expected in-place volume of waste material that can be relocated to each area. Recommend a figure be prepared now and included with this plan.

Excavation of a slurry trench is very messy. Slurry used to support the side walls of the excavated trench will splash on the trench, drip from the clamshell, and drip out of the dump trucks used to haul the excavated wastes to the previous disposal areas. The equipment will track the wet slurry around the site. Strongly recommend the designer consider a concrete work surface on the bottom of initial excavation. This work surface would include guide-walls to control the trench and horizontal alignment of the trench. The work surface will also include curbing to contain the slurry and prevent it from running off of the site. The inclusion of this concrete work surface will increase the proposed width and depth of the excavation to aid the excavation of the isolation barrier.

The plan states that the process for clearing and vegetation management will follow the previously approved process for the 2013 fence construction and 2013 GCPT Investigation. Does this process include the removal of the root ball trees that are felled as part of the vegetation control? Or is this type of "grubbing" unnecessary for this work? Recommend including the previously approved processes in an Appendix so all work plans associated with pre construction are included in this document.

The plan describes four dozer moveable litter control units that are each 20-feet wide lined with litter control netting and be located within 50-feet of the active excavation. Four of these moveable units will only provide protection for slightly less than an 80-foot wide active excavation face. Paragraph 2.1 of this plan describes the proposed excavation to aid the construction of the isolation barrier to be "approximately 20 feet in depth, 45 feet across at the base and will have slopes of 3 horizontal to 1 vertical (3:1)". These dimensions describe an excavation that is 165-feet wide at the top. Four 20-foot wide, dozer moveable litter control units may not be sufficient to capture all litter emanating from an excavation of this magnitude. The plan should include provision to mobilize additional litter control units if the original four are observed to be ineffective.

Figure 4 in the work plan shows the location of a 900-foot long litter barrier located along St. Charles Rock Road. The plan should include provision to increase the length of this litter barrier, or erect another portion of it in an additional alignment if this initially proposed 900-foot long barrier is observed to be significantly ineffective at capturing all windblown litter.

3rd paragraph references an appropriate unit. Work Plan should provide parameters and range of criteria that better define what would be considered an appropriate subsurface unit.

Paragraph 7 states, "if RIM is encountered, this waste will be disposed in an approved manner and not disposed in the relocated area." Work plan should outline what that "approved manner" will be.

Paragraph 4 references process utilized for 2013 fence construction and 2013 GCPT investigation will be used. Recommend that the process be included as an appendix to this Work Plan so all documents are together in one document.

Paragraph 4 references that moisture may be added to the vegetation during brush hog and chipping operations if the natural moisture is insufficient to suppress dust. Work Plan should identify how you will determine that the natural moisture is insufficient to suppress dust.

Last paragraph states that if the overland gamma scan indicates a radiation level above background, the health physicist will need to lead a clearing crew. Please specify in this plan the background radiation level.

Paragraph 4 states that the meteorological station will be placed on top of the landfill office if the roof condition is adequate. Provide an alternate location in the event the roof is not adequate to hold the equipment.

Recommend that initial identification of waste storage areas be provided now (in this work plan, per comment 12) and schedule to show that final adjusted locations of waste storage areas will be provided within 30 days of Work Plan approval.

Recommend that a more definitive schedule be provided for clearing of vegetation and surface obstacles. Example: Clearing of vegetation and surface obstacles will be completed within 30 days of approval of IB Design.

The Summary Report dated March 18, 2014 located in Appendix A, paragraph 1.0 of the Bird Hazard Monitoring and Mitigation Plan references 2 letters from the St. Louis Airport's Counsel that provided concepts and comments that were recommended to be included in the ongoing monitoring plan. USACE has not been provided with those letters, so it cannot be verified if the recommended controls are limited clearing work to be completed during pre construction activities. Please provide copies of those letters so verification can be performed.

The 3rd sentence indicates any excavated material that will be excavated below the April 6, 1975 surface will be given preference for relocation to the SE corner Area 1. Does this mean that North Quarry landfill material placed after April 6, 1975 will be given preference for relocation in SE corner of Area 1 or material placed prior to April 6, 1975...which it is assumed would be the original Area 1 landfill overlay of the North Quarry Material. If the latter, it appears the sequence of excavation may make this difficult since North Quarry material would be excavated first, followed by the Area 1 material. Please clarify.

The 4th sentence discusses the potential for placement of excavated material on the North Quarry Landfill. The summary of the Bird Hazard Monitoring Plan indicates anticipated construction activities may require relocation of the air monitoring stations. Are the currently proposed air monitoring station locations suitable if material placement is required on the North Quarry Landfill?

It appears that the precautions during clearing described in this paragraph will only be necessary if surface RIM is discovered in the scans described in the previous two paragraphs. Although it may already be planned, it is recommended that any areas identified containing RIM be cordoned off so there is a visual demarcation of areas to avoid or where extra precautions need to be taken. The paragraph is currently written it is uncertain if there will be a visual demarcation or if it will simply be a Rad Tech guiding those performing the clearing.

Last sentence suggests that clearing and addressing gamma areas above background will be the first step before other activities. It uses "installation of air monitoring equipment" as an example of activities that will occur after addressing the gamma areas. It appears part of the process of addressing the gamma involves clearing and potential ground disturbance. Does the air monitoring need to be in-place prior to these activities or is a more localized air monitoring program planned?

This paragraph indicates that air monitoring stations may need to be relocated due to availability or restrictions on the delivery of power to each location. USACE has had good luck with the use of solar powered air monitoring stations under similar circumstances that may be an option to consider if it becomes an issue.

It was not indicated that a separate odor control plan was going to be developed for this site. However, odor control is discussed in association with the Bird Mitigation Plan. Since odor control appears to be a significant factor in mitigating bird issues, are the measures to be implemented as part of the Bird Mitigation Plan considered sufficient to address odor issues affecting the public?

States that topsoil and grassy areas from OU-1 will be stockpiled near N. Quarry Landfill crown area with silt fencing to prevent blowing dust. Please specify how potential blowing dust from that stockpile will be minimized.

States that the process for clearing and vegetation management will follow previously approved processes utilized for the 2013 investigation. This section includes some language verbatim from the 2013 GCPT work plan, but not all. To ensure there is no confusion as to what will be done and to prevent the need to reference multiple work plans, it is recommended that the few paragraphs of the GCPT work plan that apply to the pre-construction work be incorporated into Sec 2.2 of the pre-construction work plan.

Personnel, tools, and equipment used for clearing areas of OU-1 that are impacted with surface RIM will require an equipment inventory in accordance with section 5.3.5. The work plan should include a figure showing the exist survey area for pre-construction activities.



Critical Issue Y/N
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