

Colorado Department of Health

Review and Comment

Final Phase I RFI/RI Workplan for OU 13 - The 100 Area  
October 9, 1992

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General Comments:

1) As we stated in our original comments to the draft version of this workplan, unless and until a revised SOP GT.8 and an HPGe SOP are both approved, the Division is unwilling to approve this workplan. We have yet to see a revised SOP GT.8 and we have only seen a draft HPGe SOP which was very deficient and received heavy comments (for instance, the draft SOP had no provisions for laboratory HPGe applications, nor for placement of the HPGe detector over holes in pavement). Since DOE and EG&G have known about this condition of approval since early August and have not taken the necessary steps to satisfy it, the Division will withhold approval of the workplan until the condition is satisfied. Any scheduling and milestone problems arising as a result of this issue will be DOE's responsibility.

2) In Section 3.2.7 of the final version of the No Further Action Justification Document for OU 16, DOE states that further investigation of IHSS 197 is warranted. DOE also states that because IHSS 197 is closely related both geographically and historically to IHSS 117.1, the investigation of IHSS 197 should be included with that of IHSS 117.1 as a part of the RFI/RI for OU 13. Therefore, please modify Section 6.3.1.1 as needed to investigate the accessible portions of IHSS 197.

Specific Comments:

Section 3.0: The Division disagrees with the disposition of our comment to the draft Workplan regarding Section 3.0. Cleanup criteria will be based on both the results of the risk assessment (environmental and human-health) and ARARs. Hopefully, the risk assessment and ARARs will be coordinated to a large extent since many ARAR standards are health-based. However, both sources will be considered when finalizing cleanup criteria.

In addition, contrary to the text of the second paragraph of this

section, CDH and EPA have not proposed establishing ARARs on a site-wide basis. Instead we have urged DOE to establish the proper site-wide universe of potential ARARs. Since we could not agree on what this universe should include, the short term problem was resolved with the development of the Benchmark Tables. The understanding was that the Benchmark Tables would be incorporated into all Workplans so that data with appropriate detection limits would be gathered in the investigations to support 1) future compliance with ARARs, 2) future cleanup standards, and 3) the Baseline Risk Assessment. This is consistent with the text in the first paragraph that says "The Benchmarks . . . will be used to establish RFI/RI analytical detection limits. Cleanup criteria will be site-specific . . ." It is important to note that the benchmarks were intended to be used to set analytical detection limits as low as, or as close as possible to, the lowest benchmark for any given chemical. Commitment to this concept needs to be emphasized within the text.

The second portion of the Division's comment to Section 3.0 was not addressed. We asked that our 6/12/92 comments to the Benchmark Tables (Gary Baughman to Martin Hestmark, cc'd to Rich Schassburger) be incorporated into the final workplan version. Though some of the comments have been addressed, many remain unresolved.

Until the above issues are resolved, we will be unable to approve this workplan.

Section 5.1.2.5: As stated in our original comment to this section, when ground water contamination has been confirmed at an IHSS, one downgradient well will not be sufficient. Plume delineation will be necessary. As stated in your response to comments, this can be handled on a case by case basis, but acknowledgment must occur in the text.

Section 6.0 - General Comments:

- 1) An SOP needs to be developed for collecting surface soil samples in paved areas which assures consistent useable data.
- 2) Relating to General Comment 1 above, without an SOP, the Division is unable to assess the viability of the technique proposed in this workplan where the HPGe detector is placed directly over a hole cut in pavement. In a brief conversation with EG&G experts on the HPGe detector, it was indicated to Division personnel that this technique will only yield qualitative data. This would not be acceptable to the Division, resulting in an expansion of the surface soil sampling program in paved areas.
- 3) The Division is also unable to assess the viability of the "laboratory HPGe" without an operating procedure.

4) Clarification should be included in the text explaining how the appropriate number and location of surface soil samples was determined for each IHSS. This should be included for both radionuclide and non-radionuclide samples. The Division does not believe that a sufficient number of surface soil samples has been proposed for complete characterization. It is important to note that the risk assessment is only one reason to collect surface soil samples (see Section 5.1.2.5). The other reason is to establish the extent of contamination. These reasons may have different data quantity and quality needs. Indication that both data needs were considered was not found in the workplan. Therefore, the Division proposes the following: 1) For IHSSs 117.1, 117.2, 117.3, 128, 134, 148, 157.1, 158, and 171, the proposed program should be expanded so that at least one surface soil sample is taken for every four soil gas and/or HPGe survey points. 2) Surface soil samples taken in IHSS 134(S) should be analyzed for magnesium and samples taken in IHSS 148 should be analyzed for beryllium. 3) The program as proposed in the workplan is sufficient for IHSSs 152 and 186. However, the location of the soil samples in IHSS 186 should be reviewed.

5) The Division remains concerned about the scope of the Stage 2 investigation for the following reasons:

1) Table 6.1 indicates that, in IHSSs where no contamination was detected by the screening surveys, at least one borehole will be drilled at the location of most likely contamination. However, Section 6.3.2 and Figures 6-1A through 6-1D indicate that only one borehole will be drilled in these sites. Either way, the Division feels that there are other factors that should be taken in to consideration before a number of boreholes is finalized. These items include:

- IHSS size and
- whether or not the waste history involves releases originating below the ground surface.

The "point" most likely to be contaminated based on the history of the site (mentioned in Section 6.3.2) may be impossible to determine either because of a lack of historical data or because of a homogeneity of waste storage across the site.

2) All three of the above references indicate that a maximum of two boreholes will be drilled in IHSSs at the location where screening surveys have indicated maximum contamination. The Division questions what information this will yield:

- If the boreholes confirm contamination, one borehole cannot ascertain the three dimensional extent.
- If the boreholes do not confirm contamination, Figures 6-1A thru 6-1D indicate that no further characterization is necessary, yet the contamination found with the screening surveys has not yet been characterized.

Therefore, the Division proposes the following strategy: 1) At IHSSs where no contamination was found during the screening surveys, a sufficient number of borings will be drilled and sampled in Stage 2 to confirm that there is no subsurface contamination. The number of borings will be proposed in the first Technical Memorandum (after Stage I) and will be based on IHSS size, known waste storage history, and the possible presence of below-ground releases. 2) At IHSSs where contamination was found during the screening surveys, Stage 2 will consist of at least three borings transecting each anomaly (rad and non-rad) downgradient from the point of maximum indicated contamination. This will be done for a maximum of three transects (nine borings) per IHSS. 3) Stage 3 can then assess the need for any additional borings to complete characterization and effectively locate needed ground water monitoring wells.

6) Portions of several of the OU 10 IHSSs lie beneath buildings. Since these portions of the IHSSs cannot be investigated and evaluated directly, the RFI/RI must indirectly investigate them as completely as possible. Because the only possible pathway from under-building contamination to a receptor is through the subsurface, the vadose and saturated zones must be evaluated during the RFI/RI in order to assess risk. Therefore, Stages 2 and 3 must implement sufficient boreholes and monitoring wells as close to the building edge as possible to characterize the contamination at the building edge and assess risk. To the extent possible, DOE should look to the future D & D schedule of the building in question and determine when the under-building contamination can be directly assessed. If this cannot be determined, or if D & D will be too far in the future, or if D & D will not involve building removal, DOE must assume that a part of the remedy for IHSSs with under-building contamination will be continued monitoring of the affected under-building area. We urge DOE to consider how strategic placement of the RFI/RI boreholes and wells could lessen the additional monitoring requirements of the final remedy.

#### Section 6.0 - Specific Comments:

Section 6.3.1.1: The Division is concerned about the rigidity to which the 20'-triangular grid was applied to this IHSS. For instance, along the northern edge of the surveyed area, only three sample locations are proposed next to the secured area fence. It appears that this occurred because the grid locations fell on or just on the other side of the fence. This leaves a fairly significant area along the fence that will not be surveyed. The same is true along and adjacent to the multiple pipeline throughway that runs about 60' north of the southern border of the IHSS. Both of these areas could be surveyed by points slightly different from the grid locations.

As outlined in General Comment 2 above, DOE has recommended adding

IHSS 197 (currently part of OU 16) to OU 13 for further investigation. As it is closely tied to IHSS 117.1 both historically and geographically, this section of the workplan should be modified to include the accessible portions of IHSS 197.

Section 6.3.1.3: The Division sees no reason to increase the grid spacing for the soil gas survey from 20' to 40' for this IHSS given that 1) the only documented release in this IHSS involved highly contaminated oils and 2) the adjacent IHSS (152) has documented releases of petroleum products.

One of the surface soil samples appears to be located on the berm of Tank 224. The Division does not understand the value of sampling the berm material and believes this sample should be relocated. The other four proposed surface soil sample locations appear on the four corners of the IHSS. Relating to Section 6 general comment 4 above, these locations do not seem appropriate for characterization purposes.

Section 6.3.1.4: Again, the Division is concerned about the rigidity with which the 20' grid has been applied. If, as is indicated in Section 2.1.1.4, the burning pit is located beneath Sage Avenue, then it seems reasonable to sample both sides of the road as close to the pavement edge as possible. If the soil gas probe needs to be placed deeper to account for the additional fill material at the surface, then do it.

The Division requests that perchloroethene be added to the soil gas analyte list based on text in Section 2.1.1.4.

Please justify whether a 20' triangular grid can, with sufficient probability, locate a soil gas anomaly associated with the burn pit. The burn pit may have been substantially smaller than the 32.2' by 15.6' ellipse mentioned in Section 5.1.2.4.

The Division requests that the survey area for IHSS 128 be expanded westward to Fourth Street. The reason for this is the uncertainty of the burn pit location based on Section 2.1.1.4 and Historical Release Report (HRR) text.

Section 6.3.1.5: Given that metal contamination is the most likely problem in this IHSS, the adequacy of five surface soil samples, only one of which is located in the central portion of the site, is questioned. The Division recommends that the HPGe survey be deleted from this IHSS and replaced by an expanded surface soil sampling program.

Section 6.3.1.6: Please clarify how the exact location of the OPWL, where it exits the south side of Building 123, will be determined for strategic location of the shallow soil boring.

If the invert elevation of the OPWL is 2.5 feet below the ground

surface in the vicinity of the shallow surface boring, and the boring will be advanced only 3 feet, how will an overlap of only 0.5 feet be able to evaluate releases? The Division recommends drilling and sampling this boring to bedrock as indicated in Sections 6.3.2 and 6.4.4.

Based on material presented in the HRR, The Division feels the investigation planned for this IHSS is over scoped. All of the survey points west of the eastern boundary of the west wing of Building 123 could be eliminated.

Section 6.3.1.7: Given the type of contamination that may be associated with this IHSS, the Division does not see any justification to increase the grid spacing of the soil gas survey from 20' to 40'.

Section 6.3.1.8: Associated with grid rigidity, please review the sample locations proposed north and south of Building 442.

Please state in this section of the text that the potentially affected portion of the Central Avenue Ditch included in this IHSS will be investigated during the comprehensive surface water and sediment sampling plan currently being developed by EG&G for DOE.

Section 6.3.1.12: It is unclear from the text how deep the four proposed borings will be drilled. The text indicates that two borings will be drilled to 10', but does not mention the planned depth of the other two. The Division recommends that all four borings be drilled and sampled to bedrock as indicated in Sections 6.3.2 and 6.4.4.

Section 6.4.1: The configuration of the HPGe equipment used during this investigation should assure 100% coverage. 100% coverage is consistent with the sampling program approved in other Workplans.

Section 6.4.3: This section needs to clarify that the surficial soil sampling methodology to be used in the OU 13 investigation is found in Section 5.2.3 (Jig and Scoop - RFP Method) of EMD OP GT.8 for unpaved areas and in Section 5.2.4 (Stainless Steel Scoop - Grab Sample) for paved areas. In addition, clarification should be added that the procedure to be used for collecting the surface soil samples in unpaved areas will include use of a one-square meter template that locates five subsamples taken at each sampling location and that a 2500 cm<sup>3</sup> composite will result rather than the 5000 cm<sup>3</sup> written in to OP GT.8. Details of the one-square meter template can be found in Technical Memorandum 5 to the Phase III RFI/RI Workplan for OU 1.