Ciniza

reference to RR Lagoon SWMU #8

Monzeglio, Hope, NMENV

From: Jim Lieb [jlieb@giant.com]

Sent: Wednesday, May 17, 2006 8:18 AM

To: Monzeglio, Hope, NMENV

Cc: Steve Morris

Subject: Fan Area/Overflow Area Report

Hope:

Steve and I searched for copy of the 1994 Annual Monitoring report that was referenced in the RR Rack Lagoon Closure report. We found copies of a 1994 Annual Groundwater Report and a 1994 OCD Groundwater Report but there is no soil boring data in them. Other documents here indicate that the soil boring data would be in the 1994 Annual Monitoring report but, in actuality so far as we can determine, may not be the case. When I prepared the report at home in Michigan I did not have access to the 1994 Annual Monitoring report which I otherwise would have checked to make sure it actually contained the boring data.

We are continuing the search to see if there is another 1994 Annual Monitoring Report that might contain the data. In the meantime, during my search thus far, I came across excerpt pages from an actual report on the fan out and overflow areas. I have attached scanned pages of this document to this email. Steve and I are also looking for the complete report that these pages came from.

Regards,

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DM, I couldn't find any mention of any type of monitoring of overflow or fan out areas. SCM

3.0 CONTAMINATION ASSESSMENT

During the RCRA Facility Investigation (RFI), the periphery of the Railroad Rack Lagoon was sampled to determine the extent of soil contamination. Six borings were made at the locations shown on Figure 8, with borings No. 1, 2, and 3 advanced at an angle of 30 degrees from the vertical to sample soils beneath the pond. Samples were collected at the 5, 8, and 10.5 ft levels and analyzed for volatile organic compounds (VOCs) (U.S. Environmental Protection Agency, EPA, Method 8240), semi-volatile organic compounds (SVOCs) (EPA Method 8270), and total metals (EPA Method 6010). An additional seven vertical borings were made along the overflow channel and the fan area to the north of the lagoon to determine if VOCs/SVOCs or metals were carried north in overflow situations (Figure 9). Samples were collected at the 0.5, 2.5, and 4.5 ft levels and analyzed for volatile, semi-volatile, and metal compounds by the methods listed above. The analytical results of the soil sampling program are summarized in Appendix B as well as in Tables 3.1 and 3.2 and are discussed in the following paragraphs.

3.1 ORGANIC COMPOUNDS

Of the 39 soil samples analyzed, nine contained low levels of VOCs and/or SVOCs. The compounds detected in the lagoon, overflow channel, and fan area soils are refined product residues from loading rack drips and spills that have followed the surface drains to the impoundment for over 35 years. The organic compounds detected consist of the VOCs ethylbenzene and xylenes, and the SVOCs naphthalene, methylnaphthalene, and phenanthrene. Table 3.1 lists all of the samples in which organic compounds were detected, the depth of the sample, and the identity and concentration of the compounds present.

3.1.1 Lagoon Soils

The first three columns in Table 3.1 characterize three detections in the 18 samples taken from the lagoon periphery. Borings No. 1 and 3 were angled under the lagoon berm and registered analyte concentrations above detection levels at the 5 ft depth. Boring No. 4 was

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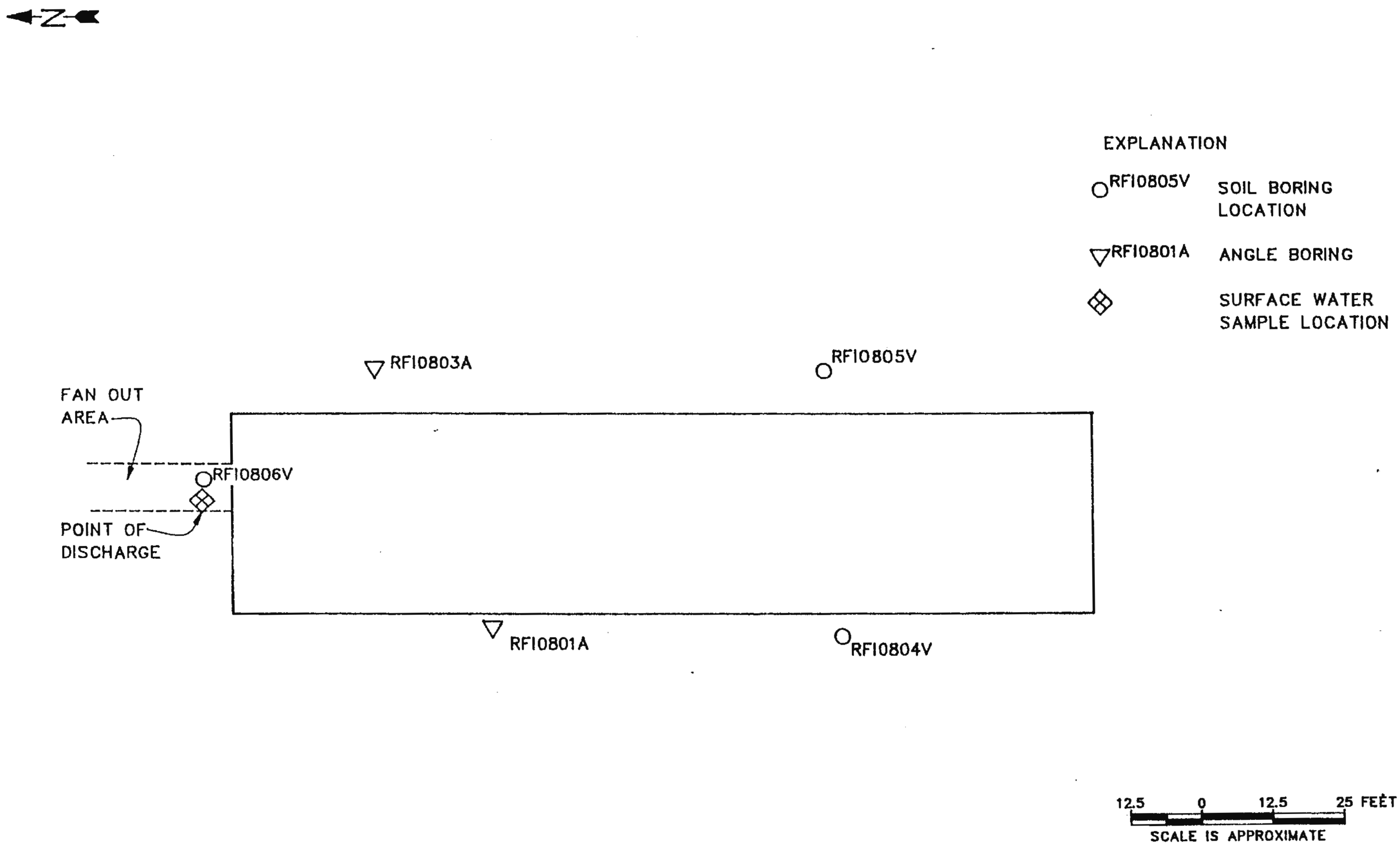

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FIGURE 8
SITE PLAN
RAILROAD RACK LAGOON
CINIZA REFINERY

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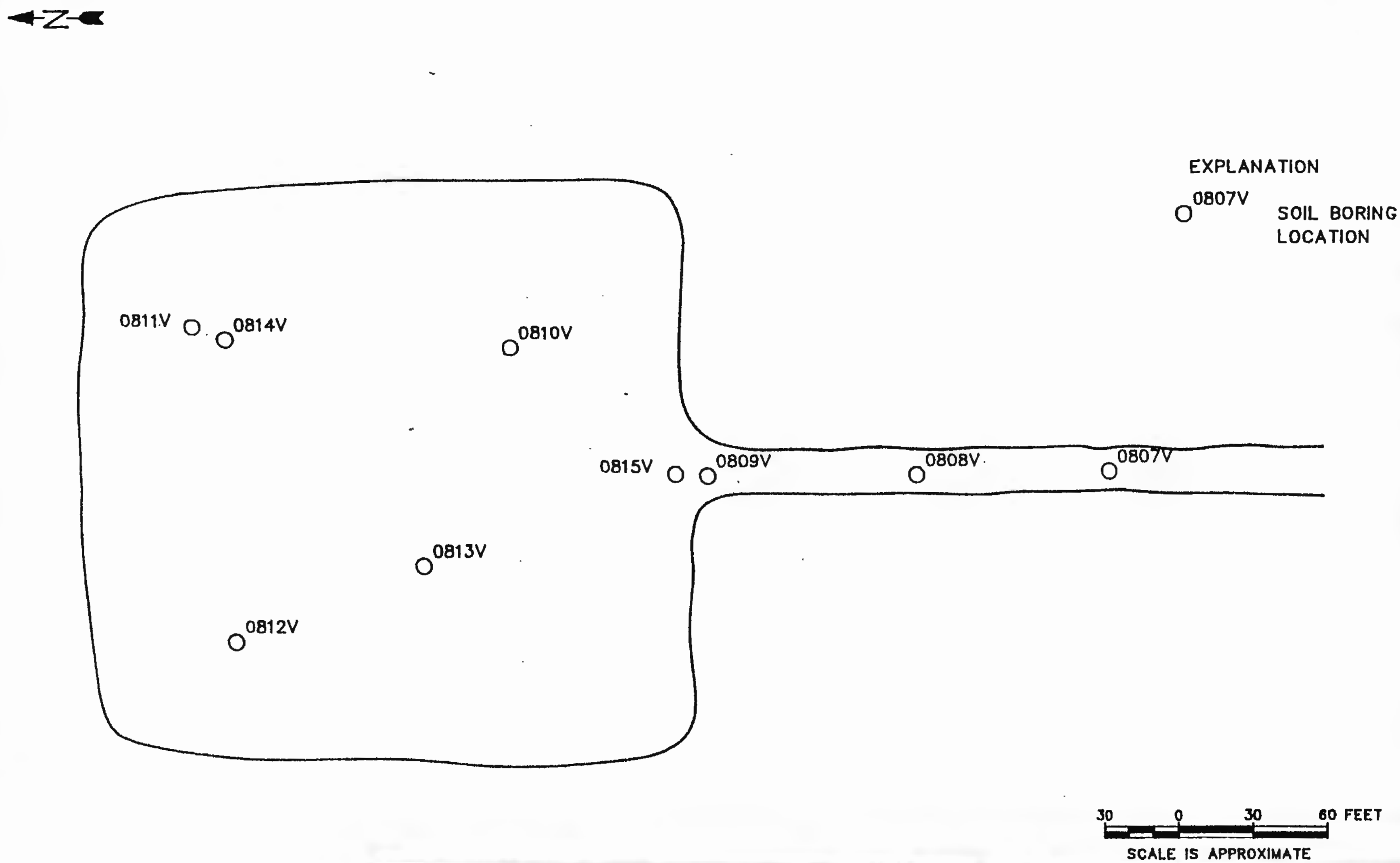

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FIGURE 9
SITE PLAN
OVERFLOW CHANNEL & FAN OUT AREA
CINIZA REFINERY
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of potassium. Compared to the organic compound concentrations, the inorganic detections are deeper. Since the background data indicates that the surface soils are richer in potassium than the subsurface layers, the detection of elevated potassium levels at depth suggests that soluble salts have been leached from the upper soil layers and redeposited at depth by infiltrating lagoon liquid.

3.2.2 Overflow Channel Soils

Table 3.2 characterizes two detections out of the nine samples taken along the overflow channel. Boring No. 9 indicates an elevated chromium level consistent with those detected under the lagoon. The results from Boring No. 7 indicate elevated levels of all metals screened, and are inconsistent with the rest of the site sampling and background information.

3.2.3 Fan Area Soils

Five of the 12 samples taken in the fan area indicate elevated levels of beryllium in the surface soils. Since subsurface soils exhibit these same levels in the background data, the detections appear to be due to loss of the surface soils in the fan area through wind erosion or borrow operations.

3.3 SUMMARY AND CONCLUSIONS

Considering that the Railroad Rack Lagoon has existed as an unlined impoundment for at least 35 years, the extent of VOC/SVOC-affected soil and the levels detected are minimal. Except for chromium, the inorganic compound concentrations are barely above background levels, and the chromium level is of the same order of magnitude as the local soils. All chromium detections are well below the 40 ppm action level of the proposed RCRA Corrective Action Rule, so remedial action is not required for the inorganic compounds.

With one exception, the organic compound detections are all within 5 ft of the surface, and with two exceptions, are below 100 mg/kg total VOC/SVOC. The two organic compound detections above 100 mg/kg consist of relatively immobile polynuclear aromatic hydrocarbons at a depth of 2.5 to 4.5 ft. [redacted]

The oily sludge layer and the soils on the lagoon bottom were not sampled during the RFI. These materials will undoubtedly require some form of treatment to reduce oil and grease and total petroleum hydrocarbons (TPH) and benzene, toluene, ethylbenzene, and xylenes (BTEX) concentrations to acceptable disposal levels. Given the clay and silt content of the site soils, and the tendency of the insoluble organics to adsorb to the clay particles, the organic compounds in the soil directly beneath the lagoon are expected to attenuate to acceptable levels within 1 to 2 ft of the lagoon bottom. Remediation of shallow soils within the lagoon footprint is likely to involve roughly 400 cubic yards of soil.

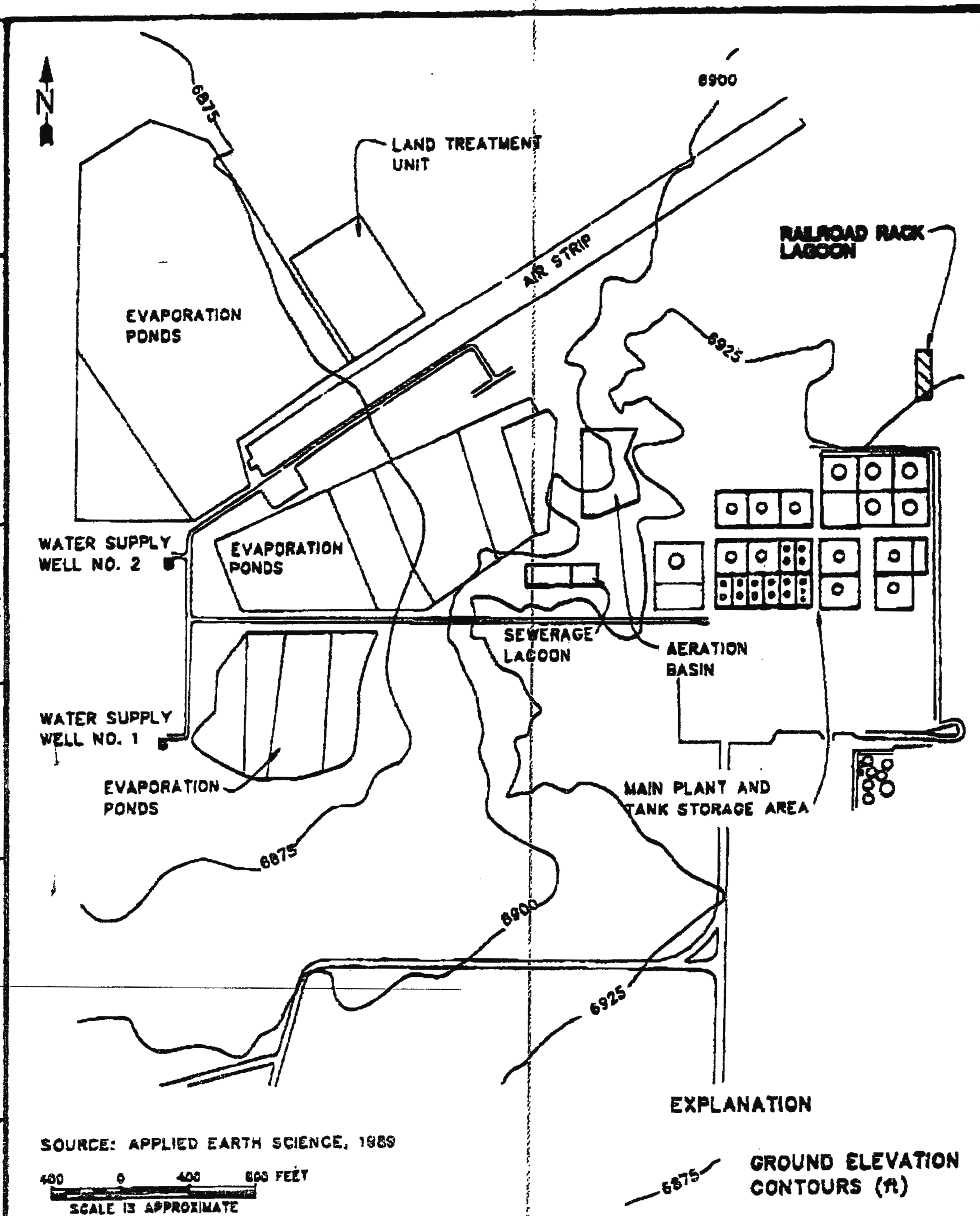

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FIGURE 9
SITE MAP
RAILROAD RACK LAGOON
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