Development Focus Area #1 Soil RFI Report
for DuPont Oakley Site

EXECUTIVE SUMMARY

INTRODUCTION

E.I. du Pont de Nemours and Company (DuPont) owns a 378-acre site in Oakley, California (Oakley Site). Approximately 155 acres of the Oakley Site, formerly used for chemical manufacturing and manufacturing-support activities, is undergoing investigation and remediation activities in accordance with the Resource Conservation and Recovery Act (RCRA). The goal of the RCRA investigation and remediation activities is to support redevelopment at the Oakley Site as a business park with a mix of industrial and commercial/retail uses in a way that is protective of human health and the environment.

The RCRA investigation has identified manufacturing-related contamination in both soil and groundwater. This report addresses soil investigation results for the approximately 26.6-acre area designated as Development Focus Area 1 (DFA1) (see Figure ES-1). Groundwater investigation results are presented in separate reports. Three evaluation units located within DFA1 were investigated for this report. These are Solid Waste Management Unit (SWMU) 4.34 – Titanium Dioxide [TiO2] Landfill, Area of Potential Concern (AOPC) 3.3b – Second Sandblasting Area, and Open Area (OA) – DFA1 (the area within DFA1 that was not associated with manufacturing or manufacturing-support activities). These three areas are depicted in Figure ES-2.

The TiO2 Landfill was originally the "borrow pit" from which clean soils were obtained to place in retention ponds and basins after closure. Subsequent to the Central Valley Regional Water Quality Control Board approving the borrow pit as an on-site nonhazardous landfill, dredge spoil material from the TiO2 process North and South Retention Ponds was placed in the TiO2 Landfill. Currently, the landfill material is approximately 1.5 to 3 feet thick1 and consists of the TiO2-process spent ore that was acid-leached and settled in the TiO2 ponds.

The AOPC 3.3b area was used for sandblasting to clean and remove paint from TiO2-manufacturing-related equipment and bricks. The structure is still in place and consists of a shed with open sides and a paved floor.

The OA-DFA1 consists of the area within DFA1 that was not associated with a known SWMU, AOC, or AOPC.

The DFA1 Soil RCRA Facility Investigation (RFI) Report is the final soil RFI report for the DFA1 area and is a key document that will support the DFA1 Release Report. The release report will provide the documentation needed for the Department of Toxic Substances Control (DTSC) to release DFA1 (with controls) from the RCRA permit to enable redevelopment. The DFA1 Release Report will address other media (e.g., groundwater) and other exposure pathways (e.g.,

[1] There may, however, be localized areas where the depth of the fill material is greater than three feet.

vapor intrusion into new buildings) that were not evaluated in the DFA1 Soil RFI. DuPont will submit the DFA1 Release Report after DTSC has approved this DFA1 Soil RFI Report.

SOIL INVESTIGATION AND DATA QUALITY ASSESSMENT

Soil data quality and usability were evaluated to determine whether or not the quality of the data collected for the DFA1 Soil RFI report was sufficient to support the characterization of the site-related constituent concentrations and associated human health risks. The DFA1 Soil RFI dataset consists of historical data (i.e., data collected during historical sampling programs preceding the Phase 1 Soil RFI) and data collected during the Phase 1 and Phase 2 Soil RFI field investigations. Based on the data quality assessment, all data collected to evaluate DFA1 were determined to be usable.

CHARACTERIZATION OF NATURE AND EXTENT OF CONSTITUENTS IN SOIL

The nature and extent of constituents and constituents of potential concern (COPCs) in and directly adjacent to DFA1 were characterized. A risk-based screening step was used to identify COPCs for each evaluation unit using the analytical data identified for that unit. Constituents with maximum concentrations exceeding background levels and human health direct contact risk-based screening concentrations (RBSCs) were identified as COPCs and were retained for further evaluation.

Only one of the three evaluation units characterized within DFA1 (the TiO2 Landfill, aka SWMU 4.34) had a constituent (vanadium) that was a COPC. The constituent concentrations that exceeded RBSCs were surrounded by samples with concentrations below background levels or RBSCs. It was therefore determined that the spatial distribution of samples was adequate to characterize constituent concentrations and determine the extent of elevated concentrations.

The results of the off-site residential screening evaluation indicated that maximum concentrations of all constituents were orders of magnitude below their respective RBSCs. Therefore, it can be concluded that off-site residents should not experience unacceptable exposures as a result of the conditions at DFA1.

DFA1 boundary samples were evaluated to confirm that there were no elevated concentrations of constituents at locations adjacent to the boundary. The absence of COPCs in this area confirms that the DFA1 boundary line is appropriate.

HUMAN HEALTH RISK ASSESSMENT

In the human health risk assessment (HHRA), risks were calculated for those evaluation units with COPCs. In addition, for evaluation units that did not have COPCs, risks were evaluated to confirm that the cumulative risk from all constituents detected in at least one sample (or for inorganic constituents, detected above background levels) were below benchmark values. Results of the risk assessment showed that cancer and noncancer risk estimates for all three evaluation units, considering all exposure scenarios, were below the benchmark levels.

UNCERTAINTY ANALYSIS

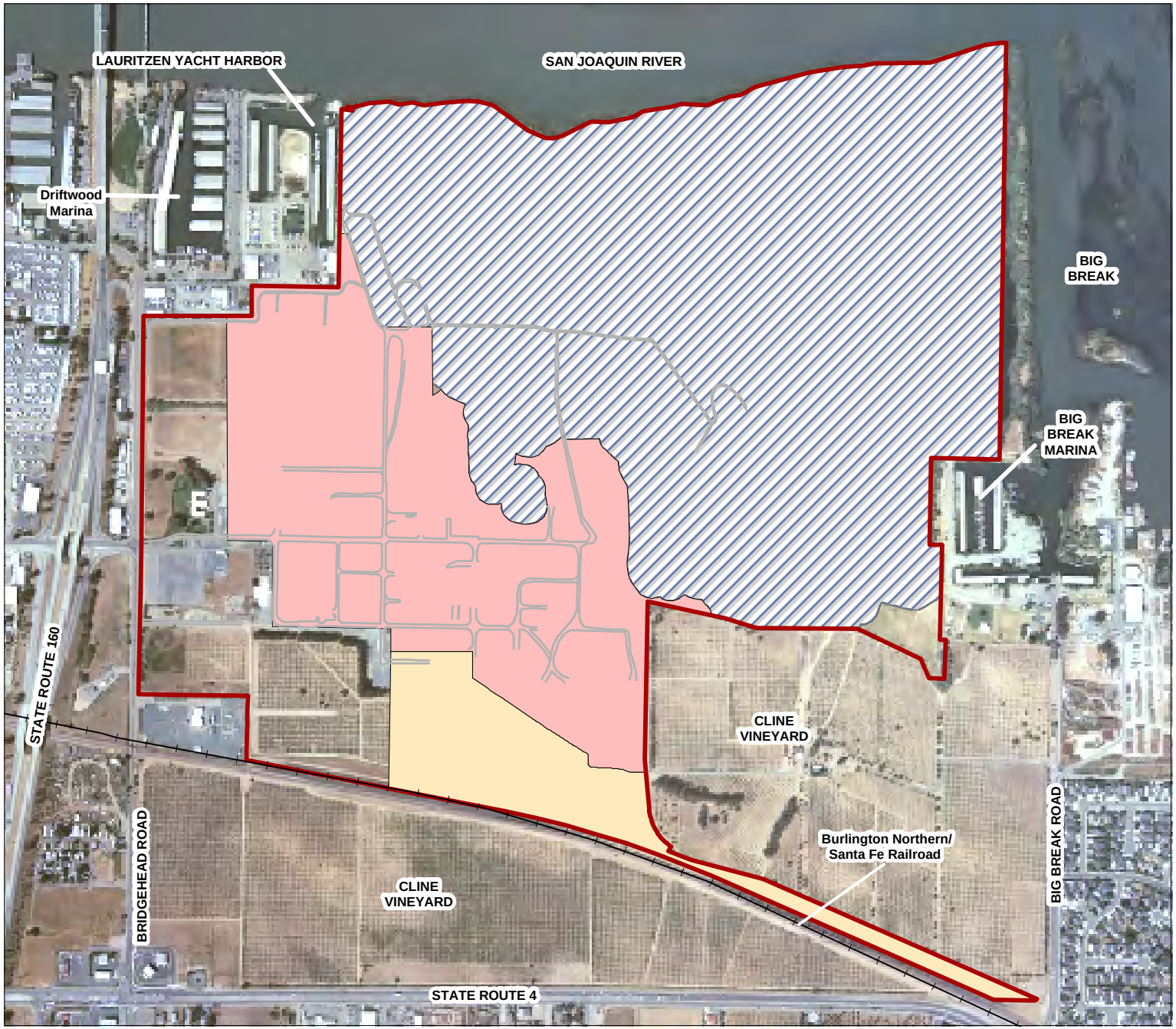
An uncertainty analysis was conducted to identify key uncertainties associated with both the nature and extent characterization of site-related constituents and the HHRA, in order to determine the potential impact of these uncertainties on vertical and horizontal characterization of impacted soil, estimates of risk, and redevelopment decisions. In summary, where uncertainty existed in the assessment, assumptions and inputs were selected to ensure that site risks were not underestimated.

RESULTS, CONCLUSIONS, AND RECOMMENDATIONS

No data gaps were identified because all samples identified for collection within DFA1 were collected by the time Phase 2 RFI sampling was complete and the data collected were sufficient to meet the objectives stated above. Based on the data quality and usability evaluation, all data collected within DFA1 were determined to be usable.

Only one constituent (vanadium) was identified as a COPC in one evaluation unit for DFA1 (the TiO2 Landfill - SWMU 4.34). All constituent concentrations that exceeded COPCs were surrounded by samples with concentrations below background levels or RBSCs. Therefore, the spatial distribution of samples is determined to be adequate to characterize constituent concentrations and determine the extent of elevated concentrations.

Results of the risk assessment showed that cancer and noncancer risk estimates associated with direct contact with soil for all three evaluation units were below benchmark levels. These results indicate that, in its current condition, DFA1 soils are suitable for future Commercial/Industrial use and does not require additional characterization or remediation in order to be protective of people directly contacting soil under this anticipated land use.



Legend

- Roads
- Railroad
- DFA1
- DFA2
- Area Excluded from Redevelopment
- Oakley Site Boundary

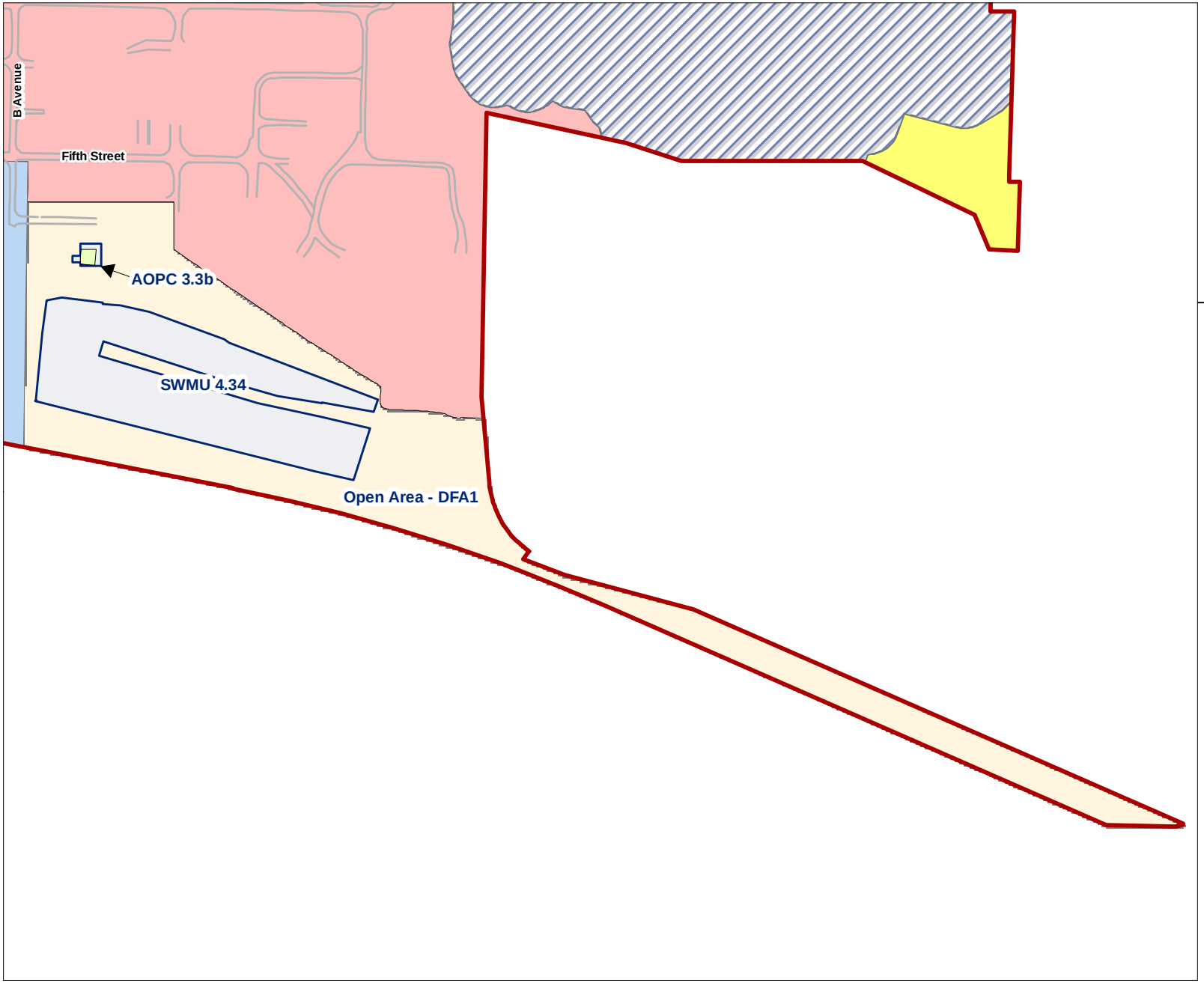
0 350 700 1,400 Feet

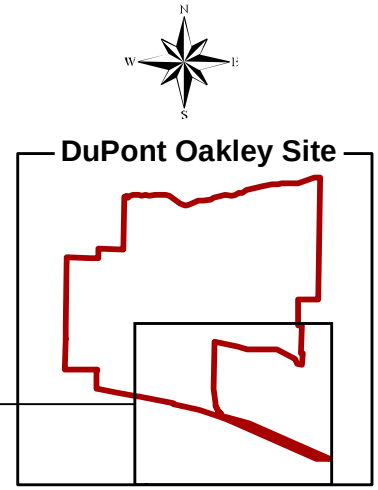
Corporate Remediation Group
An Alliance between
DuPont and URS Diamond

140 Cypress Station Drive
Houston, Texas 77090

DFA1 and DFA2
DFA1 Soil RFI Report
DuPont Oakley Site

DWN:	PROJECT:
KR	
DATE:	FIGURE NO.:
August 2008	ES-1





Legend

- Roads
- DFA1 Soil Evaluation Units
- Features from Historical Drawings
- DFA1
- DFA2
- Eastern Development Area
- Western Development Area
- Area Excluded From Redevelopment
- Oakley Site Boundary

0 150 300 600 Feet

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DFA1 Evaluation Units
DFA1 Soil RFI Report
DuPont Oakley Site

DWN:	PROJECT:
KR	
DATE:	FIGURE NO.:
August 2008	ES-2