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Appendices F through R

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Draft

Parcel E-2
Remedial Investigation/Feasibility Study

Hunters Point Shipyard
San Francisco, California

March 2007

Prepared for:
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Submitted by:
Engineering/Remediation Resources Group, Inc. and Shaw Environmental, Inc.

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Appendix B Final Parcel E Nonstandard Data Gaps Investigation Landfill Lateral Extent Evaluation (provided on compact disc only)

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Appendix D Final Parcel E Nonstandard Data Gaps Investigation Wetlands Delineation and Function and Values Assessment Parcel B and E (provided on compact disc only)

Appendix E Final Removal Action Landfill Cap Closeout Report (provided on compact disc only)

The above appendices are on the first CD

Appendix F Draft Removal Action Closeout Report, Landfill Gas Removal Action (provided on compact disc only)

Appendix G Draft Shoreline Characterization Technical Memorandum (provided on compact disc only)

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Acronyms and Abbreviations

14 CCR	Title 14 California Code of Regulations
22 CCR	Title 22 California Code of Regulations
27 CCR	Title 27 California Code of Regulations
40 CFR	Title 40 Code of Federal Regulations
16 USC	Title 16 United States Code
§	Section
µg/L	micrograms per liter
ACM	asbestos-containing material
AFA	AFA Construction Group
ARAR	applicable or relevant and appropriate requirement
ATSDR	Agency for Toxic Substances and Disease Registry
ATT	Aqua Terra Technologies
BAAQMD	Bay Area Air Quality Management District
Basin Plan	Comprehensive Water Quality Control Plan for the San Francisco Bay Basin
Bay	San Francisco Bay
BCDC	San Francisco Bay Conservation and Development Commission
BCT	Base Realignment and Closure Cleanup Team
BERA	baseline ecological risk assessment
BGMP	Basewide Groundwater Monitoring Program
bgs	below ground surface
BHC	benzene hexachloride
BMP	best management practice
BRAC	Base Realignment and Closure
CCR	California Code of Regulations
CDM	CDM Federal Programs Corporation

Acronyms and Abbreviations *(continued)*

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CIWMB	California Integrated Waste Management Board
cm/sec	centimeters per second
COC	chemical of concern
COPC	chemical of potential concern
CPT	cone penetrometer test
CSC	California species of special concern
DCA	dichloroethane
DCB	dichlorobenzene
DCE	dichloroethene
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethene
DDT	dichlorodiphenyltrichloroethane
DHS	California Department of Health Services
DNAPL	dense non-aqueous phase liquid
DoD	U.S. Department of Defense
DQO	data quality objective
DTSC	Department of Toxic Substance Control
EE/CA	engineering evaluation/cost analysis
EEC	Eagle Environmental Construction
EFA West	Engineering Field Activity West
ELCR	excess lifetime cancer risk
EMCON	EMCON Associates
EPA	U.S. Environmental Protection Agency
ERA	ecological risk assessment
ER-M	effects range-median
ERRG	Engineering/Remediation Resources Group, Inc.
ESAP	environmental sampling and analysis plan

Acronyms and Abbreviations *(continued)*

ESL	environmental screening level
FFA	federal facilities agreement
FS	feasibility study
FSP	field sampling plan
FUDS	formerly used defense site
GAC	granular activated carbon
GCL	geosynthetic clay liner
GDGI	groundwater data gaps investigation
GES	groundwater extraction system
GMP	gas monitoring probe
gpd	gallons per day
GRA	general response action
HELP-3	Hydrogeologic Evaluation of Landfill Performance, Version 3
HDPE	high-density polyethylene
HGAL	Hunters Point groundwater ambient levels
HHRA	human health risk assessment
HI	hazard index
HLA	Harding Lawson Associates
HPAL	Hunters Point ambient level
HPS	Hunters Point Shipyard
HQ	hazard quotient
HRA	Historical Radiological Assessment
IAS	initial assessment study
IDW	investigation-derived waste
IR	Installation Restoration
IRP	Installation Restoration Program
IT	International Technology Corporation

Acronyms and Abbreviations *(continued)*

ITSI	Innovative Technical Solutions, Inc
Kleinfelder	Kleinfelder, Inc.
LEL	lower explosive limit
LFR	Levine-Fricke-Recon
LNAPL	light non-aqueous phase liquid
LRL	laboratory reporting limit
MCL	maximum contaminant level
MDL	method detection limit
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MPE	maximum probable earthquake
msl	mean sea level
NACIP	Navy Assessment and Control of Installation Pollutants
NAVFAC	Naval Facilities Engineering Command
NAVSEA	Naval Sea Systems Command
Navy	U.S. Department of the Navy
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NDGI	nonstandard data gaps investigation
NEESA	Naval Energy and Environmental Support Activity
NMOC	nonmethane organic compound
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRDL	Naval Radiological Defense Laboratory
NTCRA	non-time-critical removal action
O&M	operation and maintenance
OU	operable unit

Acronyms and Abbreviations *(continued)*

PAH	polycyclic aromatic hydrocarbon
PAMP	perimeter air monitoring program
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
pCi/L	picoCuries per liter
PeCDF	pentachlorodibenzofuran
PMO	Program Management Office
ppm	parts per million
ppmv	parts per million by volume
PQL	practical quantitation limit
PRC	PRC Environmental Management
PRG	preliminary remediation goal
PSC	protective soil concentration
PVC	polyvinyl chloride
QAPP	quality assurance project plan
QCSR	quality control summary report
R&D	research and development
RAO	remedial action objective
RASO	Radiological Affairs Support Office
RBC	risk-based concentration
RCRA	Resource Conservation and Recovery Act
RI	remedial investigation
RIEC	remedial investigation evaluation criteria
ROD	record of decision
RWQCB	Regional Water Quality Control Board
SCRS	surface confirmation radiation survey
SDGI	standard data gap investigation
SFDA	San Francisco District Attorney

Acronyms and Abbreviations *(continued)*

SFRA	San Francisco Redevelopment Agency
Shaw	Shaw Environmental, Inc.
SLERA	screening-level ecological risk assessment
SPT	standard penetration test
SSF	site specific factors
SulTech	Sullivan Consulting Group and Tetra Tech EM, Inc.
SVOC	semi-volatile organic compound
SWAQAT	Solid Waste Air Quality Assessment Test
SWDMP	stormwater discharge management plan
SWRCB	State Water Resources Control Board
TCA	trichloroethane
TCE	trichloroethene
TCRA	time-critical removal action
TDS	total dissolved solids
TIZ	tidal influenced zone
TMZ	tidal mixing zone
TOG	total oil and grease
TPH	total petroleum hydrocarbons
TPH-d	TPH as diesel
TPH-g	TPH as gasoline
TPH-mo	TPH as motor oil
Triple A	Triple A Machine Shop, Inc.
TRV	toxicity reference value
TtEMI	Tetra Tech EM, Inc.
TtFW	Tetra Tech FW, Inc.
UCL	upper confidence limit
UCSF	University of California, San Francisco
Uribe	Uribe and Associates, Inc.
USACE	U.S. Army Corps of Engineers

Acronyms and Abbreviations *(continued)*

VOC	volatile organic compound
WBZ	water-bearing zone
WESTEC	WESTEC Services, Inc.
WQO	water quality objective