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Monsanto

C.M. Hancock - Env. Affairs - Texas City, TX 0-21 - Ext. 3852

August 29, 1983

Outline of September 1, 1983 Texas City Plant Groundwater Assessment

E.N. Brasfield	(SL)	G5WA
C.F. Callis	(SL)	G5WA
W.D. Carpenter	(SL)	G3WG
B.E. Huntsman		1250
C.D. Malloch	(SL)	G3WG
P.S. Park	(SL)	G3WB
M.A. Pierle	(SL)	G3WG
G. Roush	(SL)	G2WG
M.C. Throdahl	(SL)	D1D
W.W. Varnado	(SL)	G4WB

cc:

G.A. Daues		0-10A
R.S. Jackson		0-13
S.G. Pappas		0-10
Raeann Reid		0-21
G.M. Rinaldi		0-21
G.T. Ryan		0-11
G.E. Sprock		513D
G.L. Tromblee		0-10
M.F. Weishaar	(SL)	G5WA

AUG 31 1983

The outline of the Texas City Plant Groundwater Assessment presentation scheduled for September 1, 1983 are attached for your review.

C.M. Hancock

C.M. Hancock

CMH:js
Enclosure

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TEXAS CITY PLANT

- SITE HISTORY
- WASTE DISPOSAL HISTORY
- PLANT SITE
  - POTENTIAL PROBLEM EVALUATION
- SOUTH 20 SITE
  - REMEDIAL ACTION MONITORING
- NORTH 80 SITE
  - REMEDIAL ACTION DEVELOPMENT
- SUMMARY/CONCLUSIONS

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SUBJECTS NOT ADDRESSED

- MOTCO
- ANDERS LANE
- HURRICANE ALICIA

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AREA FEATURES AFFECTING SITE & GROUNDWATER

- GALVESTON BAY & TEXAS CITY SHIP CHANNEL
- TEXAS CITY SEAWALL
- SUBSIDENCE
- TEXAS CITY FLOOD PROTECTION SYSTEM

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TEXAS CITY SITE PROCESS HISTORY

TEXAS SUGAR REFINERY	1923 →	1941
ETHYLBENZENE/STYRENE	1943 →	PRESENT
ACETYLENE COMPLEX	1952 →	1970
CYANIDE COMPLEX		
HCN	1952 →	1976
AN	1977 →	PRESENT
SYNTHESIS GAS COMPLEX	1970 →	PRESENT
POLYETHYLENE	1955 →	1982

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CURRENT WASTE DISPOSAL SYSTEMS

WASTEWATER

PRIMARY TREATMENT 1972

SECONDARY TREATMENT GCWDA – 1972

INJECTION WELLS #1 WELL) 1977
#2 WELL)
MALONE 1970

LIQUIDS

INCINERATION PROCESS UNIT
ROLLINS

UTILITY BOILERS

SOLIDS

LANDFILL GCWDA
ROLLINS

BY-PRODUCT SALES

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FACILITIES WITH POTENTIAL FOR GROUNDWATER IMPACT

- PRIMARY TREATMENT SURFACE IMPOUNDMENTS AND DRYING BEDS N:LM ARCH
- INJECTION WELLS
- SEWERS AND UNDERGROUND PIPELINES
- NORTH DITCH AND HOLDING POND

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NORTH DITCH

- POTENTIAL GROUNDWATER PROBLEM ON SITE
- HISTORY — 1952
- GEOLOGY — FILL 0 TO 20' DEEP
- CHANGES IMPROVING DITCH WATER QUALITY
- FUTURE PLANS

12 wells — one nearest building and downstream in pond

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SOUTH 20 REMEDIAL ACTION/CLOSURE

- CONTAMINATED GROUNDWATER REMOVED BY PURGE WELLS
- HYDRAULIC GRADIENT REVERSED BY PUMPING POND
- WATER TREATING SLUDGE USED TO FILL POND

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NORTH 80 HISTORY

- DISPOSAL SITE -- 1954 - 1975
- GALVESTON COUNTY EASEMENT GRANTED 1963
  - SEAWALL CONSTRUCTED
- ACCESS FOR GENERAL PUBLIC
  - RECREATIONAL AREA
- TEXAS CITY FLOOD CONTROL PROJECT -- 1982
- EVIDENCE OF WASTE MOVEMENT

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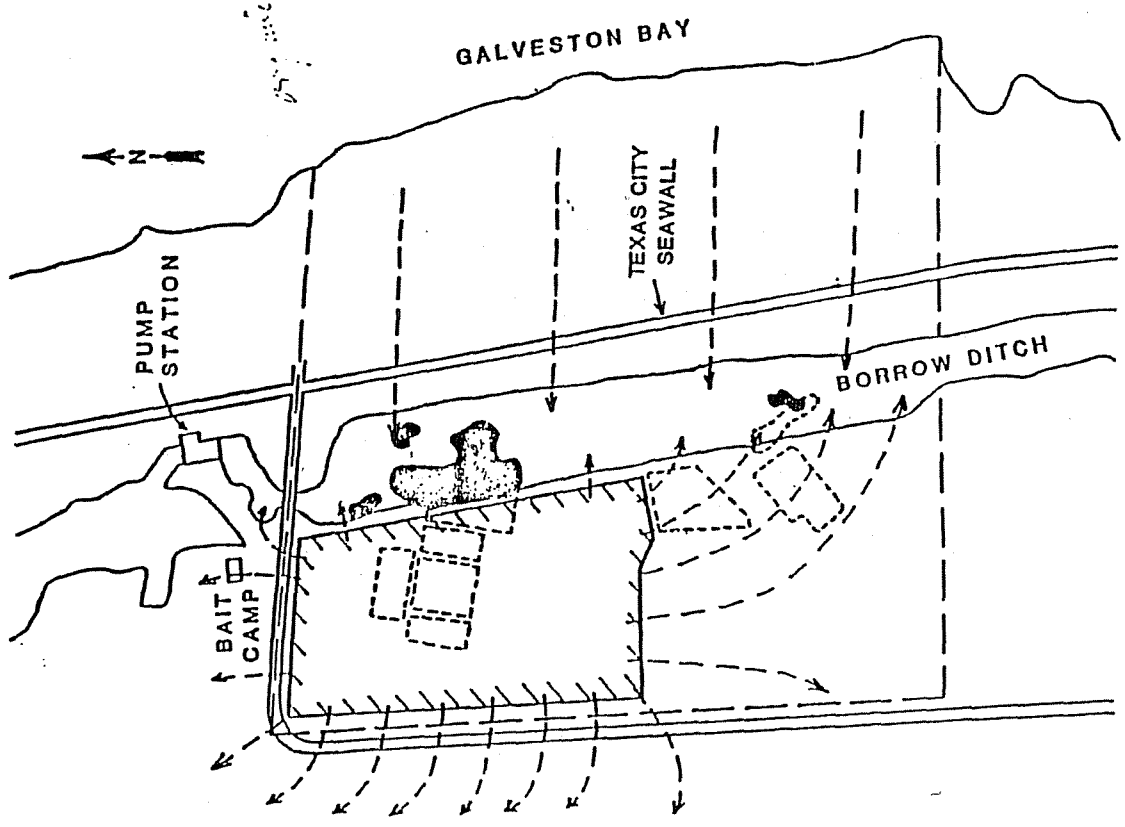
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SIGNIFICANT FINDINGS OF SITE ASSESSMENT

- GROUNDWATER AND SOIL CONTAMINATION
- MULTI-PHASE FLOW OF CHLORINATED HYDROCARBONS AND CONTAMINATED GROUNDWATER
- CHLORINATED HYDROCARBONS ARE INCREASING PERMEABILITY OF NATIVE CLAYS
- WASTE MATERIALS ARE MIGRATING FROM EAST HALF OF PROPERTY TOWARD BORROW DITCH BUT DO NOT CONTRIBUTE TO SHEEN AT THIS TIME

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OBJECTIVES OF REMEDIAL ACTION

- CONTROL RELEASE OF FLOATING ORGANIC MATTER ("SHEEN") TO "BORROW DITCH"
- CONTROL OFF-SITE MIGRATION OF CONTAMINATED GROUNDWATER

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TECHNICAL APPROACH

- PHASE I
  - TRENCH DRAIN NETWORK IN SETTLING POND
  - CLAY CAP OVER WEST SIDE
- PHASE II (IF NEEDED)
  - SUBSTITUTE CONDUIT OR CULVERT FOR BORROW DITCH
  - BACKFILL BORROW DITCH
  - CONCRETE SLURRY WALL ALONG SOUTH PROPERTY LINE
- PHASE III (IF NEEDED)
  - SOIL-BENTONITE SLURRY WALLS ALONG NORTH AND WEST PROPERTY LINES

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CONCLUSIONS

- GROUNDWATER CONTAMINATION PROBLEMS AT NORTH 80 AND SOUTH 20 HAVE BEEN ADEQUATELY ASSESSED
- AREAS OF POTENTIAL SITE GROUNDWATER CONTAMINATION IDENTIFIED
- ADDITIONAL WORK IN PROGRESS
- ASSESSMENT HAS INCREASED KNOWLEDGE AND AWARENESS
- TEXAS CITY PLANT IS COMMITTED TO AND ADEQUATELY ADDRESSING ITS KNOWN AND POTENTIAL GROUNDWATER PROBLEMS

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