PLATES

PLATE: 1
SITE PLAN AND TOPOGRAPHY

KERR-McGEE CHEMICAL LLC
HENDERSON, NEVADA

LAND OWNERSHIP
- BMI
- CHEMSTAR
- KERR-McGEE
- PIONEER
- TIMET

- MONITOR WELL
- RECOVERY WELL
- SOIL BORING / P&A WELLS
- PROPERTY PARCELS
- ELEVATION CONTOUR (C.I. = 5 FEET)
- RAILROADS
- MAJOR ROADS
- BUILDINGS
- SEEP PUMPING STATION
- BARRIER WALL
- A —— A' LINE OF SECTION

1 inch = 1,000 feet
1: 12000
0 1,000 2,000 3,000 Feet

N

FEBRUARY 2005

NEVADA EAST (NAD 83)

Plate_1_Location_Map.mxd

820000 825000 830000 835000
26735000 26730000 26725000 26720000 26715000

PLATE: 2
SURFACE OF THE MUDDY CREEK FORMATION (FINE - GRAINED FACIES)

KERR-McGEE CHEMICAL LLC
HENDERSON, NEVADA

M-103 WELL IDENTIFICATION
• MONITOR WELL
1822 ELEVATION OF MUDDY CREEK FM (FT AMSL)
▲ RECOVERY WELL
■ BORING AND P&A WELL
—1610— ISOELEVATION LINE ON SURFACE OF MUDDY CREEK (DASHED WHERE INFERRED) CONTOUR INTERVAL = 10 FEET
SEEP PUMPING STATION
BARRIER WALL

LAND OWNERSHIP
BMI
CHEMSTAR
KERR-McGEE
PIONEER
TIMET
A – – A' LINE OF SECTION

1 inch = 1,000 feet
1: 12000
0 1,000 2,000 3,000 Feet

N

FEBRUARY 2005

NEVADA EAST (NAD 83)

plate_2_surf_muddy_creek_fm.mxd

820000 825000 830000 835000
26739000 26734000 26729000 26724000 26719000 26714000

Las Vegas Wash
Las Vegas Valley Lateral
Pittman Lateral
RUSSELL ROAD
SUNSET ROAD
INTERSTATE 515
PABCO
LAKE MEAD DR
PITTMAN LATERAL
BMI
Timet
Pioneer
Kerr-McGee
R 62 E
R 63 E

PLATE: 3
ALLUVIAL THICKNESS
MAY 2004

KERR-McGEE CHEMICAL LLC FACILITY
HENDERSON, NEVADA

M-10 WELL IDENTIFICATION
• MONITOR WELL
43 ALLUVIAL THICKNESS
▲ RECOVERY WELL
■ BORING AND P&A WELL
—40— ISOCONTHICKNESS LINE OF ALLUVIUM (DASHED WHERE INFERRED) CONTOUR INTERVAL = 10 FT
>32 PARTIAL ALLUVIAL THICKNESS
SEEP PUMPING STATION
BARRIER WALL

LAND OWNERSHIP
BMI
CHEMSTAR
KERR-McGEE
PIONEER
TIMET

A— —A' LINE OF SECTION

1 inch = 1,000 feet
1: 12000
0 1,000 2,000 3,000 Feet

N

FEBRUARY 2005

NEVADA EAST (NAD 83)

plate_3_alluv_thk_may04.mxd

Kerr-McGee
Pioneer
Timet
BMI
PITTMAN LATERAL
Las Vegas Wash
Las Vegas Valley Lateral
Pittman Lateral
RUSSELL ROAD
SUNSET ROAD
INTERSTATE 515
PABCO
LAKE MEAD DRIVE
R 62 E
R 63 E
820000
825000
830000
835000
26735000
26730000
26725000
26720000
26715000

PLATE 4A

HYDROGEOLOGIC CROSS SECTION A - A' AND E - E'

EAST-WEST THROUGH SEEP WELL FIELD

KERR-MCGEE CHEMICAL LLC FACILITY

HENDERSON, NEVADA

1"=200' (H); 1"= 40' (V) JANUARY 2005

data_file:"land_x_sect"/layer_prefix:"_p-x-land"

SEE PLATE 1 FOR LOCATION

200 FT

40 FT

GROUNDWATER LEVELS MEASURED MAY 2004

SCREENED INTERVAL

62 DEPTH IN FT

TRACER TEST SITE C

WEST

A

1600

1560

1520

1480

HMW-9 1544'

gravel

sd/gravel

sdy gravel

silty gravelly sand

clay (silty) sd

silty clay/ silt

sdy gravel

silty gravelly sand

silty sdy gravel

silty clay

sdy gravel

silty clay w/ gravel

clay w/ silt

silty clay

No lith.

clay w/ obs gyp

MW-K8 1560'

(D) PC-93 1549'

(S) PC-94 1549'

(D) PC-94 1549'

(D) PC-91 1552'

(S) PC-92 1552'

LG 019

MW-K3(slitted in) 1554'

(D) PC-88 1551'

(M) PC-89 1551'

(S) PC-90 1550'

RZ 99 116 R 117

RZ/83

sdy gravel

grvly zone

gravel

sand

121 120 119 118 115 R 117

(D) PC-85 1554'

(M) PC-86 1554'

(S) PC-87 1554'

coal/lifted 38.5

gravel

clay/silty clay

47 67

51 62

silty clay

No lith.

70

TD 1540'

clay

70

MW-K6 1556'

(D) PC-82 1559'

(M) PC-83 1559'

(S) PC-84 1559'

sd/clay gravel

silty gravel

sdy gravel

sand

silty gravel

sdy silt

sand

sdy gravel

silty clay gravel

sand

silty sand

silty gravel

sand

silty clay

silty sand

silty gravelly sand

silty sand

silt

clay

56

(D) PC-79 1564'

(M) PC-80 1564'

(S) PC-81 1564'

silty sand

Projected PC 69 1568'

silty gravelly w/gravel

sand

52

Projected HSC-1 1570'

(D) PC-77 1567'

(S) PC-78 1567'

Projected

gravel ± silty sand

sdy silt

sdy gravel silt

sand

45 Contns.gravel

NDE

62

clay

76

TD 995'

silt,clay, gypsum, anhydrite to 995'

?

MUDDY CREEK FORMATION

QUATERNARY ALLUVIUM

red brn sdy silt

55

sd,m-g.

sand,gravel

Projected LG 027 1586'

EAST

A'

E

HSC-2

(D) PC-96 1553'

(D) PC-95 1551'

(D) PC-97 1549'

E'

1560

DTW 5/04

QUATERNARY ALLUVIUM

silty sand

silty gravelly sand

silty sdy gravel

silty sand

silty sand

gravel

silty sand

clay silt

45

silty clay

50

MUDDY CREEK FORMATION

clay silt

silty sand

clay

70

MW-K6 1556'

(D) PC-82 1559'

(M) PC-83 1559'

(S) PC-84 1559'

TD 1540'

clay

70

MW-K3(slitted in) 1554'

(D) PC-88 1551'

(M) PC-89 1551'

(S) PC-90 1550'

RZ 99 116 R 117

RZ/83

sdy gravel

grvly zone

gravel

sand

121 120 119 118 115 R 117

(D) PC-85 1554'

(M) PC-86 1554'

(S) PC-87 1554'

coal/lifted 38.5

gravel

clay/silty clay

47 67

51 62

silty clay

No lith.

70

LG 019

(D) PC-91 1552'

(S) PC-92 1552'

(D) PC-94 1549'

(S) PC-93 1549'

MW-K8 1560'

gravel

HMW-9 1544'

1600

1560

1520

1480

WEST

A

EAST

A'

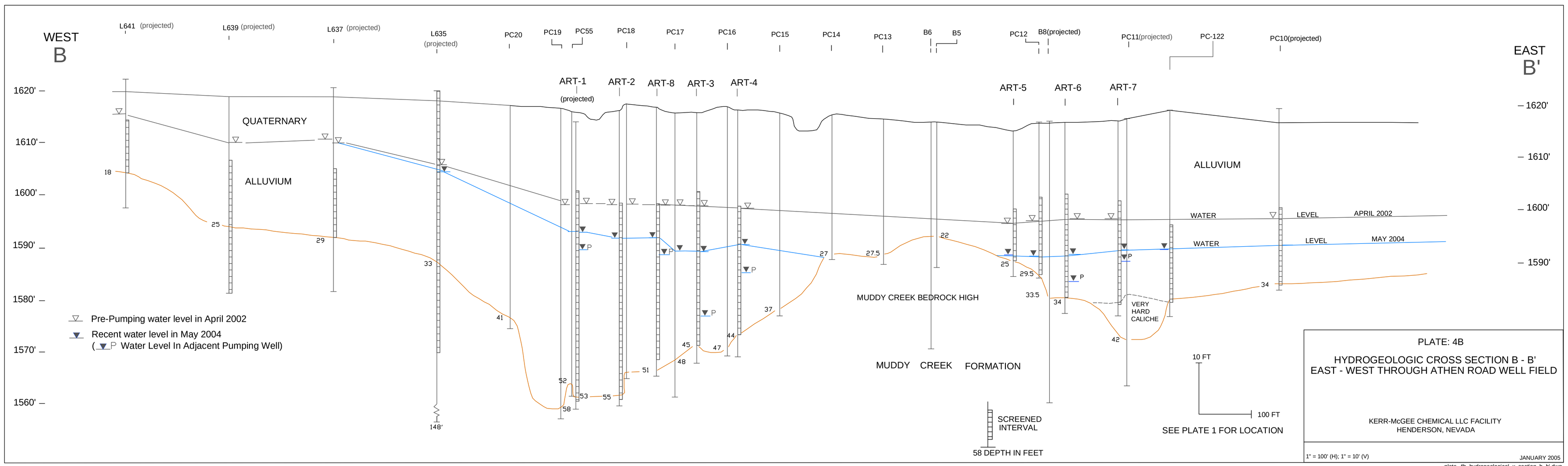


PLATE: 4B

HYDROGEOLOGIC CROSS SECTION B - B'
EAST - WEST THROUGH ATHEN ROAD WELL FIELD

KERR-McGEE CHEMICAL LLC FACILITY
HENDERSON, NEVADA

1" = 100' (H); 1" = 10' (V)

JANUARY 2005

plate_4b_hydrogeological_x_section_b_b'.dwg

WEST
C

EAST
C'

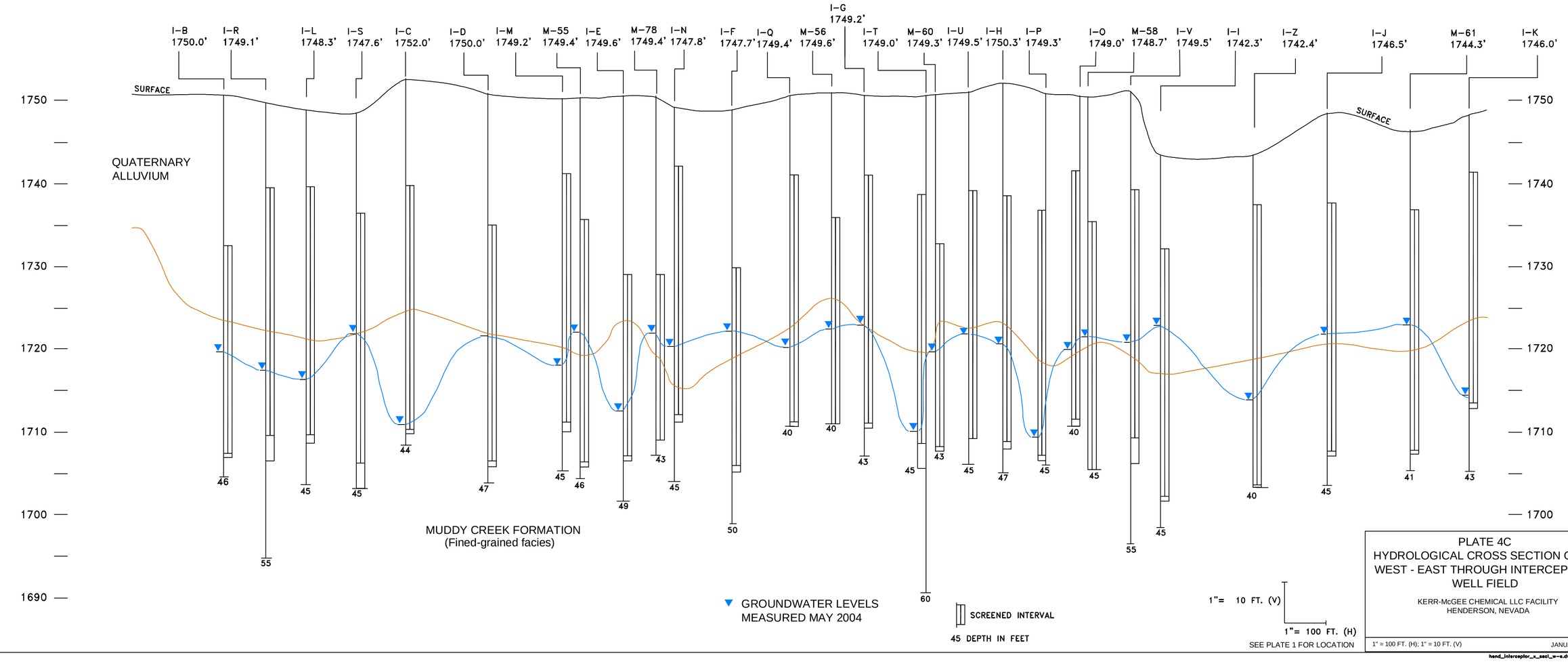


PLATE 4C
HYDROLOGICAL CROSS SECTION C - C'
WEST - EAST THROUGH INTERCEPTOR WELL FIELD

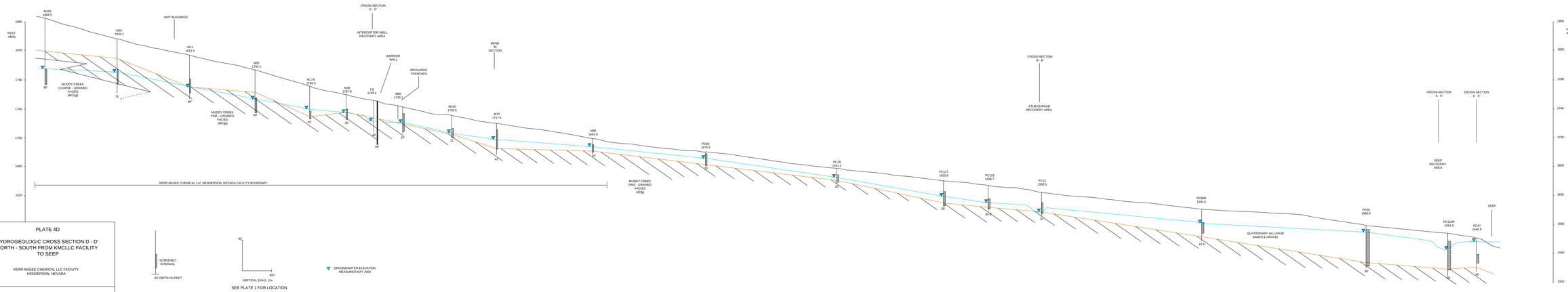
KERR-McGEE CHEMICAL LLC FACILITY
HENDERSON, NEVADA

1" = 100 FT. (H); 1" = 10 FT. (V) JANUARY 2005

hend_interceptor_x_sect_w-e.dwg

D
SOUTH

D'
NORTH



SCREENED INTERVAL

60' DEPTH IN FEET

40'

400'

VERTICAL EXAG: 10x

GROUNDWATER ELEVATION MEASURED MAY 2004

SEE PLATE 1 FOR LOCATION

PLATE 4D

HYDROGEOLOGIC CROSS SECTION D - D'
NORTH - SOUTH FROM KMCLLC FACILITY
TO SEEP

KERR-McGEE CHEMICAL LLC FACILITY
HENDERSON, NEVADA

1" = 400' (H); 1" = 40' (V)

JANUARY 2005

PLATE: 5
POTENTIOMETRIC SURFACE
MAY 2004

KERR-MCGEE CHEMICAL LLC FACILITY
HENDERSON, NEVADA

M-103	WELL IDENTIFICATION
•	MONITOR WELL
▲	RECOVERY WELL
1795	ELEVATION OF WATER (FT AMSL)
—1790—	ISOCONCENTRATION LINE OF POTENTIOMETRIC SURFACE (DASHED WHERE SURFACE IN SHALLOW FINE GRAINED FACIES OF MUDDY CREEK FM)
★	SEEP PUMPING STATION
→	DIRECTION OF GROUNDWATER FLOW
—	BARRIER WALL

LAND OWNERSHIP

- BMI
- CHEMSTAR
- KERR-McGEE
- PIONEER
- TIMET

A— —A' LINE OF SECTION

1 inch = 1,000 feet
1: 12000

0 1,000 2,000 3,000 Feet

N

FEBRUARY 2005

NEVADA EAST (NAD 83)

plate_5_potentiometric_surface_may04.mxd

BMI COMMON AREA DISPOSAL
(UPPER & LOWER BMI PONDS)

(NE CORNER OF PROPERTY)

OPERATIONS BY:

DELBERT MADSEN & ESTATE OF
DELBERT MADSEN. (2 ACRES)
LOU #67

SOUTHERN NEVADA AUTO PARTS (SNAP)
AREA (10 ACRES)
LOU #68

DILLON POTTER SITE (2 ACRES)
LOU #69

ON-SITE HAZARDOUS WASTE
LANDFILL (CLOSED)
LOU #10

UNNAMED DRAINAGE
DITCH SEGMENT
(BML LANDFILL)
LOU #6

TRADE EFFLUENT
SETTLING PONDS
LOU #1

POND WC-1
LOU #22
WC-WEST
WC-1

POND WC-2
LOU #23
WC-EAST
WC-2

SB1-1
SB1-2
SB1-3
SB1-4
SB1-5
SB1-6
SB1-7

OPEN AREA DUE SOUTH
OF TRADE EFFLUENT
DISPOSAL PONDS
LOU #2

GROUNDWATER REMEDIATION UNIT (AREA)
LOU #32

GROUNDWATER
BARRIER WALL

AREA AFFECTED BY
JULY 1990 FIRE
LOU #55

BLDG E-1
BLDG E-2
BLDG E-3
BLDG E-4
BLDG E-5
BLDG E-6

LOADING DOCK
RAIL ROAD TRACKS
TREATMENT UNIT

AP PLANT AREA NEW
BLDG D-1 WASHDOWN,
AP TRANSFER LINES TO
SODIUM CHLORATE PROCESS
LOU #58

NEW D-1 BLDG
OLD D-1 BLDG

DRUM RECYCLING AREA
LOU #31

AP AREA PAD
LOU #30

CONT. TRASH PAD

AP PLANT
AREA OLD BLDG
D-1 WASHDOWN
LOU #56

AP-5 POND
LOU #19

NEW AP-6 POND

M-25

BETA DITCH

BENCHMARK - BM2
LATITUDE - 36°02'50.35"N
LONGITUDE - 115°00'01.62"W
ALTITUDE - 1,765.220 FT

C-1 POND
LOU #20

AP PLANT SI's AND
TRANSFER LINES
TO/FROM AP SI's
LOU #57

M-89

AP-1 POND
LOU #16&17

AP-2 POND
LOU #16&17

AP-4 POND
LOU #18

AP-3 POND
LOU #16&17

M-17

BETA DITCH
& SMALL DIVERSION DITCH
LOU #5

AP PLANT AREA
TANK FARM
LOU #53
MCC

AP PLANT AREA SCREENING
BUILDING, DRYER
BUILDING & ASSOC. SUMP
LOU #52

DRYER BLDG
D-2 BLDG
C-BLDG
OPER.SHACK
RAIL ROAD TRACK

LOU #21
MN-1 POND

AP PLANT CHANGE
HOUSE/LAB
SEPTIC TANK
LOU #54

SB6-1
SB6-2

LAB STORAGE
LAB, AP OFFICES & CHANGE HOUSE

S8-1S

AP MAINT. SHOP

SATELLITE
ACCUMULATION POINT/
AP MAINTENANCE SHOP
LOU #39

STEAM PLANT

FORMER OLD MAIN COOLING TOWER
& RECIRCULATION LINES
LOU #46

LEACH BEDS, AND
MANGANESE TAILINGS AREA
LOU #24

NEW P-2 POND
LOU #9

P-2

S-1 CLOSED
POND S-1
LOU #13

P-1 CLOSED
POND P-1
LOU #14

SB2-1
SB2-2
SB2-3
SB2-4
SB2-5
SB2-6
SB2-7
SB2-8
SB2-9
SB2-10
SB2-11
SB2-12
SB2-13

P-3 CLOSED
OLD P-3 POND
LOU #8

M-21

OLD P-2 POND
LOU #7

SB5-1
SB5-2
SB5-3

BERM

DIESEL TANK

LEACH PLANT AREA
LEACH TANKS
LOU #50

LEACH PLANT AREA
SULFURIC ACID STORAGE
LOU #49

LEACH PLANT
ANALYTE TANKS
LOU #48

ACID DRAIN
SYSTEM
LOU #60

AVENUE F

FORMER SATELLITE
ACCUMULATION POINT,
AP-LABORATORY
LOU #38

TRUCK EMPTYING/
DUMPING SITE
LOU #35

SB4-1
SB4-2
SB4-3
SB4-4
SB4-5
SB4-6
SB4-7
SB4-8

OPERATIONS BY KOCH
MATERIALS CO.
LOU # 64

FORMER MANGANESE
TAILINGS AREA, WESTERN
LOU #34

DIESEL STORAGE
TANK
LOU #45

LEACH PLANT AREA
TRANSFER LINES
(TO/FROM UNIT 6)
LOU #51

LEACH PLANT
AREA MANGANESE
ORE PILES
LOU #47

FORMER MANGANESE TAILINGS
AREA, EASTERN
LOU #34

11TH STREET

TIMET

CHEMSTAR

BENCHMARK - BM1
LATITUDE - 36°02'34.83"N
LONGITUDE - 114°59'58.45"W
ALTITUDE - 1,812.660 FT

AVENUE G

STORM SEWER
SYSTEM
AREA
LOU #59

SB-7

NEVADA PRECAST
CONCRETE PRODUCTS
LOU #65

M-97

J.B. KELLEY, INC
TRUCKING SITE
(CONCRETE VAULTS)
LOU #63

ABOVE-GROUND DIESEL
STORAGE TANK, LEASED BY
FLINTKOTE COMPANY
LOU #66

FORMER AST

HAZARDOUS WASTE
STORAGE AREA
LOU #12

FORMER SATELLITE ACCUMULATION POINT,
UNIT-6, MAINTENANCE SHOP
LOU #37

HARDESTY CHEMICAL
COMPANY SITE
LOU #4

TRASH STORAGE AREA
LOU #26

PLATINUM DRYING UNIT
LOU #15

EBONY CONSTRUCTION CO.
LOU #65

SODIUM CHLORATE FILTER
CAKE HOLDING AREA
LOU #11

OLD SODIUM CHLORATE
PLANT DECOMMISSIONING
LOU #61

UNIT 6 BASEMENT
LOU #44

FORMER
UST SITE

HAZARDOUS WASTE
STORAGE AREA
LOU #28

UNIT 4 & 5 BASEMENTS
LOU #43

UNIT-4
UNIT-5
UNIT-6
UNIT-7 (TIMET)
UNIT-8 (TIMET)

PCB STORAGE AREA
LOU #27

UNIT 1
TENANT STAINS
LOU #41

S9-1S(A)
S9-1S(B)

LOCATION OF A PORTION
OF FORMER HARDESTY
FACILITY

UNIT-1
UNIT-2
UNIT-3

9TH STREET
10TH STREET
12TH STREET

AVENUE H

OPERATIONS BY:
BUCKLES CONSTRUCTION CO.
LOU #65

4TH STREET
5TH STREET
6TH STREET
7TH STREET
8TH STREET

SODIUM PERCHLORATE PLATINUM
BY-PRODUCT FILTER, UNIT 5
LOU #33

PCB TRANSFORMER SPILL
LOU #40

R R TRACK #10

SAFETY & MEDICAL CLINIC

SOLID WASTE DUMPSTER
LOU #29

ADMINISTRATION

GASOLINE TANK

PROCESS HARDWARE
STORAGE AREA (BETWEEN
UNITS 1 & 2)
LOU #25

FORMER SATELLITE ACCUMULATION
POINT, UNIT-3, MAINTENENCE SHOP
LOU #36

UNIT 2 SALT REDLER
LOU #42

FACILITY BACKGROUND
MONITORING WELL

CONTROL HOUSE

S-3

GREEN VENTURES
INTERNATIONAL
LOU #65

STATE INDUSTRIES, INC. SITE
(KMCC TENANT)
LOU #62

KMCC PURCHASING

PLATE: 6
KERR-McGEE SOURCE AREAS INDENTIFIED IN THE LOU

KERR-McGEE CHEMICAL LLC FACILITY
HENDERSON, NEVADA

SB6-1 •	SOIL SAMPLING LOCATION WITH DESIGNATION
M-10 ⊕	MONITORING WELL LOCATION WITH DESIGNATION
	KMCC PROPERTY BOUNDARY
	RAILROAD TRACKS
	BETA DITCH
LOU#19	ITEMS IDENTIFIED BY NEVADA DIVISION OF ENVIRONMENTAL PROTECTION IN THE 1994 LETTER OF UNDERSTANDING (LOU)
[NOT SHOWN]	LOU #3 - AIR POLLUTION EMISSIONS ASSOCIATED w/ INDUSTRIAL PROCESSES
SI	SURFACE IMPOUNDMENT

0 200' 400' 600'

1 INCH = 200 FEET

N

JANUARY 2005

Plate 6.dwg

820000 825000 830000 835000

26735000 26730000 26725000 26720000 26715000

R 62 E R 63 E

RUSSELL ROAD SUNSET ROAD INTERSTATE 515 PABCO LAKE MEAD DRIVE

PITTMAN LATERAL Las Vegas Valley Lateral Pittman Lateral

Las Vegas Wash

BMI Timet Pioneer Kerr-McGee

27 26 25 30 29 34 35 36 31 32 3 2 1 6 5 10 11 12 7 8 15 14 13

A A' B B' C C' D D' E E'

1565 1595 1625 1645 1675 1705 1725 1745 1775 1805 1835 1865

PC68 ND; PC59 ND; PC60 ND; PC56 ND; PC58 0.07; PC96 ND; PC95 ND; PC121 ND; PC117 ND; PC116R ND; PC91 ND; PC103 ND; PC98R ND; MW-K5 ND; PC53 0.02; ARP-1 ND; ARP-2 ND; ARP-3 ND; MW-K4 ND; ARP-4 ND; ARP-5 0.07; ARP-6 ND; ARP-7 ND; L637 ND; L635 ND; PC73 0.3; PC72 0.5; PC71 0.9; M44 1.4; M94 1.3; M95 4.5; M96 5.2; PC37 0.3; PC54 4.9; M23 1.5; M48 3.7; H28A ND; M6A ND; M7B ND; M99 0.6; M100 1.1; M101 0.8; M102 7.2; M5A ND; M93 0.07; M92 ND; M97 0.08; M13 1.8; M12A 18; M11 4.4; M77 0.4; M52 14; M10 0.08

0.05 0.1 0.5 1.0 5 10 20 30 40

PLATE: 7
CHROMIUM IN GROUNDWATER
MAY 2004

KERR-McGEE CHEMICAL LLC FACILITY
HENDERSON, NEVADA

M-10 WELL IDENTIFICATION
• MONITOR WELL
0.08 CHROMIUM CONCENTRATION (mg/L)
▲ RECOVERY WELL
—1.0— ISOCONCENTRATION LINE OF CHROMIUM (mg/L) (DASHED WHERE INFERRED)
NOTE: ND = < 0.02 mg/L
SEEP PUMPING STATION
BARRIER WALL

LAND OWNERSHIP
BMI
CHEMSTAR
KERR-McGEE
PIONEER
TIMET
A— —A' LINE OF SECTION

1 inch = 1,000 feet
1: 12000
0 1,000 2,000 3,000 Feet

N

FEBRUARY 2005

NEVADA EAST (NAD 83)

Plate_7_chromium_gw_quant_alluv_may04.mxd

820000 825000 830000 835000

26734000 26729000 26724000 26719000 26714000

R 62 E R 63 E

RUSSELL ROAD BOULDER HIGHWAY PITTMAN LATERAL SUNSET ROAD INTERSTATE 515 PABCO LAKE MEAD DRIVE

Las Vegas Wash Las Vegas Valley Lateral Pittman Lateral

BMI Timet Pioneer Kerr-McGee

PLATE: 8
PERCHLORATE IN GROUNDWATER
MAY 2004

KERR-McGEE CHEMICAL LLC FACILITY
HENDERSON, NEVADA

M-10 WELL IDENTIFICATION
• MONITOR WELL
21 PERCHLORATE CONCENTRATION (mg/L)
▲ RECOVERY WELL
—100— ISOCONCENTRATION LINE OF PERCHLORATE (mg/L) (DASHED WHERE INFERRED) CONTOUR INTERVAL AS SHOWN
SEEP PUMPING STATION
BARRIER WALL

LAND OWNERSHIP
BMI
CHEMSTAR
KERR-McGEE
PIONEER
TIMET
A – – A' LINE OF SECTION

1 inch = 1,000 feet
1: 12000
0 1,000 2,000 3,000 Feet

N

FEBRUARY 2005

NEVADA EAST (NAD 83)

plate_8_perch_in_gw_alluv_may04.mxd

PLATE: 9
SPECIFIC CONDUCTANCE IN GROUNDWATER MAY 2004

KERR-McGEE CHEMICAL LLC FACILITY
HENDERSON, NEVADA

M-103 WELL IDENTIFICATION
• MONITOR WELL
2.9 CONCENTRATION (ms/cm)
▲ RECOVERY WELL
—15— ISOCONDUCTIVITY LINES (mS/cm) (DASHED WHERE INFERRED) CONTOUR INTERVAL = 5 mS/cm
★ SEEP PUMPING STATION
BARRIER WALL

LAND OWNERSHIP
BMI
CHEMSTAR
KERR-McGEE
PIONEER
TIMET

A— —A' LINE OF SECTION

1 inch = 1,000 feet
1: 12000
0 1,000 2,000 3,000 Feet

N

FEBRUARY 2005

NEVADA EAST (NAD 83)

plate_9_gw_conduct_may04.mxd

PLATE: 10
CHROMIUM IN GROUNDWATER WITH POTENTIAL SOURCE AREAS MAY 2004

KERR–McGEE CHEMICAL LLC FACILITY
HENDERSON, NEVADA

T.22S.,R.62E. | R.62E. | R.63E.

SEC 2 | SEC 1 | SEC 11 | SEC 12

Longtree Avenue | Engel Avenue | E. Rolly Street | Bastanchury Avenue | Van Dornum Avenue | Close Avenue | Zuber Avenue | Sellers Place | Wells Street | Engel Way | E. King Street | Palm Street | Chestnut Street

BOULDER HIGHWAY | PABCO ROAD

BMI | PIONEER | TIMET

BETA DITCH

AVENUE F | AVENUE G | AVENUE H

CHEMSTAR

GROUNDWATER REMEDIATION UNIT (AREA) LOU #32

GROUNDWATER RECHARGE TRENCHES

GROUNDWATER BARRIER WALL

FORMER OLD MAIN COOLING TOWER & RECIRCULATION LINES LOU #46

NEW P-2 POND LOU #9

OLD P-2 POND LOU #7

OLD P-3 POND LOU #8

POND S-1 LOU #13

POND P-1 LOU #14

SODIUM CHLORATE FILTER CAKE HOLDING AREA LOU #11

HAZARDOUS WASTE STORAGE AREA LOU #28

PLATINUM DRYING UNIT LOU #15

HAZARDOUS WASTE STORAGE AREA LOU #12

UNIT 4 & 5 BASEMENTS LOU #43

OLD SODIUM CHLORATE PLANT DECOMMISSIONING LOU #61

AP-1 POND | AP-2 POND | AP-3 POND | AP-4 POND | AP-5 POND | C-1 POND | MN-1 POND | D-1 | C-1

UNIT-1 | UNIT-2 | UNIT-3 | UNIT-4 | UNIT-5 | UNIT-6 | UNIT-7 (TIMET) | UNIT-8 (TIMET)

PC73 0.3 | PC72 0.5 | PC71 0.9 | M44 1.9 | M94 1.3 | M95 4.5 | M96 5.2 | PC37 (0.3) | PC54 4.9 | M23 1.5 | M48 3.7 | H28A ND | M6A ND | M7B ND | M98 DRY | M99 0.6 | M100 1.1 | M101 0.8 | M102 7.2 | M83 1.5 | M84 0.4 | M85 0.04 | M86 0.3 | M87 4.9 | M88 0.7 | M79 0.2 | M69 0.07 | M70 8.7 | IN 16 | M71 9 | M72 10 | M73 1.7 | M74 76 | IK 1.6 | IB 0.7 | IR 1.0 | IL 1.7 | IS 3.1 | IC 5.8 | ID 11 | M55 12 | M15 14 | IF 38 | IQ 31 | M60 27 | IU 26 | IH 33 | IP 32 | M58 31 | II 29 | IZ 9.7 | IJ 3.2 | M68 1.2 | IAR 1.4 | M25 12 | M38 40 | M36 44 | M22A 36 | M39 4.7 | M19 0.5 | M89 36 | M17A 42 | M75 4.8 | M76 4.8 | M34 20 | M35 10 | M21 0.8 | M50 55 | M31A 18 | M32 DRY | M33 0.1 | M52 14 | M77 0.4 | MW6R 0.08 | M97 0.08 | M93 0.07 | M92 ND | M13 1.0 | M12A 18 | M11 4.4 | M10 0.08

0.05 | 0.1 | 1 | 5 | 10 | 20 | 30 | 40

0 300' 600' 900'

1 INCH = 300 FEET

N

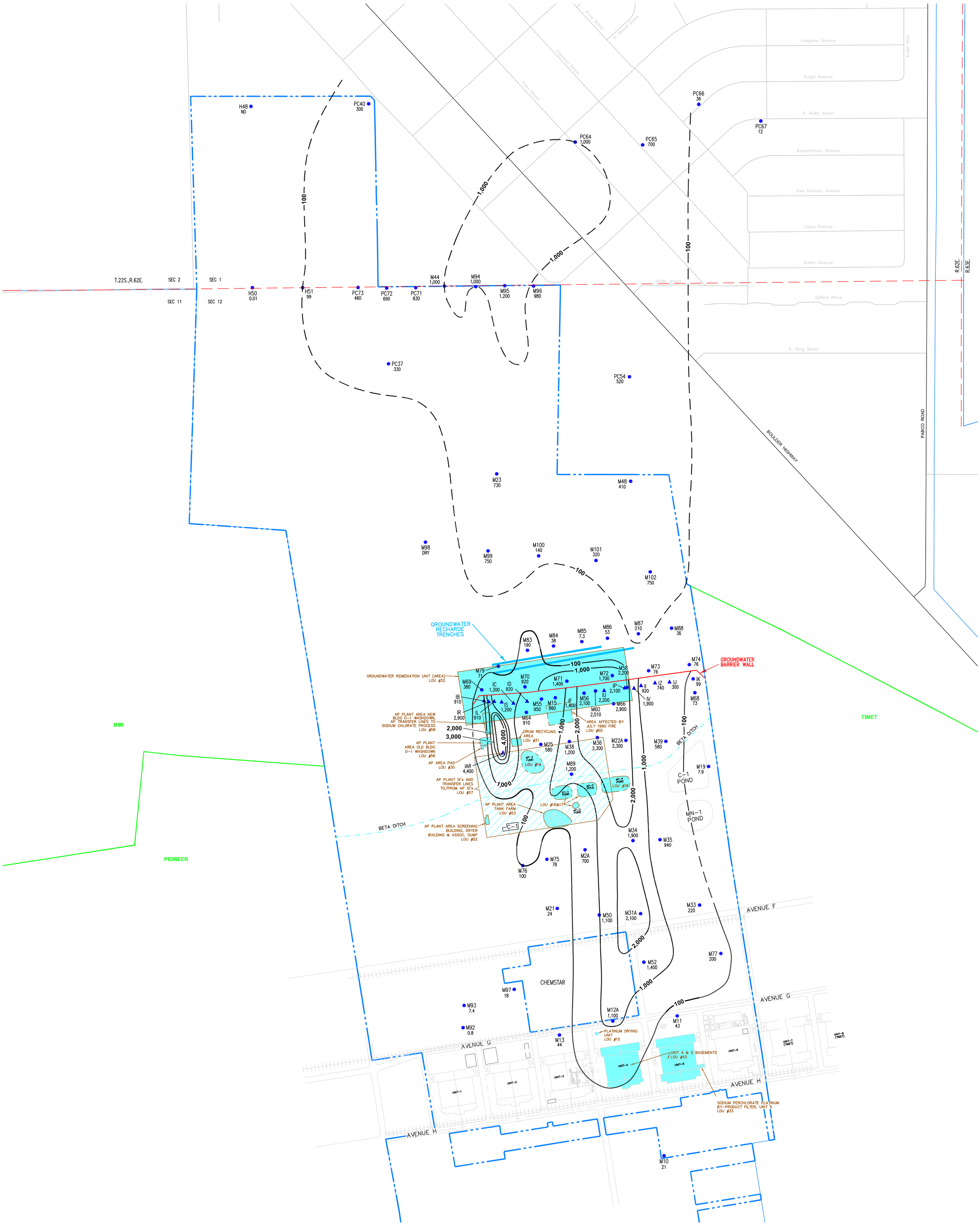
JANUARY 2005

- GROUNDWATER MONITOR WELL
- M50 / 55 — WELL IDENTIFICATION / CHROMIUM CONCENTRATION (in mg/l)
- RECOVERY WELL
- ND — NOT DETECTED AT A CONCENTRATION ABOVE 0.05 mg/l
- 0.1 — ISO-CONCENTRATION CONTOUR, DASHED WHERE INFERRED CONTOUR INTERVAL AS SHOWN
- KERR–McGEE PROPERTY BOUNDARY
- NEIGHBORING PROPERTY LINES
- BETA DITCH
- RAILROAD TRACKS
- POTENTIAL CHROMIUM SOURCE AREA (HATCHERED WHERE AREA IS LESS DEFINED)

2ChromConcent.dwg

PLATE: 11
PERCHLORATE IN GROUNDWATER WITH POTENTIAL SOURCE AREAS
MAY 2004

KERR–McGEE CHEMICAL LLC FACILITY
HENDERSON, NEVADA



M55
950 — GROUNDWATER MONITOR WELL; WELL IDENTIFICATION; PERCHLORATE CONCENTRATION (in mg/l)

▲ RECOVERY WELL

ND — NOT DETECTED AT A CONCENTRATION ABOVE 0.004 mg/l

100 — ISO–CONCENTRATION CONTOUR, DASHED WHERE INFERRED; CONTOUR INTERVAL AS SHOWN

KERR–McGEE PROPERTY BOUNDARY

NEIGHBORING PROPERTY LINES

BETA DITCH

RAILROAD TRACKS

POTENTIAL PERCHLORATE SOURCE AREA (HATCHERED WHERE AREA IS LESS DEFINED)

0 300' 600' 900'

1 INCH = 300 FEET

N

JANUARY 2005

2Perchlorate.dwg

PLATE: 12
SPECIFIC CONDUCTIVITY IN GROUNDWATER AND POTENTIAL SOURCE AREAS
MAY 2004

KERR–McGEE CHEMICAL LLC FACILITY
HENDERSON, NEVADA

T.22S.,R.62E. | R.62E. | R.63E.

SEC 2 | SEC 1 | SEC 11 | SEC 12

Price Street | E. Barrel Street | Chestnut Street | Palm Street | Engel Way | Longtree Avenue | Engel Avenue | E. Rolly Street | Bastanchury Avenue | Van Dornum Avenue | Close Avenue | Zuber Avenue | Wells Street | Sellers Place | E. King Street | BOULDER HIGHWAY | PABCO ROAD

PC66 4,750 | PC67 18,290 | PC64 11,760 | PC65 9,090 | PC73 8,720 | PC72 10,210 | PC71 11,070 | M44 11,130 | M94 10,520 | M95 12,500 | M96 11,700 | PC37 9,020 | PC21 12,910 | M23 6,730 | M48 5,760 | H28A 9,670 | M6A 9,960 | M7B 9,980 | M98 DRY | M99 6,910 | M100 3,150 | M101 6,350 | M102 7,780 | M87 5,630 | M88 8,730 | M86 2,160 | M85 1,130 | M84 2,210 | M83 3,330

10,000 | 1,000 | 5,000 | 15,000 | 20,000

POND WC–1 LOU #22 | POND WC–2 LOU #23

GROUNDWATER RECHARGE TRENCHES

GROUNDWATER REMEDIATION UNIT (AREA) LOU #32

GROUNDWATER BARRIER WALL

M79 2,050 | M69 5,370 | IB 6,430 | IR 9,100 | IL 9,840 | M70 11,120 | 10,130 | M71 11,100 | M72 12,720 | M58 14,700 | M73 3,130 | M59 9,840 | IJ 7,300 | IK 7,140 | 8,420 | M68 7,550 | II 14,640

M25 10,280 | IAR 11,300 | M36 20,500 | M38 17,550 | M22A 17,740 | M39 8,090 | M89 17,000 | M19 7,040

D–1 | C–1 | BETA DITCH | AP–5 POND | AP–1 POND | AP–2 POND | AP–4 POND

LOU #20 C–1 POND | LOU #21 MN–1 POND

M17A 17,260 | M34 12,500 | M35 10,000 | M2A 13,700 | M76 6,190 | M75 6,080

POND S–1 LOU #13 | POND P–1 LOU #14 | NEW P–2 POND LOU #9 | OLD P–3 POND LOU #8 | OLD P–2 POND LOU #7

M21 2,970 | M50 20,300 | M31A 12,000 | M32 DRY | M33 4,850 | M77 4,380 | MW6R 5,600

AVENUE F | AVENUE G | AVENUE H

CHEMSTAR

M93 3,410 | M97 3,640 | M92 2,980 | M13 5,160 | M12A 11,400 | M11 5,100 | M10 4,970

HAZARDOUS WASTE STORAGE AREA LOU #12 | PLATINUM DRYING UNIT LOU #15 | SODIUM CHLORATE FILTER CAKE HOLDING AREA LOU #11 | UNIT 2 SALT REDLER LOU #42 | OLD SODIUM CHLORATE PLANT DECOMMISSIONING LOU #61 | UNIT 4 & 5 BASEMENTS LOU #43

UNIT–1 | UNIT–2 | UNIT–3 | UNIT–4 | UNIT–5 | UNIT–6 | UNIT–7 (TIMET) | UNIT–8 (TIMET)

BMI | PIONEER | TIMET

LEGEND

- GROUNDWATER MONITOR WELL
- M77 4,380 — WELL IDENTIFICATION / SPECIFIC CONDUCTIVITY µmhos/cm
- RECOVERY WELL
- 5,000 — ISO–CONCENTRATION CONTOUR, DASHED WHERE INFERRED; CONTOUR INTERVAL AS SHOWN
- KERR–McGEE PROPERTY BOUNDARY
- NEIGHBORING PROPERTY LINES
- BETA DITCH
- RAILROAD TRACKS
- POTENTIAL CHLORATE SOURCE AREA
- POTENTIAL TOTAL DISSOLVED SOLIDS (TDS) SOURCE AREA

N

0 | 300' | 600' | 900'

1 INCH = 300 FEET

JANUARY 2005

2Conductivity Data.dwg

T.22S.,R.62E.

SEC 2 | SEC 1

SEC 11 | SEC 12

R.62E.

R.63E.

Price Street

E. Barrel Street

Chestnut Street

Palm Street

Longtree Avenue

Engel Avenue

Engel Way

E. Rolly Street

Bastanchury Avenue

Van Dornum Avenue

Close Avenue

Zuber Avenue

Wells Street

Sellers Place

E. King Street

BOULDER HIGHWAY

PABCO ROAD

M44 ND

M94 0.45

M100 ND

M84 ND

M18 0.1

M67 ND

M68 ND

GROUNDWATER RECHARGE TRENCHES

GROUNDWATER BARRIER WALL

BMI

PIONEER

TIMET

D-1

IAR 0.24

M25 ND

M36 0.15

M22A 0.18

M39 0.15

BETA DITCH

AP-5 POND

AP-1 POND

AP-2 POND

AP-3 POND

AP-4 POND

C-1 POND

M19 (0.17)

C-1

MN-1 POND LOU #21

M34 (0.23)

M35 ND

LEACH BEDS, AND MANGANESE TAILINGS AREA LOU #24

LEACH PLANT AREA SULFURIC ACID STORAGE LOU #49

LEACH PLANT AREA LEACH TANKS LOU #50

FORMER MANGANESE TAILINGS AREA, WESTERN LOU #34

M32 (13)

M33 2.1

0.5

AVENUE F

LEACH PLANT ANALYTE TANKS LOU #48

LEACH PLANT AREA MANGANESE ORE PILES LOU #47

M77 11

1.0

FORMER MANGANESE TAILINGS AREA, EASTERN LOU #34

LEACH PLANT AREA TRANSFER LINES (TO/FROM UNIT 6) LOU #51

M52 ND

CHEMSTAR

100

AVENUE G

M29 (440)

UNIT-1

UNIT-2

UNIT-3

UNIT-4

UNIT-5

UNIT-7 (TIMET)

UNIT-8 (TIMET)

AVENUE H

UNIT 6 BASEMENT LOU #44

M10 0.2

PLATE: 13
MANGANESE IN GROUNDWATER WITH POTENTIAL SOURCE AREAS MAY 2003

KERR-McGEE CHEMICAL LLC FACILITY
HENDERSON, NEVADA

- GROUNDWATER MONITOR WELL
- M39 / 0.15 — WELL IDENTIFICATION / MANGANESE CONCENTRATION (in mg/l) FROM MAY 2003
- RECOVERY WELL
- ND — NOT DETECTED AT A CONCENTRATION ABOVE 0.15 mg/l
- (440) — MANGANESE CONCENTRATION (in mg/l) FROM MAY 2002
- 1.0 — ISO-CONCENTRATION CONTOUR, DASHED WHERE INFERRED, CONTOUR INTERVAL AS SHOWN
- KERR-McGEE PROPERTY BOUNDARY
- NEIGHBORING PROPERTY LINES
- BETA DITCH
- RAILROAD TRACKS
- POTENTIAL MANGANESE SOURCE AREA (HATCHERED WHERE AREA IS LESS DEFINED)

0 300' 600' 900'

1 INCH = 300 FEET

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2Manganese.dwg

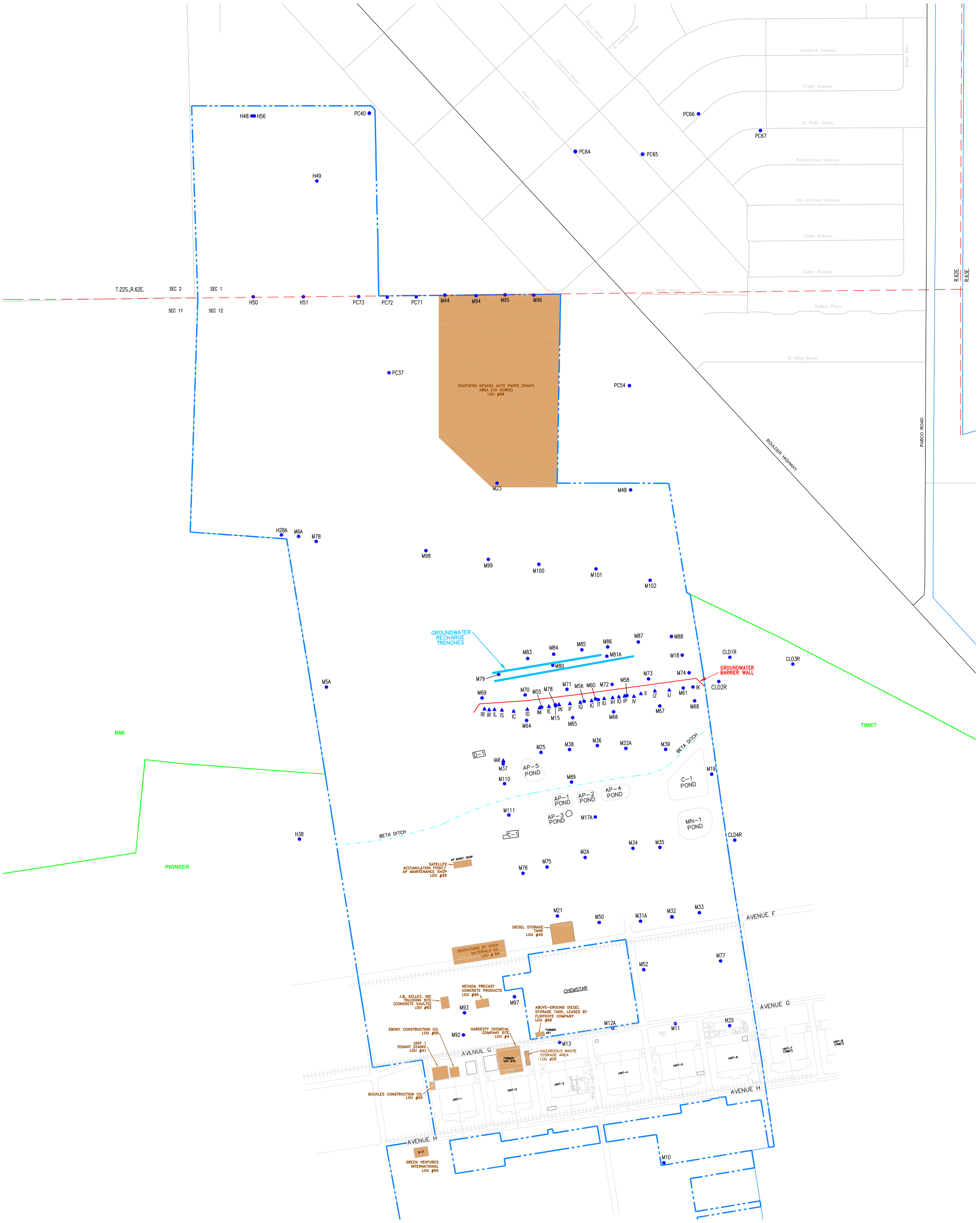

PLATE: 14
PETROLEUM HYDROCARBON POTENTIAL SOURCE AREAS

KERR-McGEE CHEMICAL LLC FACILITY
HENDERSON, NEVADA

- M39 — GROUNDWATER MONITOR WELL / WELL IDENTIFICATION
- RECOVERY WELL
- KERR-McGEE PROPERTY BOUNDARY
- NEIGHBORING PROPERTY LINES
- BETA DITCH
- RAILROAD TRACKS
- POTENTIAL SOURCE AREA

0 300' 600' 900'

1 INCH = 300 FEET

N

JANUARY 2005

Petroleum Hydrocarbon.dwg

PLATE: 15
BORON POTENTIAL SOURCE AREA

KERR–McGEE CHEMICAL LLC FACILITY
HENDERSON, NEVADA

- GROUNDWATER MONITOR WELL
- M39 — WELL IDENTIFICATION
- RECOVERY WELL
- KERR–McGEE PROPERTY BOUNDARY
- NEIGHBORING PROPERTY LINES
- BETA DITCH
- RAILROAD TRACKS
- POTENTIAL BORON SOURCE AREA

0 300' 600' 900'

1 INCH = 300 FEET

N

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Boron Potential Source Area.dwg

PLATE: 16
MISCELLANEOUS POTENTIAL SOURCE AREAS

KERR–McGEE CHEMICAL LLC FACILITY
HENDERSON, NEVADA

- GROUNDWATER MONITOR WELL (M39 – WELL IDENTIFICATION)
- RECOVERY WELL
- KERR–McGEE PROPERTY BOUNDARY
- NEIGHBORING PROPERTY LINES
- BETA DITCH
- RAILROAD TRACKS
- [NOT SHOWN] LOU #3 – AIR POLLUTION EMISSIONS ASSOCIATED w/ INDUSTRIAL PROCESSES
- POTENTIAL MISCELLANEOUS SOURCE AREA (HATCHERED WHERE AREA IS LESS DEFINED)

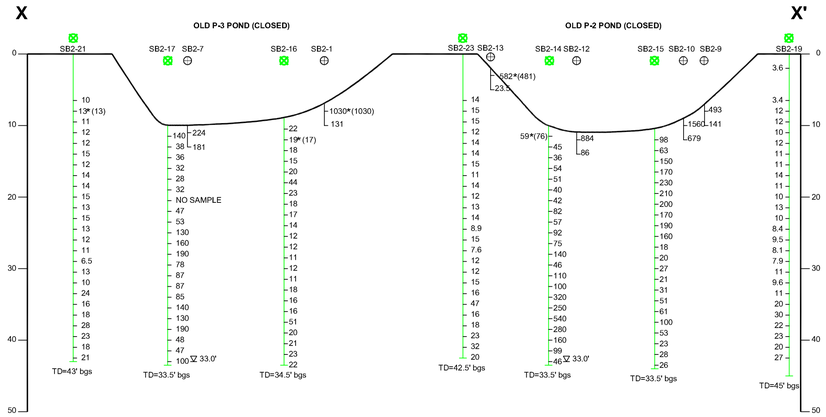
0 300' 600' 900'

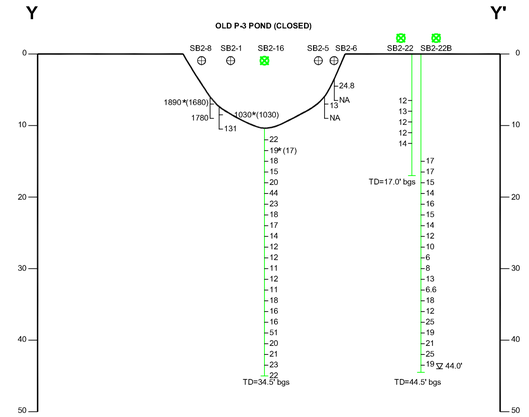
1 INCH = 300 FEET

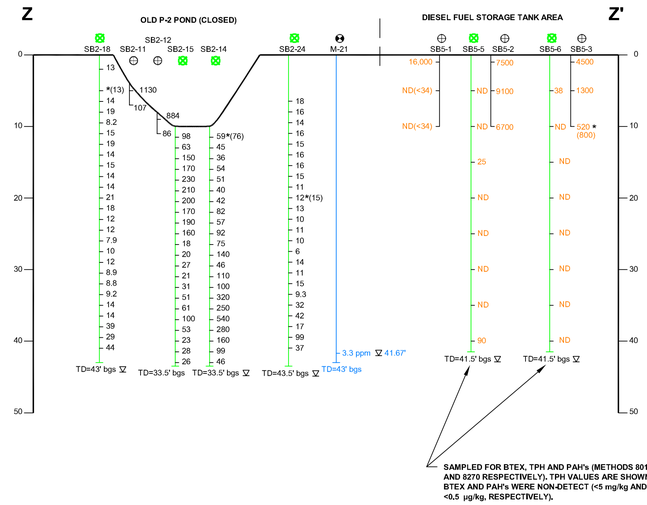
N

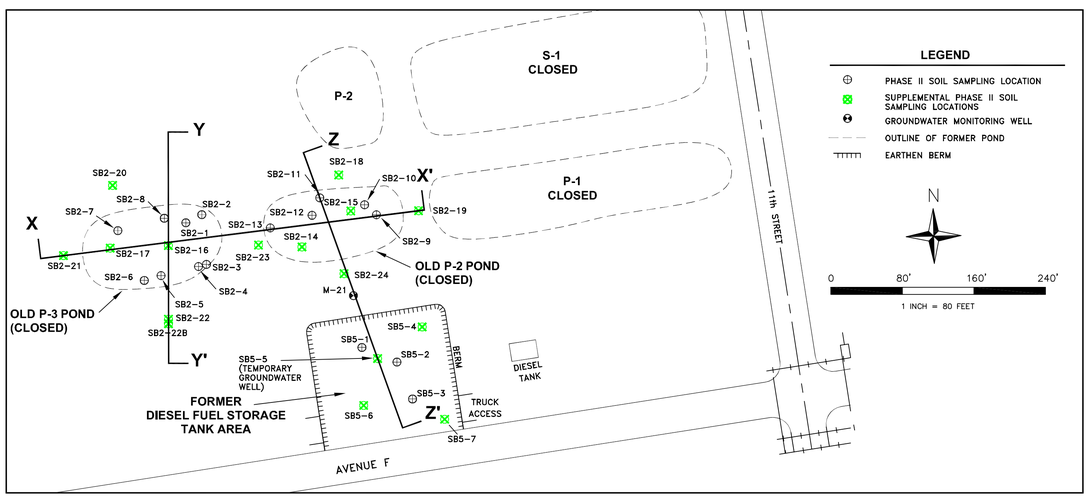
JANUARY 2005

Miscellaneous Potential Source Areas.dwg









CROSS-SECTION LOCATION MAP AREA

ts\04020 – Kerr-McGee\023 – ECA Henderson, NV\figures\Figure 1 Site Location m

INDEX MAP

0 1000' 2000' 4000'

SCALE IN FEET

PLATE: 17

CROSS SECTIONS OF OLD P-2, P-3 PONDS AND FORMER DIESEL FUEL STORAGE TANK AREA

KERR-McGEE CHEMICAL LLC FACILITY
HENDERSON, NEVADA

SB2-21	DEEP BORING, HOLLOW STEM AUGER (DRILLED 1999)
SB2-7	SHALLOW, HAND AUGERED (DRILLED 1997)
M-21	GROUNDWATER MONITORING WELL (DRILLED 1983)
10	TOTAL CHROMIUM CONCENTRATION (in mg/kg) METHOD 6010
1600	TOTAL PETROLEUM HYDROCARBON (TPH) CONCENTRATION (in mg/kg). METHOD 8015 FOR DEEP BORINGS AND 8015 M-D FOR SHALLOW HAND AUGERING.
3.3 ppm	GROUNDWATER SAMPLE TESTED FOR TOTAL CHROMIUM
NA	NOT ANALYZED
ND	NON DETECT FOR ALL TPH RANGES (<10 mg/kg)
*	DUPLICATE SAMPLE TAKEN, DUPLICATE RESULT SHOWN IN PARENTHESIS
▽ 33.0'	GROUNDWATER LEVEL FIRST MEASURED
bgs	BELOW GROUND SURFACE

FEET: 0, 10 — FEET: 0, 40

JANUARY 2005

x-sections.dwg