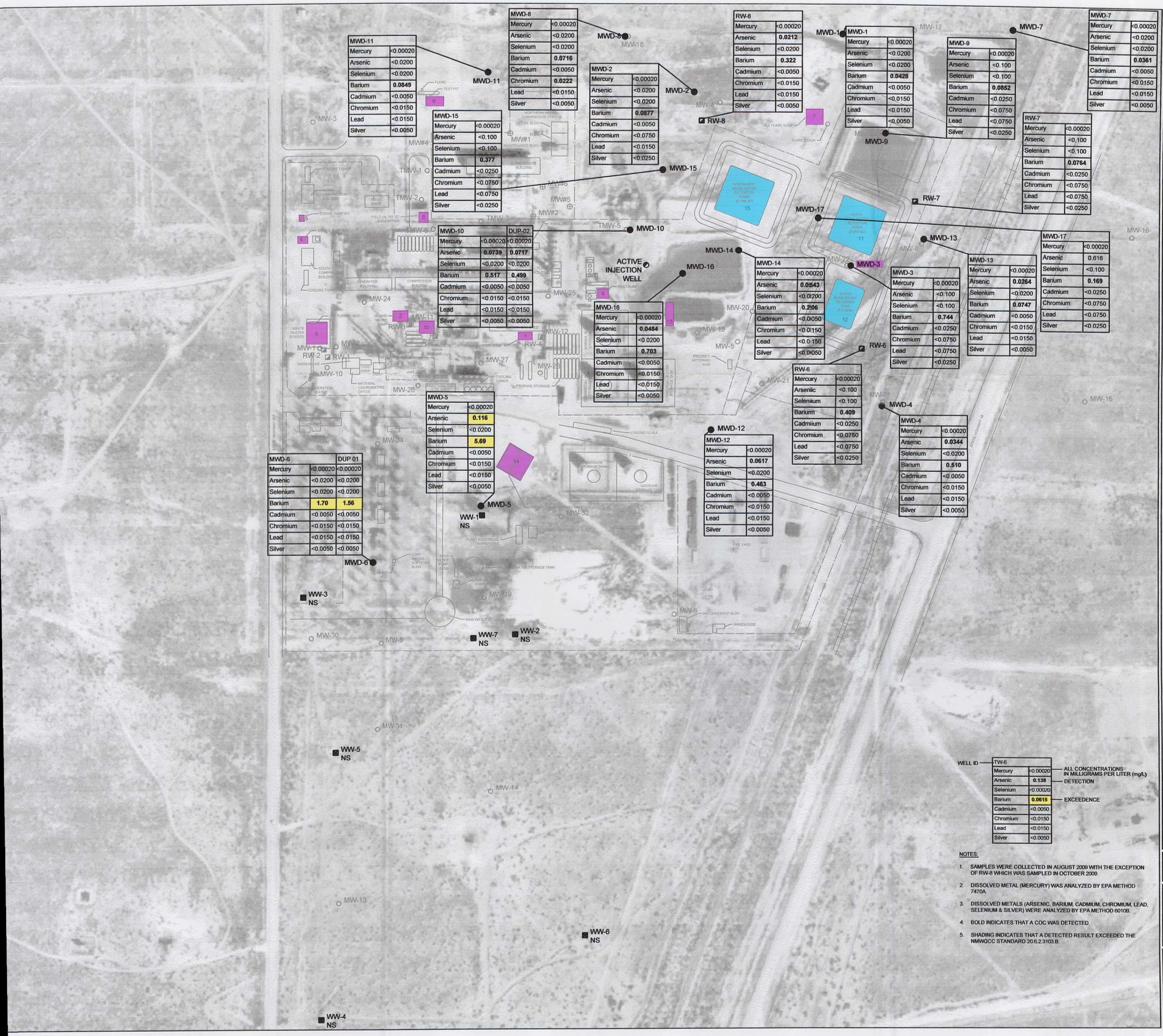
MWD-11
Mercury <0.00020
Arsenic <0.0200
Selenium <0.0200
Barium 0.0849
Cadmium <0.0050
Chromium <0.0150
Lead <0.0150
Silver <0.0050
MWD-8
Mercury <0.00020
Arsenic <0.0200
Selenium <0.0200
Barium 0.0716
Cadmium <0.0050
Chromium 0.0222
Lead <0.0150
Silver <0.0050
MWD-2
Mercury <0.00020
Arsenic <0.0200
Selenium <0.0200
Barium 0.0877
Cadmium <0.0050
Chromium <0.0750
Lead <0.0150
Silver <0.0250
RW-8
Mercury <0.00020
Arsenic 0.0212
Selenium <0.0200
Barium 0.322
Cadmium <0.0050
Chromium <0.0150
Lead <0.0150
Silver <0.0050
MWD-1
Mercury <0.00020
Arsenic <0.0200
Selenium <0.0200
Barium 0.0428
Cadmium <0.0050
Chromium <0.0150
Lead <0.0150
Silver <0.0050
MWD-9
Mercury <0.00020
Arsenic <0.100
Selenium <0.100
Barium 0.0852
Cadmium <0.0250
Chromium <0.0750
Lead <0.0750
Silver <0.0250
MWD-7
Mercury <0.00020
Arsenic <0.0200
Selenium <0.0200
Barium 0.0361
Cadmium <0.0050
Chromium <0.0150
Lead <0.0150
Silver <0.0050
MWD-15
Mercury <0.00020
Arsenic <0.100
Selenium <0.100
Barium 0.377
Cadmium <0.0250
Chromium <0.0750
Lead <0.0750
Silver <0.0250
RW-7
Mercury <0.00020
Arsenic <0,100
Selenium <0.100
Barium 0.0764
Cadmium <0.0250
Chromium <0.0750
Lead <0.0750
Silver <0.0250
MWD-10
DUP-02
Mercury <0.00020 <0.00020
Arsenic 0.0739 0.0717
Selenium <0.0200 <0.0200
Barium 0.517 0.499
Cadmium <0.0050 <0.0050
Chromium <0.0150 <0.0150
Lead <0.0150 <0.0150
Silver <0.0050 <0.0050
MWD-14
Mercury <0.00020
Arsenic 0.0543
Selenium <0.0200
Barium 0.206
Cadmium <0.0050
Chromium <0.0150
Lead <0.0150
Silver <0.0050
MWD-16
Mercury <0.00020
Arsenic 0.0484
Selenium <0.0200
Barium 0.703
Cadmium <0.0050
Chromium <0.0150
Lead <0.0150
Silver <0.0050
MWD-3
Mercury <0.00020
Arsenic <0.100
Selenium <0.100
Barium 0.744
Cadmium <0.0250
Chromium <0.0750
Lead <0.0750
Silver <0.0250
MWD-13
Mercury <0.00020
Arsenic 0.0264
Selenium <0.0200
Barium 0.0747
Cadmium <0.0050
Chromium <0.0150
Lead <0.0150
Silver <0.0050
MWD-17
Mercury <0.00020
Arsenic 0.616
Selenium <0.100
Barium 0.169
Cadmium <0.0250
Chromium <0.0750
Lead <0.0750
Silver <0.0250
MWD-5
Mercury <0.00020
Arsenic 0.116
Selenium <0.0200
Barium 5.69
Cadmium <0.0050
Chromium <0.0150
Lead <0.0150
Silver <0.0050
MWD-6
DUP 01
Mercury <0.00020 <0.00020
Arsenic <0.0200 <0.0200
Selenium <0.0200 <0.0200
Barium 1.70 1.56
Cadmium <0.0050 <0.0050
Chromium <0.0150 <0.0150
Lead <0.0150 <0.0150
Silver <0.0050 <0.0050
MWD-6
Mercury <0.00020
Arseniic <0.100
Selenium <0.100
Barium 0.409
Cadmium <0.0250
Chromium <0,0750
Lead <0.0750
Silver <0.0250
MWD-12
Mercury <0.00020
Arsenic 0.0617
Selenium <0.0200
Barium 0.463
Cadmium <0.0050
Chromium <0.0150
Lead <0.0150
Silver <0.0050
MWD-4
Mercury <0.00020
Arsenic 0.0344
Selenium <0.0200
Barium 0.510
Cadmium <0.0050
Chromium <0.0150
Lead <0.0150
Silver <0.0050
ACTIVE INJECTION WELL
NORTHWEST BRINE WATER RETENTION POND (POND #3)
NORTH RETENTION POND (POND #2)
SOUTH BRINE WATER RETENTION POND (POND #4)
WW-1 NS
WW-2 NS
WW-3 NS
WW-4 NS
WW-5 NS
WW-6 NS
WW-7 NS
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
MW-11
MW-12
MW-13
MW-14
MW-15
MW-16
MW-17
MW-18
MW-19
MW-20
MW-21
MW-22
MW-23
MW-24
MW-25
MW-26
MW-27
MW-28
MW-29
MW-30
MW-31
MW-32
MW-34
TMW-1
TMW-2
TMW-3
TMW-4
TMW-5
TMW-6
RW-1
RW-2
RW-3
RW-4
RW-6
RW-7
RW-8
MW#1
MW#2
MW#4
MW#5
MW#6
LEGEND
TARGA'S ACTIVE INJECTION WELL
MONITOR WELL LOCATION (SHALLOW)
MONITOR WELL LOCATION (DEEP)
RECOVERY WELL LOCATION
WATER WELL LOCATION (INACTIVE)
OFFSITE PROPERTY WELLS "NOT SAMPLED"
HYDROCARBON INVESTIGATION AREA
CHLORIDE INVESTIGATION AREA
NOTES
1. A SUBSURFACE INVESTIGATION WAS PERFORMED IN THE DIRECT VICINITY OF THE SLOP OIL SUMP IN JULY 1996. THE INVESTIGATION INCLUDED THE INSTALLATION OF A SINGLE SOIL BORING DUE SOUTH OF THE SUMP TO A TD OF 57 FEET BGS. ANALYTICAL RESULTS INDICATED HYDROCARBON IMPACTS AT DEPTH AND LIGHT NON-AQUEOUS HYDROCARBONS (LNAPL) WAS ENCOUNTERED ON THE GROUNDWATER. INVESTIGATION ACTIVITIES ARE SUMMARIZED IN THE SUBSURFACE ENVIRONMENTAL ASSESSMENT GENERATED BY HIGHLANDER ENVIRONMENTAL CORP. DATED SEPTEMBER 1996. REMEDIAL ACTIVITIES FOR THE SLOP OIL SUMP INCLUDED REMOVAL OF THE SUMP IN SEPTEMBER 2000. THE EXCAVATION AREA MEASURED 20' X 20' X 15'. CONFIRMATION SAMPLES FROM THE EXCAVATION AT DEPTH (15') INDICATED HYDROCARBON IMPACTS IN THE SOILS. REMEDIAL ACTIVITIES ARE DETAILED IN THE 2000 ANNUAL SUMMARY OF INVESTIGATION & REMEDIATION GENERATED BY HIGHLANDER ENVIRONMENTAL CORP. IN 2001.
2. A SUBSURFACE INVESTIGATION WAS PERFORMED IN THE DIRECT VICINITY OF THE OIL & WATER SUMP IN AUGUST 1996. THE INVESTIGATION INCLUDED THE INSTALLATION OF A SINGLE SOIL BORING DUE SOUTH OF THE SUMP TO A TD OF 57 FEET BGS. ANALYTICAL RESULTS INDICATED HYDROCARBON IMPACTS IN THE INTERMEDIATE SOILS AT 17 FEET BGS AND LNAPL WAS ENCOUNTERED ON THE GROUNDWATER. INVESTIGATION ACTIVITIES ARE SUMMARIZED IN THE SUBSURFACE ENVIRONMENTAL ASSESSMENT GENERATED BY HIGHLANDER ENVIRONMENTAL CORP. DATED SEPTEMBER 1996. REMEDIAL ACTIVITIES FOR THE SLOP OIL SUMP INCLUDED REMOVAL OF THE SUMP IN SEPTEMBER 2000. THE EXCAVATION AREA MEASURED 20' X 20' X 15'. CONFIRMATION SAMPLES FROM THE EXCAVATION AT DEPTH (10') INDICATED HYDROCARBON IMPACTS IN THE SOILS. REMEDIAL ACTIVITIES ARE DETAILED IN THE 2000 ANNUAL SUMMARY OF INVESTIGATION & REMEDIATION GENERATED BY HIGHLANDER ENVIRONMENTAL CORP. IN 2001.
3. A SUBSURFACE INVESTIGATION WAS PERFORMED IN THE DIRECT VICINITY OF THE JET TURBINE SKID IN AUGUST 1996. THE INVESTIGATION INCLUDED THE INSTALLATION OF 3 BORINGS RANGING IN TDS FROM 52 AND 57 FEET BGS. ANALYTICAL RESULTS INDICATED HYDROCARBON IMPACTS TO BOTH THE SOILS AND GROUNDWATER IN ALL 3 BORINGS. TWO OF THE THREE BORINGS WERE CONVERTED TO MONITOR WELLS (MW-1 & MW-2). INVESTIGATION ACTIVITIES ARE SUMMARIZED IN THE SUBSURFACE ENVIRONMENTAL ASSESSMENT GENERATED BY HIGHLANDER ENVIRONMENTAL CORP. DATED SEPTEMBER 1996.
4. TWO SEPARATE SHALLOW SUBSURFACE INVESTIGATIONS WERE CONDUCTED IN THE VICINITY OF ENGINE SUMP #30 IN AUGUST 1996 AND JUNE 1997. THE AUGUST 1996 INVESTIGATION INCLUDED THE INSTALLATION OF A SINGLE SHALLOW SOIL BORING DIRECTLY NORTH OF THE ENGINE SUMP #30 TO A TD OF 15 FEET BGS. RESULTS AT TD INDICATED HYDROCARBON IMPACTS AT DEPTH. THE JUNE 1997 INVESTIGATION INCLUDED THE INSTALLATION OF THREE ADDITIONAL SHALLOW BORINGS (EAST, WEST & SOUTH OF THE SUMP) TO A MAXIMUM DEPTH OF 4 FEET BGS. NO HYDROCARBONS WERE DETECTED IN ANY OF THE THREE BORINGS AT DEPTH (4 FEET). INVESTIGATION ACTIVITIES ARE SUMMARIZED IN THE FINAL INVESTIGATION REPORT GENERATED BY HIGHLANDER ENVIRONMENTAL CORP. DATED JULY 1997.
5. A SHALLOW SUBSURFACE INVESTIGATION WAS PERFORMED IN THE VICINITY OF ENGINE SUMP #31 IN AUGUST 1996. THIS INVESTIGATION INCLUDED THE INSTALLATION OF A SINGLE BORING DUE SOUTH OF THE SUMP TO A TD OF 6 FEET BGS. NO HYDROCARBONS IMPACTS WERE DETECTED AT DEPTH. INVESTIGATION ACTIVITIES ARE SUMMARIZED IN THE SUBSURFACE ENVIRONMENTAL ASSESSMENT GENERATED BY HIGHLANDER ENVIRONMENTAL CORP. DATED SEPTEMBER 1996.
6. A SHALLOW SUBSURFACE INVESTIGATION WAS CONDUCTED ON THE SOUTHWEST CORNER OF THE EMERGENCY FLARE SUMP IN AUGUST 1996. THE INVESTIGATION INCLUDED A SHALLOW TRENCH (TEST PIT) THAT WAS EXCAVATED TO 5 FEET BGS. CONFIRMATION SAMPLES AT DEPTH (5 FEET BGS) WERE BELOW LABORATORY DETECTION LIMITS. INVESTIGATION ACTIVITIES ARE SUMMARIZED IN THE SUBSURFACE ENVIRONMENTAL ASSESSMENT GENERATED BY HIGHLANDER ENVIRONMENTAL CORP. DATED SEPTEMBER 1996.
7. AN INTERMEDIATE SUBSURFACE INVESTIGATION WAS PERFORMED IN THE VICINITY OF THE H2S FLARE SUMP IN AUGUST 1996. THE INVESTIGATION INCLUDED THE INSTALLATION OF A SINGLE SOIL BORING TO A TD OF 27 FEET BGS. HYDROCARBON IMPACTS WERE DETECTED IN THE SHALLOW (1.5-2 FEET) SOILS NEAR THE H2S FLARE SUMP. ANALYTICAL RESULTS AT THE 27 FEET BGS INTERVAL WERE BELOW LABORATORY DETECTION LIMITS. INVESTIGATION ACTIVITIES ARE SUMMARIZED IN THE SUBSURFACE ENVIRONMENTAL ASSESSMENT GENERATED BY HIGHLANDER ENVIRONMENTAL CORP. DATED SEPTEMBER 1996.
8. A SUBSURFACE INVESTIGATION WAS PERFORMED IN THE DIRECT VICINITY OF FIELD OIL PIT "D" IN NOVEMBER 1996. THE INVESTIGATION INCLUDED THE INSTALLATION OF A SINGLE SOIL BORING TO A TOTAL DEPTH (TD) OF FORTY-EIGHT (48) FEET BELOW GROUND SURFACE (BGS). ANALYTICAL RESULTS INDICATED HYDROCARBON IMPACTS EXTENDED TO 40 FEET BGS. GROUNDWATER WAS NOT ENCOUNTERED DURING THE INSTALLATION OF THE BORING. INVESTIGATION ACTIVITIES ARE SUMMARIZED IN THE FINAL INVESTIGATION REPORT GENERATED BY HIGHLANDER ENVIRONMENTAL CORP. DATED JULY 1997. REMEDIAL ACTIVITIES FOR THE FIELD OIL PIT "D" INCLUDED OVER-EXCAVATION ACTIVITIES THAT WERE PERFORMED IN FEBRUARY 2000. A TOTAL OF 312 CUBIC YARDS OF SOIL WERE REMOVED. REMEDIAL ACTIVITIES ARE DETAILED IN THE 2000 ANNUAL SUMMARY OF INVESTIGATION & REMEDIATION GENERATED BY HIGHLANDER ENVIRONMENTAL CORP. IN 2001.
9. THE EAST SUMP WAS CONSTRUCTED OF CONCRETED AND MEASURED 5' X 5' X5'. THE EAST SUMP WAS REMOVED IN SEPTEMBER 2000 AND THE AREA WAS OVER-EXCAVATED TO APPROXIMATELY 9' X 13' X 10'. CONFIRMATION SAMPLES FROM THE EXCAVATION AT DEPTH (5') INDICATED HYDROCARBON IMPACTS IN THE SOILS. REMEDIAL ACTIVITIES ARE DETAILED IN THE 2000 ANNUAL SUMMARY OF INVESTIGATION & REMEDIATION GENERATED BY HIGHLANDER ENVIRONMENTAL CORP. IN 2001.
10. A SUBSURFACE INVESTIGATION WAS PERFORMED IN THE DIRECT VICINITY OF THE CONCRETE DRAIN SUMP IN SEPTEMBER 2000. THE INVESTIGATION INCLUDED THE INSTALLATION OF A SINGLE SOIL BORING TO A TD OF 51 FEET BGS. ANALYTICAL RESULTS INDICATED HYDROCARBON IMPACTS AT DEPTH. REMEDIAL ACTIVITIES FOR THE CONCRETE DRAIN SUMP INCLUDED REMOVAL OF THE SUMP IN SEPTEMBER 2000. THE EXCAVATION AREA MEASURED 9' X 13' X 9'. CONFIRMATION SAMPLES FROM THE EXCAVATION AT DEPTH (9') INDICATED HYDROCARBON IMPACTS IN THE SOILS. BOTH INVESTIGATION AND REMEDIATION ACTIVITIES ARE SUMMARIZED IN THE 2000 ANNUAL SUMMARY OF INVESTIGATION & REMEDIATION GENERATED BY HIGHLANDER ENVIRONMENTAL CORP. IN 2001.
11. THE NORTH BRINE WATER RETENTION POND (POND #2) MEASURED APPROXIMATELY 243' X 243' X 15' AND HAD A DESIGNED CAPACITY OF 75,000 BARRELS (BBLS). USAGE OF THIS POND WAS DISCONTINUED IN EARLY 1998. THIS NORTH BRINE WATER RETENTION POND WAS CAPPED AND CROWNED WITH A CLAY CAP IN LATE 2000.
12. THE SOUTH BRINE WATER RETENTION POND (POND #4) MEASURED APPROXIMATELY 190' X 240' X 15' AND HAD A DESIGNED CAPACITY OF 52,000 BARRELS (BBLS). USAGE OF THIS POND WAS DISCONTINUED IN MID 1998. THIS SOUTH BRINE WATER RETENTION POND WAS CAPPED AND CROWNED WITH A CLAY CAP IN LATE 2000.
13. THE FORMER TANK BATTERY LOCATION WAS STRUCK BY LIGHTNING IN MAY 2005. THIS FORMER TANK BATTERY LOCATION WAS USED FOR FLUID (LNAPL AND PRODUCED WATER) STORAGE BY THE GROUNDWATER REMEDIATION SYSTEMS LOCATED ON THE EAST SIDE OF THE PLANT. APPROXIMATELY 350 BBLS OF FLUIDS WERE RELEASED AND 330 BBLS WERE RECOVERED. DEMOLITION OF THE FORMER TANK BATTERY IS SUMMARIZED IN A TRANSMITTAL LETTER OF A SEMI-ANNUAL GROUNDWATER MONITORING REPORT FOR THE EUNICE SOUTH GAS PLANT GENERATED BY SECOR INTERNATIONAL INC. DATED MARCH 3, 2006.
14. A SUBSURFACE INVESTIGATION WAS CONDUCTED IN THE VICINITY OF THE FORMER TRUCK LOADING AREA LOCATED SOUTH OF THE PLANT IN NOVEMBER 2005. THE INVESTIGATION INCLUDED THE INSTALLATION OF 3 BORINGS TO GROUNDWATER. HYDROCARBON IMPACTS WERE DETECTED IN THE SHALLOW (5-6 FEET BGS) AND IN THE INTERMEDIATE (25-26 BGS) IN AT LEAST ONE BORING. TWO OF THE THREE WELLS WERE CONVERTED INTO MONITOR WELLS (MW 32 & MW 34). INVESTIGATION ACTIVITIES ARE SUMMARIZED IN THE 2006 ANNUAL SUMMARY OF INVESTIGATION AND REMEDIATION FOR THE SOUTH EUNICE GAS PLANT GENERATED BY SECOR INTERNATIONAL INC. IN JULY 2006.
15. THE NORTHWEST BRINE WATER RETENTION POND (POND #3) WAS CAPPED IN JULY 2007. DEMOLITION ACTIVITIES OF THE SOUTHWEST BRINE WATER RETENTION POND (POND #3) ARE SUMMARIZED IN THE 2007 ANNUAL SUMMARY OF INVESTIGATION AND REMEDIATION FOR THE SOUTH EUNICE GAS PLANT GENERATED BY SECOR INTERNATIONAL IN MARCH 7, 2007.
WELL ID
TW-6
Mercury <0.00020 — ALL CONCENTRATIONS IN MILLIGRAMS PER LITER (mg/L)
Arsenic 0.138 — DETECTION
Selenium <0.00020
Barium 0.0615 — EXCEEDENCE
Cadmium <0.0050
Chromium <0.0150
Lead <0.0150
Silver <0.0050
NOTES:
1. SAMPLES WERE COLLECTED IN AUGUST 2009 WITH THE EXCEPTION OF RW-8 WHICH WAS SAMPLED IN OCTOBER 2009.
2. DISSOLVED METAL (MERCURY) WAS ANALYZED BY EPA METHOD 7470A.
3. DISSOLVED METALS (ARSENIC, BARIUM, CADMIUM, CHROMIUM, LEAD, SELENIUM & SILVER) WERE ANALYZED BY EPA METHOD 6010B.
4. BOLD INDICATES THAT A COC WAS DETECTED.
5. SHADING INDICATES THAT A DETECTED RESULT EXCEEDED THE NMWQCC STANDARD 20.6.2.3103.B.
SCALE VERIFICATION
THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.
Chevron Environmental Management Company
EUNICE SOUTH
RCRA8 METALS CONCENTRATION MAP
DEEP WELLS - AUGUST 2009
CONESTOGA-ROVERS & ASSOCIATES
Source Reference:
USGS 1968 AERIAL
Project Manager: J. ORNELAS
Reviewed By: T LARSON
Date: AUGUST 2009
Scale: 1:100
Project N/A: 055271-09
Report N/A: 002
Drawing N/A: 020
055271-09(002)GN-MD020 SEP 22/2010