CON 12-15
Doc #19380

Site Name: K-Mart / Theisen's, Charles City

Brownfield Initial Site Screening (ISS)

Project Manager: Tami Rice

Date: June 23, 2008

☒ **3931 - Phase II Assessment Review - standard**
Phase II submitted as part of standard real estate development, pre-purchase agreement, or other due diligence, not a part of a community grant project, or

☐ **3837 - Phase II Assessment – grant funded**
Phase II submitted as part of an EPA grant funded community-wide or targeted assessment project – see Mel Pins if questions on this determination

Location:

Latitude: 43. 0645 *Longitude:-92. 6794* ***County:Floyd***
(Decimal Degree format)

USGS Quadrant: Charles City

Site Size: 3.68

Site Dimension: ☒ Acres ☐ Square Feet ☐ Feet ☐ Square Miles ☐ Miles

Site Alias Name(s): NA

Congressional District: 4

Grant Recipient Name, Address & Contact: NA

Current Owner & Address: Northwest Investments Of Lacrosse, LLC, 505 King Street, LaCrosse, Wisconsin 54601

Responsible Party Name(s) & Address, if different from current owner:
Unknown at this time.

Site Street Address or Tier, Range, Section & Subsections (if street address is unknown)
90 South Main Street, Charles City, Iowa 50616

Directions to site: Take I-35 North toward Ames. Merge onto US-18 east / IA-27 south via exit 190 toward Mason City/Charles City. Take the IA-14 exit, exit 214, toward Charles City / Greene. Turn right onto US-18 / IA-14 / 7 Mile Road. Continue to follow US-18 / IA-14. Turn left onto US-18 / IA-14 / South Main Street. The site is located on the side of South Main Street at 90 South Main Street.

Summarize the site history (past usages, past ownerships, wastes, known or suspected contamination pathways such as tanks, septic tank/tile field, lagoon, land applications, S.W. burial, etc)

The site has been developed since at least 1888. Since this time it has been used as a fruit and meat market, grocery store, wood working company, bike shop, stone cutting business, cheese factory, ice cream shop, auto garage, and bakery. Most of the site buildings were destroyed in the 1960s and 1970s while the current building and parking area was constructed in 1977. The surrounding properties have been used for residential and commercial purposes since at least 1888.

Recognized environmental concerns associated with the site as outlined in the Phase II Report included the following:

- The site was a RCRA small quantity generator (SQG).
- An underground storage tank (UST) was removed from the site in 1992. Shortly after, a leak was reported to the DNR.
- An auto shop operated in the northeast portion of the site building which utilized hydraulic lifts and trench drains.
- There is nearby leaking underground storage tank (LUST) site located adjacent to and southwest of the site.

Briefly describe the site assessment that was conducted (number of borings, monitoring wells, number of samples, depth of soil samples and monitoring wells, analysis, etc.)

The assessment consisted of four (4) borings utilizing rotary drilling technology and six (6) borings utilizing direct push drilling technology (geoprobe). Soil from the borings were field screened using a photo-ionization detector (PID) which did not detect any organic vapors. A soil sample was collected from the rotary boreholes (ST-1 through ST-4) at depths ranging from 2.5 to 7.5 feet below ground surface (bgs). A soil sample was collected from the geoprobe boreholes (GP-1 through GP-6) at depths ranging from 4 to 12 feet bgs. Groundwater was encountered onsite between 12 and 22.5 feet bgs and bedrock was noted onsite at depths ranging from 6.5 to 15 feet bgs. Groundwater samples were collected from ST-3, GP-1, GP-2, and GP-3. All of the soil and groundwater samples were analyzed for volatile organic compounds (VOCs).

Summarize the findings and conclusions regarding the contaminants found and their extent and concentrations. Relate those values to known criteria such as statewide standards, MCLs, water quality standards, background levels or other benchmarks used to determine site priority.

Benzene was detected in soil sample GP-3 (4-6') and tetrachloroethene was detected in soil sample GP-5 (4-6') at concentrations of 0.029 mg/kg and 0.046 mg/kg respectively which are below the applicable soil standards. Acetone, benzene, methyl ethyl ketone, chloromethane, 1,2-dichloroethane, 1,1-dichloroethene, trans-1,2-dichloroethene, methyl tert-butyl ether, toluene, 1,1,2-trichloroethane, trichloroethene, and vinyl chloride were detected in groundwater onsite. Several of these constituents were first detected in sample ST-3 which prompted additional groundwater investigation by the collection of samples GP-1, GP-2, and GP-3. The only contaminant that exceeded a standard in groundwater was 1,2-dichloroethane which was detected in ST-3 at 26 ug/L, exceeding the standard of 5 ug/L. Concentrations of 1,1,2-trichloroethane were detected in groundwater sample ST-3 at 5 ug/L which is equal to the standard of 5 ug/L. It should be noted that the laboratory detection limits for acrylonitrile, 1, 2-

dibromo-3-chloropropane, and 1, 2-dibromoethane exceeded the applicable standards. Please see Tables 1 and 2 for additional information.

Identify on-site or off-site potential and actual targets (e.g., municipal wells, private wells, drinking water intakes). What is known of the neighboring area, i.e., are there residences, businesses, public use areas, etc.? Are there utility lines that could be impacted by site contaminants? Identify any other use/location issues that deserve consideration.
There are two inactive municipal wells and two plugged wells located within a quarter-mile radius of the site. In addition, there is an active heat pump well located between a quarter-mile and half-mile radius of the site. The municipal wells are 1,385 to 1,587 feet deep with bedrock noted between 28 and 47 feet bgs. The heat pump well is 60 feet deep with bedrock noted at 40 feet deep. The Cedar River is located about 100 feet north-northeast of the site.

Rate the site on a scale of 1 to 4, in decreasing order of severity or priority.
3

Summarize the reasoning, knowledge or any other information used in determining your recommendation regarding the priority assigned to this site.
None of the concentrations detected in soil exceeded the applicable statewide standards. 1,2-dichloroethane was detected in groundwater sample ST-3 at 26 ug/L which exceeded the standard of 5 ug/L. Concentrations of 1,1,2-trichloroethane were detected in groundwater sample ST-3 at 5 ug/L which is equal to the standard of 5 ug/L. In addition, several laboratory detection limits exceeded the applicable standards for groundwater. Based on the presence and concentrations of daughter products for 1,1,2-trichloroethane, it appears that the chlorinated solvents in groundwater onsite are naturally degrading. Therefore, no additional investigation is required at this time.

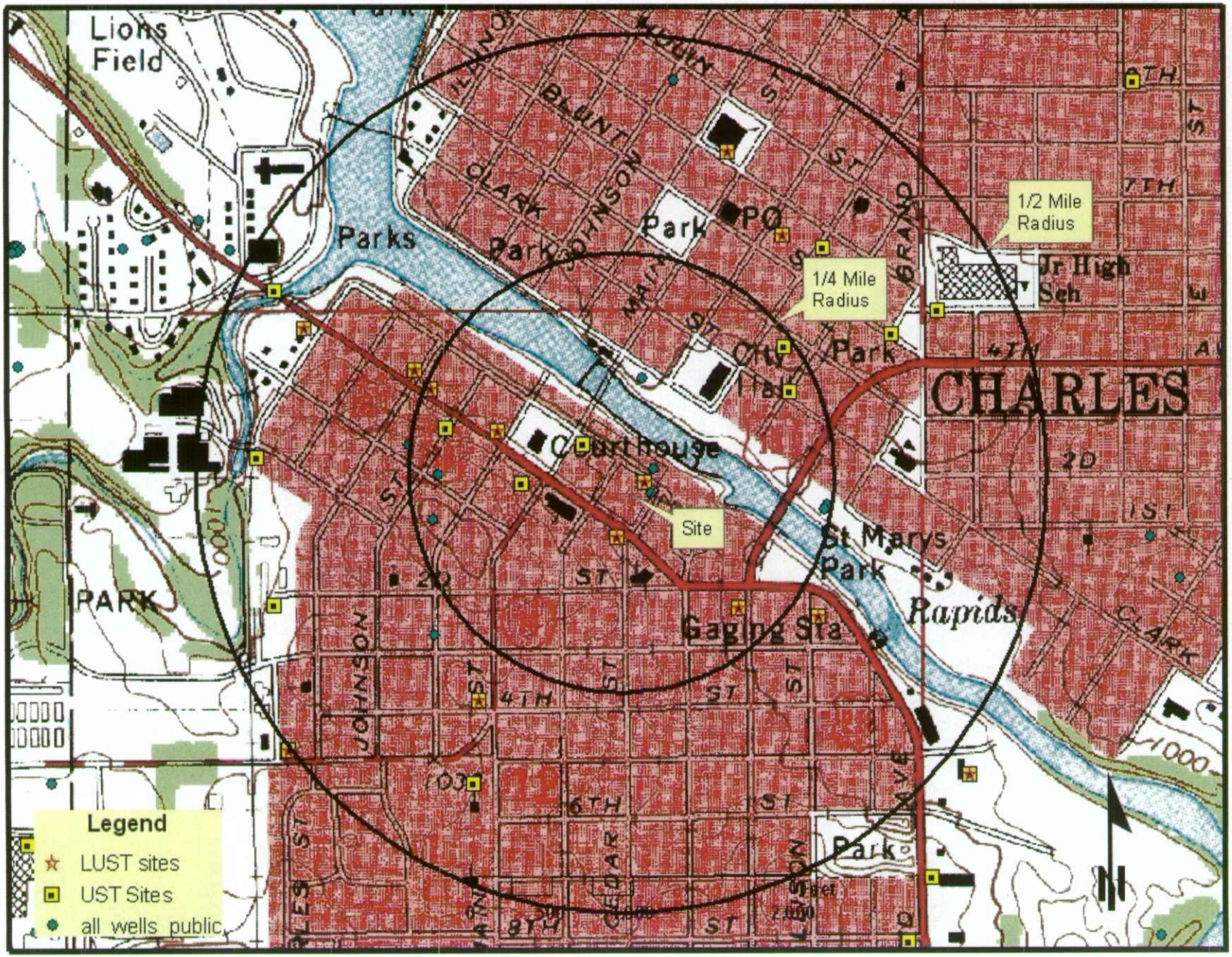
No further action is required under CERCLA or Iowa Chapter 133 at this time and the site is not a candidate for an ESS.

Site recommended for:
- ☒ No further action
- ☐ Additional investigation under state program (activity code 2824)
- ☐ Additional investigation under CERCLA (Extended Site Screening)
- ☐ Additional investigation by responsible party
- ☐ Transfer to LUST/UST

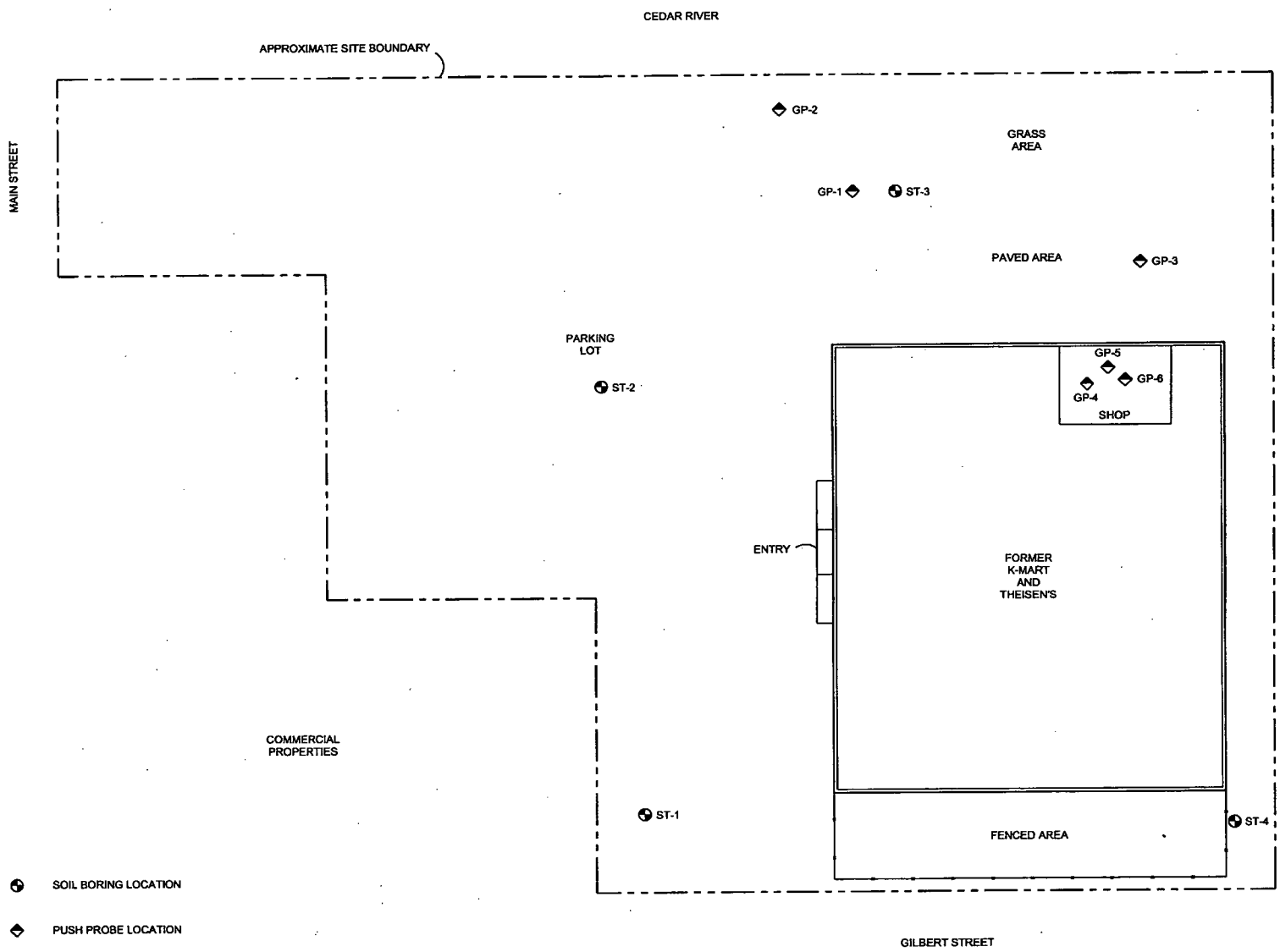
Form Reviewed: Cal Lundberg **Date Reviewed:** 6/26/08

Revised 6/2007

K-Mart / Theisen's, Charles City



K-Mart / Theisen's, Charles City



BRAUN INTERTEC
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Base Dwg Provided By:

SOIL BORING AND PUSH PROBE LOCATIONS
PHASE II ENVIRONMENTAL SITE ASSESSMENT
PROPOSED KWIK TRIP
90 SOUTH MAIN STREET
CHARLES CITY, IOWA

Project No: LC0800588

Drawing No: LC0800588A

Scale:	NONE
Drawn By:	JAG
Date Drawn:	4/17/08
Checked By:	NK
Last Modified:	4/18/08

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Table 1 - Soil Results (mg/kg)

	ST-1 (2.5-5')	ST-2 (2.5-5')	ST-3 (5-7.5')	ST-4 (5-7.5')	GP-1 (8-10')	GP-2 (10-12')	GP-3 (4-6')	GP-4 (6-8')	GP-5 (4-6')	GP-6 (6-8')	Standards
Acetone	<0.59	<0.58	<0.56	<0.53	<0.6	<0.59	<0.56	<0.56	<0.59	<0.54	68,000
Acrylonitrile	<0.29	<0.29	<0.28	<0.26	<0.3	<0.29	<0.28	<0.28	<0.3	<0.27	5.7
Benzene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	0.029	<0.028	<0.03	<0.027	88
Bromobenzene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	-
Bromochloromethane	<0.041	<0.041	<0.039	<0.037	<0.042	<0.041	<0.039	<0.039	<0.041	<0.038	760
Bromodichloromethane	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	50
Bromoform	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	390
Bromomethane	<0.12	<0.12	<0.11	<0.11	<0.12	<0.12	<0.11	<0.11	<0.12	<0.11	110
2-Butanone (MEK)	<0.29	<0.29	<0.28	<0.26	<0.3	<0.29	<0.28	<0.28	<0.3	<0.27	46,000
n-Butylbenzene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	23,000
sec-Butylbenzene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	-
tert-Butylbenzene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	-
Carbon disulfide	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	7,600
Carbon tetrachloride	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	24
Clorobenzene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	1,500
Chlorodibromomethane	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	-
Chloroethane	<0.059	<0.058	<0.056	<0.053	<0.06	<0.059	<0.056	<0.056	<0.059	<0.054	-
Chloroform	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	510
Chloromethane	<0.059	<0.058	<0.056	<0.053	<0.06	<0.059	<0.056	<0.056	<0.059	<0.054	240
2-Chlorotoluene	<0.059	<0.058	<0.056	<0.053	<0.06	<0.059	<0.056	<0.056	<0.059	<0.054	1,500
4-Chlorotoluene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	1,500
1,2-Dibromo-3-Chloropropane	<0.059	<0.058	<0.056	<0.053	<0.06	<0.059	<0.056	<0.056	<0.059	<0.054	2.2
1,2-Dibromoethane	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	1.5
Dibromomethane	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	760
1,2-dichlorobenzene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	5,500
1,3-dichlorobenzene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	5,500
1,4-dichlorobenzene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	610
Dichlorodifluoromethane	<0.059	<0.058	<0.056	<0.053	<0.06	<0.059	<0.056	<0.056	<0.059	<0.054	15,000
1,1-Dichloroethane	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	15,000
1,2-Dichloroethane	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	34
1,1-Dichloroethene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	380
cis-1,2-Dichloroethene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	760
trans-1,2-Dichloroethene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	1,500
1,3-Dichloropropane	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	31
2,2-Dichloropropane	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	-
1,1-Dichloropropene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	-

Table 1 - Soil Results (mg/kg)

	ST-1 (2.5-5')	ST-2 (2.5-5')	ST-3 (5-7.5')	ST-4 (5-7.5')	GP-1 (8-10')	GP-2 (10-12')	GP-3 (4-6')	GP-4 (6-8')	GP-5 (4-6')	GP-6 (6-8')	Standards
cis-1,3-Dichloropropene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	-
trans-1,3-Dichloropropene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	-
Ethylbenzene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	7,600
Hexachlorobutadiene	<0.041	<0.041	<0.039	<0.037	<0.042	<0.041	<0.039	<0.039	<0.041	<0.038	31
Isopropylbenzene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	-
p-Isopropyltoluene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	-
Methylene Chloride	<0.059	<0.058	<0.056	<0.053	<0.06	<0.059	<0.056	<0.056	<0.059	<0.054	410
Methyl tert-butyl ether	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	2,300
Naphthalene	<0.059	<0.058	<0.056	<0.053	<0.06	<0.059	<0.056	<0.056	<0.059	<0.054	1,100
n-Propylbenzene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	-
Styrene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	15,000
1,1,1,2-tetrachloroethane	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	230
1,1,2,2-tetrachloroethane	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	15
Tetrachloroethene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	0.046	<0.027	5.7
Toluene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	6,100
1,2,3-trichlorobenzene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	-
1,2,4-trichlorobenzene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	760
1,1,1-trichloroethane	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	2,700
1,1,2-trichloroethane	<0.041	<0.041	<0.039	<0.037	<0.042	<0.041	<0.039	<0.039	<0.041	<0.038	54
Trichloroethene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	7.7
Trichlorofluoromethane	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	23,000
1,2,3-trichloropropane	<0.059	<0.058	<0.056	<0.053	<0.06	<0.059	<0.056	<0.056	<0.059	<0.054	0.44
1,2,4-trimethylbenzene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	3,800
1,3,5-trimethylbenzene	<0.029	<0.029	<0.028	<0.026	<0.03	<0.029	<0.028	<0.028	<0.03	<0.027	3,800
Vinyl Chloride	<0.041	<0.041	<0.039	<0.037	<0.042	<0.041	<0.039	<0.039	<0.041	<0.038	2.1
Xylenes	<0.1	<0.099	<0.095	<0.09	<0.1	<0.1	<0.095	<0.095	<0.1	<0.091	15,000

Table 2 - Groundwater Results (ug/L)

	ST-3	GP-1	GP-2	GP-3	Standards
Acetone	7.1	6.9	14	12	6,300
Acrylonitrile		**<5**	**<5**	**<5**	0.32
Benzene	0.44	0.23	<0.2	<0.2	5
Bromobenzene		<0.2	<0.2	<0.2	-
Bromochloromethane		<0.5	<0.5	<0.5	90
Bromodichloromethane		<0.2	<0.2	<0.2	80
Bromoform		<0.2	<0.2	<0.2	80
Bromomethane		<0.2	<0.2	<0.2	10
2-Butanone (MEK)	1.4	1.6	3.4	2.4	4,000
n-butylbenzene		<0.2	<0.2	<0.2	2,100
sec-butylbenzene		<0.25	<0.25	<0.25	-
tert-butylbenzene		<0.2	<0.2	<0.2	-
Carbon disulfide		<1	<1	<1	700
Carbon tetrachloride		<0.5	<0.5	<0.5	5
Clorobenzene		<0.2	<0.2	<0.2	100
Chlorodibromomethane		<0.2	<0.2	<0.2	60
Chloroethane		<1	<1	<1	-
Chloroform		<0.2	<0.2	<0.2	80
Chloromethane		<0.2	2.2	<0.2	30
2-chlorotoluene		<0.5	<0.5	<0.5	100
4-chlorotoluene		<0.2	<0.2	<0.2	100
1,2-dibromo-3-chloropropane		**<0.5**	**<0.5**	**<0.5**	0.2
1,2-dibromoethane		**<0.2**	**<0.2**	**<0.2**	0.05
Dibromomethane		<0.2	<0.2	<0.2	70
1,2-Dichlorobenzene		<0.2	<0.2	<0.2	600
1,3-Dichlorobenzene		<0.2	<0.2	<0.2	600
1,4-Dichlorobenzene		<0.2	<0.2	<0.2	75
Dichlorodifluoromethane		<0.5	<0.5	<0.5	1,000
1,1-Dichloroethane		<0.5	<0.5	<0.5	140
1,2-Dichloroethane	**26**	<0.5	<0.5	<0.5	5
1,1-Dichloroethene	1.8	<0.5	<0.5	<0.5	7
cis-1,2-Dichloroethene		<0.5	<0.5	<0.5	70
trans-1,2-Dichloroethene	1.8	<0.5	<0.5	<0.5	100
1,3-Dichloropropane		<0.25	<0.25	<0.25	1.8
2,2-Dichloropropane		<0.5	<0.5	<0.5	-
1,1-Dichloropropene		<0.5	<0.5	<0.5	-
cis-1,3-Dichloropropene		<0.2	<0.2	<0.2	-
trans-1,3-Dichloropropene		<0.2	<0.2	<0.2	-
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	700

	ST-3	GP-1	GP-2	GP-3	Standards
Hexachlorobutadiene		<0.5	<0.5	<0.5	1
Isopropylbenzene		<0.2	<0.2	<0.2	-
p-isopropyltoluene		<0.2	<0.2	<0.2	-
Methylene Chloride		<1	<1	<1	5
Methyl tert-butyl ether	0.76	<0.5	<0.5	<0.5	21
Naphthalene		<0.25	<0.25	<0.25	100
n-propylbenzene		<0.5	<0.5	<0.5	-
Styrene		<0.2	<0.2	<0.2	100
1,1,1,2-tetrachloroethane		<0.25	<0.25	<0.25	70
1,1,2,2-tetrachloroethane		<0.2	<0.2	<0.2	0.3
Tetrachloroethene		<0.5	<0.5	<0.5	5
Toluene	0.38	0.38	0.22	<0.2	1000
1,2,3-trichlorobenzene		<0.25	<0.25	<0.25	-
1,2,4-trichlorobenzene		<0.25	<0.25	<0.25	70
1,1,1-trichloroethane		<0.5	<0.5	<0.5	200
1,1,2-trichloroethane	5	<0.25	<0.25	<0.25	5
Trichloroethene	0.46	<0.2	<0.2	<0.2	5
Trichlorofluoromethane		<0.5	<0.5	<0.5	2,000
1,2,3-trichloropropane		<0.5	<0.5	<0.5	40
1,2,4-trimethylbenzene	<0.2	<0.2	<0.2	<0.2	350
1,3,5-trimethylbenzene	<0.2	<0.2	<0.2	<0.2	350
Vinyl Chloride	1.2	<0.2	<0.2	<0.2	2
Xylenes	<0.5	<0.5	<0.5	<0.5	10,000