TRICORE ENVIRONMENTAL, LLC

April 23, 2010

VIA USPS PRIORITY MAIL
WITH DELIVERY CONFIRMATION

Mr. Brian Bauer
Illinois Environmental Protection Agency
Bureau of Land #24
Leaking Underground Storage Tank Section
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

RE: LPC No. 0971855024 – Lake County
Wauconda/Shivam Energy, Inc.
399 West Liberty Street
IEMA Incident Nos. 892744 and 903199
LUST TECHNICAL FILE

Dear Mr. Bauer:

TriCore Environmental, LLC (TriCore), on behalf of Shivam Energy, Inc. (Shivam), is providing the following information as an amendment to the Amended Corrective Action Plan (CAP) and Budget dated June 16, 2009.

In the aforementioned Amended CAP, TriCore proposed a dual phase extraction system in which the treated groundwater would be discharged into the Village of Wauconda sanitary sewer system. On February 1, 2010, TriCore submitted an Application for Wastewater Discharge Permit to the Village of Wauconda. On February 22, 2010, the Village of Wauconda denied the permit application due to an ordinance that prohibits the discharge of groundwater to the public sewer, which by definition includes both the sanitary and storm sewer systems. The Village also indicated that they are not inclined to revise the ordinance at this time. Since there are no other sewer systems surrounding the site, TriCore is proposing the use of an infiltration gallery to transmit the treated groundwater into the subsurface.

The infiltration gallery will be designed so that the treated groundwater would naturally disperse into the surrounding soils assuming a certain head above the static groundwater level during system operation. To calculate the dimensions of the infiltration gallery so that it could transmit the treated groundwater into the subsurface at the same rate it is being added to the gallery, Darcy's equation and a mass balance equation were utilized (Wong, Lim, and Nolen, 1997, Design of Remediation Systems, p. 170). The equations

1800 WEST HAWTHORNE LANE, SUITE P • WEST CHICAGO, IL • 60185
TELEPHONE: (630) 520-9973 • FACSIMILE: (630) 520-9976
WWW.TRICOREWEB.COM

and calculations are provided below.

Equation #1

By using Darcy's equation, the specific discharge (v) of the lithology beneath the site can be calculated.

$v = Ki$

where,

K = hydraulic conductivity = 6.61×10^{-3} cm/sec = 140.15 gpd/ft^2 (Attachment A)

i = hydraulic gradient = 1 ft/ft (this is based on the distance from the proposed infiltration gallery to the nearest recovery well (3 ft) and the estimated elevation of the groundwater within the proposed infiltration gallery (7 ft) and the estimated water level in RW-6 during system operation (10 ft))

Therefore,

$v = 140.15 \text{ gpd/ft}^2 * 1 \text{ ft/ft} = 140.15 \text{ gpd/ft}^2$

Equation #2

Taking into account the porosity of the lithology beneath the site, the seepage velocity (v_s) of the lithology can be calculated.

$v_s = v/\text{porosity}$

where,

$v = 140.15 \text{ gpd/ft}^2$ (Equation #1 above)

porosity = 0.344 (Table 1)

Therefore,

$v_s = (140.15 \text{ gpd/ft}^2)/0.344 = 407.41 \text{ gpd/ft}^2$

Equation #3

To calculate the surface area (A) of the infiltration gallery that would be required to transmit the treated groundwater into the subsurface at the same rate it is being added to the gallery, a mass balance calculation can be performed

$Flow_{In}/A_{In} = Flow_{Out}/A_{Out}$ or $A_{In} = Flow_{In}/ Flow_{Out}/A_{Out}$

where,

$Flow_{In}$ = 28,800 gpd (maximum flow rate based on the air stripper discharge pump equipment specification provided by the manufacturer of the remediation system (Attachment B))

$Flow_{Out}/A_{Out} = v_s = 407.41 \text{ gpd/ft}^2$ (Equation #2 above)

Therefore,

A_{In} = 28,800 gpd/(407.41 gpd/ft^2) = 70.69 ft^2

Based on these calculations, the surface area of the infiltration gallery must be at least 70.69 ft^2 to accommodate a flow rate of 28,800 gpd. Based on the direction of groundwater flow, TriCore is proposing to install the infiltration gallery south of RW-6, along the southern property boundary of the site. The proposed location of the gallery is illustrated on Figure 1. A map showing the groundwater flow direction is illustrated on Figure 2.

Prior to the construction of the infiltration gallery, a private utility locator will be contracted to locate the private utilities on the property. Additionally, blueprints from Shivam will be obtained to assist in locating any underground utilities and/ or subsurface structures that may be located within the proposed infiltration gallery area. For safety purposes, if any subsurface utilities are located within the proposed infiltration gallery area, they will be disconnected prior to the start of the construction activities, if feasible. The utilities will then be reconnected after the construction activities have been completed. It is estimated that 1 day will be required to excavate and backfill the infiltration gallery. TriCore personnel will be on site to document all of the activities being performed.

The infiltration gallery will be designed so that the treated groundwater would naturally disperse into the surrounding soils. The infiltration gallery will be approximately 5 feet wide, 15 feet long, and will be excavated to the depth of the sand layer at the site. The depth of the sand layer in the area of the proposed infiltration gallery ranges in depth from 7.5 feet below land surface (bls) to 8 feet bls; therefore the gallery will be excavated to a depth of 8 feet bls. A total of approximately 23 cubic yards of surface material and soil will be excavated during the construction of the gallery. The excavated material will be transported to a landfill for disposal by a licensed special waste hauler. After the gallery has been excavated, it will be backfilled with pea gravel from 2 feet to 8 feet bls. A perforated discharge pipe will be connected to the groundwater discharge pipe running from the remediation building and will be placed horizontally within the gallery at 6 feet bls. The trench will then be backfilled with road base gravel from 3 inches to 2 feet bls. The infiltration gallery will be equipped with a float switch that will shut off the system if the water reaches a level that will cause the gallery to flood. The gallery will then be resurfaced with asphalt. Prior to constructing and operating the remediation system and infiltration gallery, TriCore will obtain a water pollution control permit from the Illinois Environmental Protection Agency (IEPA). In addition, TriCore will submit a Class V Injection Well Inventory Form to the IEPA.

Monthly compliance samples will be collected from the treated groundwater to ensure that the water discharging into the infiltration gallery has been properly treated and meets the objectives outlined in the IEPA water pollution control permit. The compliance samples will be submitted under standard chain-of-custody protocol to an Illinois Environmental Laboratory Accreditation Program approved laboratory for benzene, toluene, ethylbenzene, total xylenes, and methyl tertiary butyl ether analysis using United States Environmental Protection Agency approved methods. A total of 24 compliance

sampling events will be performed during the operation of the system.

Costs associated with the construction of the proposed infiltration gallery, and the preparation of this Amended CAP and a Class V Injection Well Inventory Form have been included in the Amended Corrective Action Budget provided in Attachment C. Costs associated with the compliance sampling events and obtaining an IEPA water pollution control permit are not included in the attached budget since these costs were included in the aforementioned Amended Corrective Action Budget. An Owner/Operator and Licensed Professional Engineer/Geologist Budget Certification Form is provided in Attachment D. A copy of the Office of the State Fire Marshal Eligibility and Deductible Determination is provided in Attachment E.

If you should have any questions concerning this submittal or require additional information, please contact either of the undersigned at (630) 520-9973.

Sincerely,

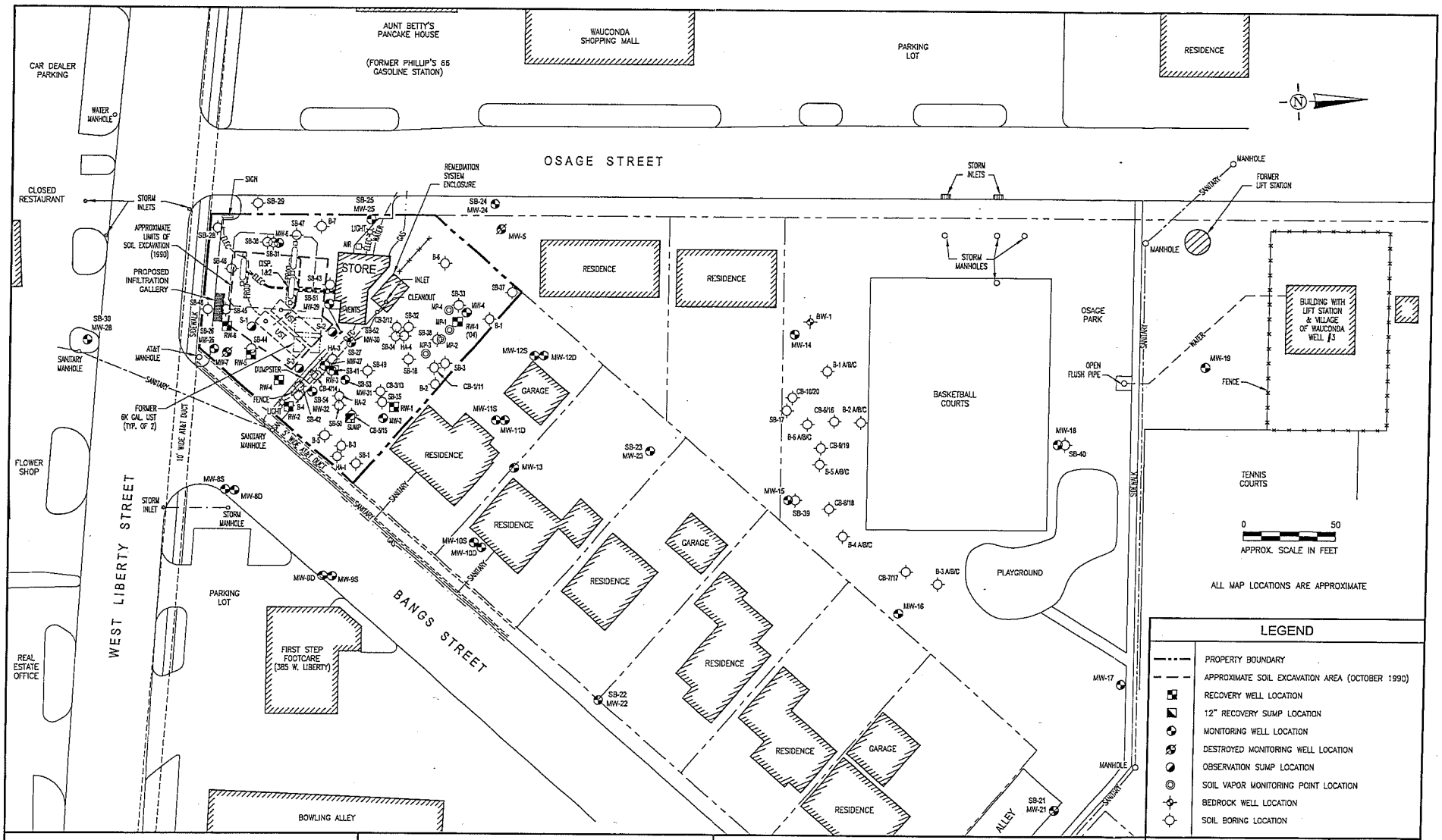
Marcos I. Czakó, P.G.
Project Manager

Shawn Rodeck, P.E.
President

cc: Mr. Rajani Patel, Shivam Energy, Inc., 399 W. Liberty St., Wauconda, IL 60084
Ms. Jackie Soccorso, Village of Wauconda, 109 W. Bangs St., Wauconda, IL 60084
Ms. Diane Ducy, Wauconda Park District, 600 N. Main St., Wauconda, IL 60084
Ms. Gwen Carey, 363 W. Bangs St., Wauconda, IL 60084

Attachments

FIGURES



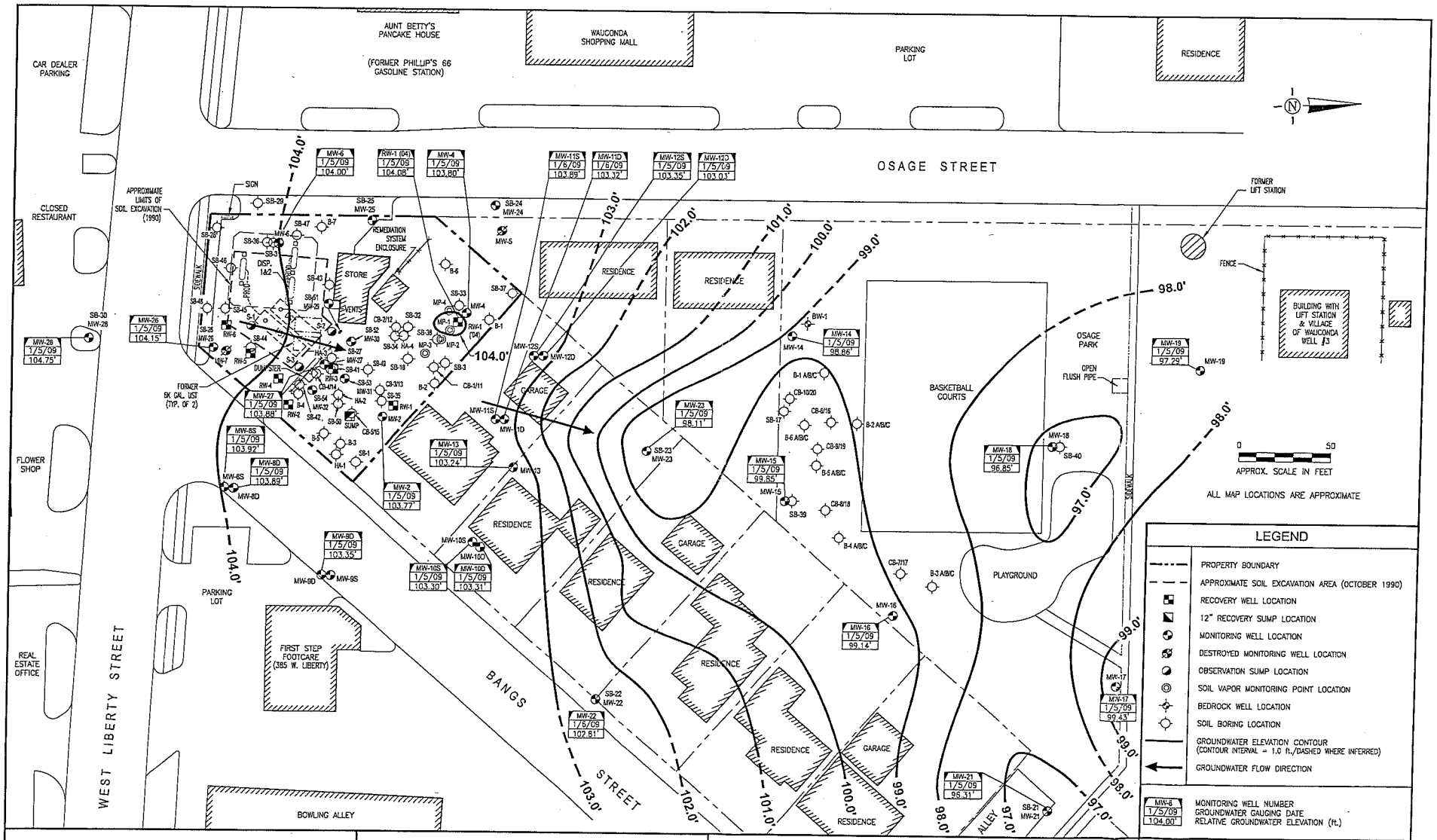
TriCore Environmental, LLC
1800 West Hawthorne Lane, Suite P
West Chicago, Illinois 60185
(630) 520-9973

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Illinois 60084

SITE MAP
SHIVAM ENERGY, INC.
399 WEST LIBERTY STREET
WAUCONDA, LAKE COUNTY, ILLINOIS 60084

DRAWN BY:	MWS
APPROVED BY:	SAR
SCALE:	1" = 50'
DATE:	3/24/10
DRAWING FILE:	0401SM1G

FIGURE **1**



TriCore Environmental, LLC
1800 West Hawthorne Lane, Suite P
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Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Illinois 60084

GROUNDWATER FLOW DIRECTION MAP

SHIVAM ENERGY, INC.
399 WEST LIBERTY STREET
WAUCONDA, LAKE COUNTY, ILLINOIS 60084

DRAWN BY:	MWS
APPROVED BY:	SAR
SCALE:	1" = 50'
DATE:	6/7/09
DRAWING FILE:	0401GE1A

FIGURE 2

TABLES

TABLE 1

Soil Geochemical and Geotechnical Results

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

Sample ID	Date Sampled	Sample Depth (feet bls)	PID Reading (ppm)	Geochemical and Geotechnical Parameters													
				Total Organic Carbon	pH	Reactive Cyanide	Reactive Sulfide	Grain Size Analysis	Visual Soil Classification	Total Porosity	Moisture Content	Dry Bulk Density	Wet Bulk Density	Specific Gravity	TPH Gasoline Range Organics	Chemical Oxygen Demand	Fraction of Organic Carbon
				(mg/kg)	(---)	(mg/kg)	(mg/kg)	(---)	(---)	(%)	(%)	(pcf)	(pcf)	(---)	(mg/kg)	(mg/L)	(%)
MP-2	11-Apr-05	1-3	0.5	14,000													
MP-2	11-Apr-05	5-6	0.7	19,000													
MP-3	11-Apr-06	6-7	238		7.2												
SB-32	1-Jun-06	7-9.5	414			<0.025	<20										
SB-32	1-Jun-06	9.5-11	NA					97% Sand 3% Silt	Dark grayish brown, fine grained SAND (SP)	34.4	17.2	108.6	127.2	2.65			
SB-33	18-Jan-07	10-11	31												<12	3,200	
SB-34	18-Jan-07	8-10	1,333												16	1,700	
SB-35	18-Jan-07	8-10	118												<13	2,000	
SB-36	18-Jan-07	10-11	0.3												<12	5,900	
SB-37	18-Jan-07	6-8	0.4												<12	4,200	
SB-38	11-Dec-07	2-3	0.1														3.27
SB-38	11-Dec-07	3-4	0.1														0.777
SB-39	7-Aug-08	14.25-15.25	NA												<11.8	12,769.88	
SB-40	7-Aug-08	16-17	0												<11.8	15,320.15	

Notes:
1) PID = photoionization detector
2) bls = below land surface; mg/kg = milligrams per kilogram; mg/L = milligrams per Liter; ppm = parts per million; pcf = pounds per cubic foot; % = percent; --- = no specific units
3) <1.9 = concentration less than the laboratory reporting limit
4) The samples were analyzed for grain size analysis, visual soil classification, total porosity, moisture content, dry bulk density, wet bulk density, specific gravity, and fraction of organic carbon using American Society for Testing and Materials methods
5) The samples were analyzed for total organic carbon using United States Environmental Protection Agency (USEPA) Method 9060
6) The sample was analyzed for pH using USEPA Method 9045C
7) The sample was analyzed for reactive cyanide using USEPA Method 7.3.3.2
8) The sample was analyzed for reactive sulfide using USEPA Method 7.3.4.2
9) The samples were analyzed for total petroleum hydrocarbon (TPH) gasoline range organics using USEPA Method 8015
10) The samples were analyzed for chemical oxygen demand using USEPA Method 410.4
11) Shading = not applicable

ATTACHMENT A

HYDRAULIC CONDUCTIVITY CALCULATIONS

Logarithmic Average of Hydraulic Conductivity

MW-4:	1.08×10^{-3} cm/sec	=	2.13×10^{-3} ft/min
MW-6:	6.61×10^{-3} cm/sec	=	1.30×10^{-2} ft/min
MW-14:	8.37×10^{-5} cm/sec	=	1.65×10^{-4} ft/min
MW-16:	2.25×10^{-5} cm/sec	=	4.42×10^{-5} ft/min

$\log_{(\text{average value})}$ = [log (2.13×10^{-3} ft/min) + log (1.30×10^{-2} ft/min) + log (1.65×10^{-4} ft/min) + log (4.42×10^{-5} ft/min)] / 4

$\log_{(\text{average value})}$ = -3.173

Average Value = inv. Log (-3.173) = $10^{-3.268}$ = 6.72×10^{-4} ft/min

$\log_{(\text{average value})}$ = [log (2.13×10^{-3} ft/min) + log (1.30×10^{-2} ft/min] / 4

$\log_{(\text{average value})}$ = -3.173

Average Value (Service Station Area) = inv. Log (-3.173) = $10^{-3.268}$ = 5.37×10^{-3} ft/min

$\log_{(\text{average value})}$ = [log (1.65×10^{-4} ft/min) + log (4.42×10^{-5} ft/min)] / 4

$\log_{(\text{average value})}$ = -3.173

Average Value (Osage Park) = inv. Log (-3.173) = $10^{-3.268}$ = 8.60×10^{-5} ft/min

Average Linear Ground-Water Flow Velocity

Darcy's Law: $v = Q / \eta a = v/\eta = -K\Delta H / \eta \Delta L = Ki/\eta_e$

ΔH = difference in hydraulic head
ΔL = distance between well openings
K = hydraulic conductivity
η = effective porosity (assume 0.20)
i = ($\Delta H / \Delta L$); from 8/27/97 potentiometric surface figure (MW-4 and MW-16)

$v = [6.72 \times 10^{-4}$ ft/min (average of all four wells)] x (5 ft/280 ft) / 0.2

$\bar{v} = 5.21 \times 10^{-5}$ ft/min = **31.74 ft/year (average for entire site)**

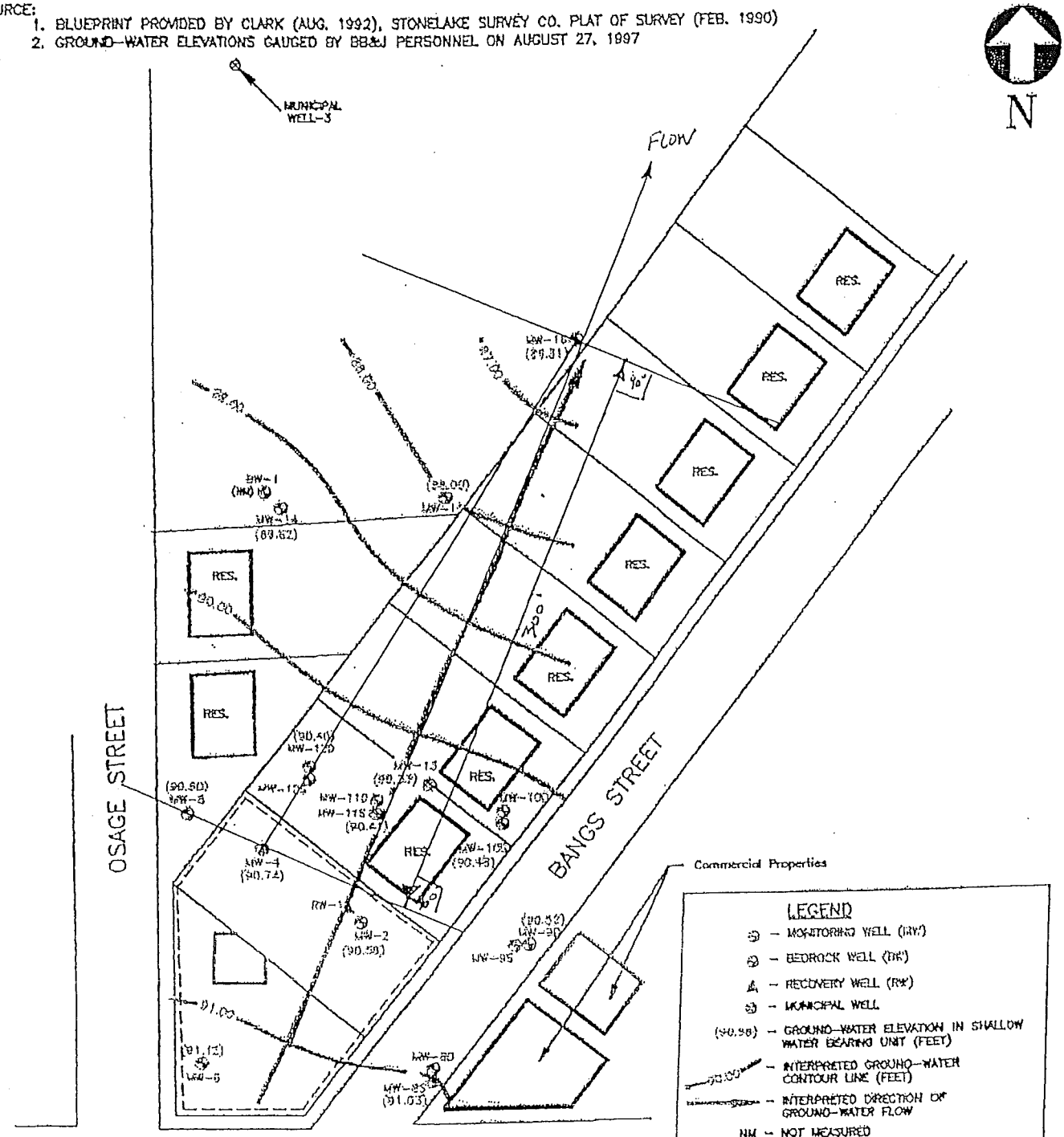
$v = [5.37 \times 10^{-3}$ ft/min (average of wells MW-4 and MW-6)] x (5 ft/280 ft) / 0.2

$\bar{v} = 4.16 \times 10^{-4}$ ft/min = **254.02 ft/year (adjusted average for flow in Service Station Area)**

$v = [8.60 \times 10^{-5}$ ft/min (average of wells MW-14 and MW-16)] x (5 ft/280 ft) / 0.2

$\bar{v} = 6.69 \times 10^{-6}$ ft/min = **4.07 ft/year (adjusted average for Osage Park)**

SOURCE:
1. BLUEPRINT PROVIDED BY CLARK (AUG. 1992), STONELAKE SURVEY CO. PLAT OF SURVEY (FEB. 1990)
2. GROUND-WATER ELEVATIONS GAUGED BY BB&J PERSONNEL ON AUGUST 27, 1997



LEGEND

- ⊙ – MONITORING WELL (MW)
- ⊙ – BEDROCK WELL (BK)
- △ – RECOVERY WELL (RK)
- ⊙ – MUNICIPAL WELL
- (90.98) – GROUND-WATER ELEVATION IN SHALLOW WATER BEARING UNIT (FEET)
- 90.00 – INTERPRETED GROUND-WATER CONTOUR LINE (FEET)
- INTERPRETED DIRECTION OF GROUND-WATER FLOW
- NM – NOT MEASURED
- SUBJECT PROPERTY BOUNDARY
- RES – RESIDENCE
- S: SHALLOW WELL
- D: DEEP WELL

NOTE: POTENTIOMETRIC SURFACE MAP GENERATED UTILIZING SURFER VERSION 4.15.

THE GROUND-WATER ELEVATION FOR MW-13 WAS NOT USED TO GENERATE THIS MAP, DUE TO AN ANOMALOUS WATER LEVEL MEASUREMENT.

40 0 80
APPROXIMATE SCALE IN FEET

Prepared/Date: SSS/10-8-97
Checked/Date: SSW/10-8-97

Clark Station No. 646
399 West Liberty Street

Bradburne, Briller & Johnson, LLC
208 South LaSalle

Ground-Water Potentiometric Surface Map

HYDRAULIC CONDUCTIVITY (BOUWER AND RICE METHOD)

Project No: C01-7-0011
Project Name: Clark Refining & Marketing, Inc.
Location: Station #646

Well No: MW-4
Slug-in/Slug-out: SLUG-OUT
Test Date: 9/24/97
Test By: DPO

Analyzed By: DPO
Analysis Date: 9/24/97

Data Checked By: RGO
Check Date: 10.13.97

Analysis Checked By: _____
Check Date: _____

Variable	Eng. Unit		S.I. Unit		Description
Yo =	0.910	ft	27.7	cm	Drawdown at time "0"
Yt =	0.074	ft	2.3	cm	Drawdown at time "t"
t =	4.00	min	240	sec	Time
SWL =	8.35	ft	254.5	cm	Static water level before slug test
TD =	17.15	ft	522.7	cm	Total depth of well
Le =	8.80	ft	268.2	cm	Length of screen (Le = Lw if SWL is within screen interval)
H =	21.65	ft	659.9	cm	Saturated aquifer thickness
Rw =	0.34	ft	10.4	cm	Radial distance between undisturbed aquifer and well center
Rc =	0.08	ft	2.5	cm	Actual casing inside radius
n =	0.20		0.20		Porosity of sand pack (n = "0" if SWL above screen interval)
Rc.t =	0.17	ft	5.2	cm	Theoretical casing radius (if SWL is within screen interval)
Lw =	8.80	ft	268.2	cm	Total depth of water in well
Le/Rw =	25.9		25.9		Function of dimensionless coefficients
A =	2.3		2.3		Dimensionless coefficient
B =	0.4		0.4		Dimensionless coefficient
C =	1.9		1.9		Dimensionless coefficient

If Lw < H	Ln(Re/Rw) =	2.090	K = 1.08E-03	cm/sec	K = 2.13E-03 ft/min
If Lw = H	Ln(Re/Rw) =	2.438	K = 1.26E-03	cm/sec	K = 2.49E-03 ft/min

HYDRAULIC CONDUCTIVITY = 1.08E-03 cm/sec

COMMENTS:

HYDRAULIC CONDUCTIVITY CALCULATION

Clark Refining & Marketing, Inc.
Station #646
PROJECT NUMBER C01-7-0011
MW-4
SLUG-OUT

BOUWER AND RICE METHOD
(1976, 1989)

VARIABLES

H =	659.9	cm	Saturated Aquifer Thickness
Rc =	2.5	cm	Radius of Well Casing
Rw =	10.4	cm	Radius of Well and Sand Pack
Le =	268.2	cm	Screen Length
Lw =	268.2	cm	Depth of Water to Bottom of Casing
Yo =	27.7	cm	Graph Variable
Yt =	2.3	cm	Graph Variable
t =	240	sec	Graph Variable
A =	2.3		Interpreted Constant
B =	0.4		Interpreted Constant

HYDRAULIC CONDUCTIVITY = 1.08E-03 cm/sec

Assumption: Saturated aquifer thickness measurement for hydraulic conductivity calculation is estimated at 30 feet below ground surface. Data taken from soil boring MW-8.

HYDRAULIC CONDUCTIVITY (BOUWER AND RICE METHOD)

Project No: C01-7-0011
Project Name: Clark Refining & Marketing, Inc.
Location: Station #646

Well No: MW-6
Slug-in/Slug-out: SLUG-OUT
Test Date: 9/24/97
Test By: DPO

Analyzed By: DPO
Analysis Date: 9/24/97

Data Checked By: PCO
Check Date: 11-17-97

Analysis Checked By: _____
Check Date: _____

Variable	Eng. Unit		S.I. Unit		Description
Yo =	0.670	ft	20.4	cm	Drawdown at time "0"
Yt =	0.022	ft	0.7	cm	Drawdown at time "t"
t =	1.00	min	60	sec	Time
SWL =	7.52	ft	229.2	cm	Static water level before slug test
TD =	14.68	ft	447.5	cm	Total depth of well
Le =	7.16	ft	218.2	cm	Length of sceen (Le=Lw if SWL is within screen interval)
H =	22.48	ft	685.2	cm	Saturated aquifer thickness
Rw =	0.34	ft	10.4	cm	Radial distance between undisturbed aquifer and well center
Rc =	0.08	ft	2.5	cm	Actual casing inside radius
n =	0.20		0.20		Porosity of sand pack (n = "0" if SWL above screen interval)
Rc.t =	0.17	ft	5.2	cm	Theoretical casing radius (if SWL is within screen interval)
Lw =	7.16	ft	218.2	cm	Total depth of water in well
Le/Rw =	21.1		21.1		Function of dimensionless coefficients
A =	2.2		2.2		Dimensionless coefficient
B =	0.3		0.3		Dimensionless coefficient
C =	1.7		1.7		Dimensionless coefficient

If Lw<H	Ln(Re/Rw) =	1.906	K = 6.61E-03	cm/sec	K = 1.30E-02 ft/min
If Lw=H	Ln(Re/Rw) =	2.267	K = 7.87E-03	cm/sec	K = 1.55E-02 ft/min

HYDRAULIC CONDUCTIVITY = 6.61E-03 cm/sec

COMMENTS:

HYDRAULIC CONDUCTIVITY CALCULATION

Clark Refining & Marketing, Inc.

Station #646

PROJECT NUMBER C01-7-0011

MW-8

SLUG-OUT

BOUWER AND RICE METHOD

(1976, 1989)

VARIABLES

H =	685.2	cm	Saturated Aquifer Thickness
Rc =	2.5	cm	Radius of Well Casing
Rw =	10.4	cm	Radius of Well and Sand Pack
Le =	218.2	cm	Screen Length
Lw =	218.2	cm	Depth of Water to Bottom of Casing
Yo =	20.4	cm	Graph Variable
Yt =	0.7	cm	Graph Variable
t =	60	sec	Graph Variable
A =	2.2		Interpreted Constant
B =	0.3		Interpreted Constant

HYDRAULIC CONDUCTIVITY = 6.61E-03 cm/sec

Assumption: Saturated aquifer thickness measurement for hydraulic conductivity calculation is estimated at 30 feet below ground surface. Data taken from soil boring MW-8.

HYDRAULIC CONDUCTIVITY (BOUWER AND RICE METHOD)

Project No: C01-7-0011
Project Name: Clark Refining & Marketing, Inc.
Location: Station #646

Well No: MW-14
Slug-in/Slug-out: SLUG-OUT
Test Date: 9/24/97
Test By: DPO

Analyzed By: DPO
Analysis Date: 9/24/97

Data Checked By: PLD
Check Date: 11-13-97

Analysis Checked By: _____
Check Date: _____

Variable	Eng. Unit		S.I. Unit		Description
Yo =	1.500	ft	45.7	cm	Drawdown at time "0"
Yt =	1.050	ft	32.0	cm	Drawdown at time "t"
t =	3.00	min	180	sec	Time
SWL =	0.53	ft	16.2	cm	Static water level before slug test
TD =	23.24	ft	708.4	cm	Total depth of well
Le =	4.80	ft	146.3	cm	Length of screen (Le=Lw if SWL is within screen interval)
H =	56.00	ft	1706.9	cm	Saturated aquifer thickness
Rw =	0.38	ft	11.4	cm	Radial distance between undisturbed aquifer and well center
Rc =	0.08	ft	2.5	cm	Actual casing inside radius
n =	0.00		0.00		Porosity of sand pack (n = "0" if SWL above screen interval)
Rc.t =	0.08	ft	2.5	cm	Theoretical casing radius (if SWL is within screen interval)
Lw =	22.71	ft	692.2	cm	Total depth of water in well
Le/Rw =	12.8		12.8		Function of dimensionless coefficients
A =	1.9		1.9		Dimensionless coefficient
B =	0.3		0.3		Dimensionless coefficient
C =	1.4		1.4		Dimensionless coefficient

If Lw<H Ln(Re/Rw) = 1.930 K = 8.37E-05 cm/sec K = 1.65E-04 ft/min

If Lw=H Ln(Re/Rw) = 2.665 K = 1.15E-04 cm/sec K = 2.27E-04 ft/min

HYDRAULIC CONDUCTIVITY = 8.37E-05 cm/sec

COMMENTS:

HYDRAULIC CONDUCTIVITY CALCULATION

Clark Refining & Marketing, Inc.

Station #646

PROJECT NUMBER C01-7-0011

MW-14

SLUG-OUT

BOUWER AND RICE METHOD

(1976, 1989)

VARIABLES

H =	1706.9	cm	Saturated Aquifer Thickness
Rc =	2.5	cm	Radius of Well Casing
Rw =	11.4	cm	Radius of Well and Sand Pack
Le =	146.3	cm	Screen Length
Lw =	692.2	cm	Depth of Water to Bottom of Casing
Yo =	45.7	cm	Graph Variable
Yt =	32.0	cm	Graph Variable
t =	180	sec	Graph Variable
A =	1.9		Interpreted Constant
B =	0.3		Interpreted Constant

HYDRAULIC CONDUCTIVITY = 8.37E-05 cm/sec

Assumption: Saturated aquifer thickness measurement for hydraulic conductivity calculation is estimated at 33 feet below ground surface. Data taken from well log for Osage Park monitoring well, Wauconda, IL.

HYDRAULIC CONDUCTIVITY (BOUWER AND RICE METHOD)

Project No: C01-7-0011
Project Name: Clark Refining & Marketing, Inc.
Location: Station #646

Well No: MW-16
Slug-in/Slug-out: SLUG-OUT
Test Date: 9/24/97
Test By: DPO

Analyzed By: DPO
Analysis Date: 9/24/97

Data Checked By: DPO
Check Date: 11-13-97

Analysis Checked By: _____
Check Date: _____

Variable	Eng. Unit		S.I. Unit		Description
Yo =	1.200	ft	36.6	cm	Drawdown at time "0"
Yt =	0.600	ft	18.3	cm	Drawdown at time "t"
t =	22.00	min	1320	sec	Time
SWL =	5.86	ft	178.6	cm	Static water level before slug test
TD =	22.86	ft	696.8	cm	Total depth of well
Le =	4.80	ft	146.3	cm	Length of screen (Le=Lw if SWL is within screen interval)
H =	27.14	ft	827.2	cm	Saturated aquifer thickness
Rw =	0.38	ft	11.4	cm	Radial distance between undisturbed aquifer and well center
Rc =	0.08	ft	2.5	cm	Actual casing inside radius
n =	0.00		0.00		Porosity of sand pack (n = "0" if SWL above screen interval)
Rc.t =	0.08	ft	2.5	cm	Theoretical casing radius (if SWL is within screen interval)
Lw =	17.00	ft	518.2	cm	Total depth of water in well
Le/Rw =	12.8		12.8		Function of dimensionless coefficients
A =	1.9		1.9		Dimensionless coefficient
B =	0.3		0.3		Dimensionless coefficient
C =	1.4		1.4		Dimensionless coefficient

If Lw<H	Ln(Re/Rw) =	1.955	K = 2.25E-05	cm/sec	K = 4.42E-05 ft/min
If Lw=H	Ln(Re/Rw) =	2.528	K = 2.90E-05	cm/sec	K = 5.71E-05 ft/min

HYDRAULIC CONDUCTIVITY = 2.25E-05 cm/sec

COMMENTS:

HYDRAULIC CONDUCTIVITY CALCULATION

Clark Refining & Marketing, Inc.

Station #646

PROJECT NUMBER C01-7-0011

MW-16

SLUG-OUT

BOUWER AND RICE METHOD

(1976, 1989)

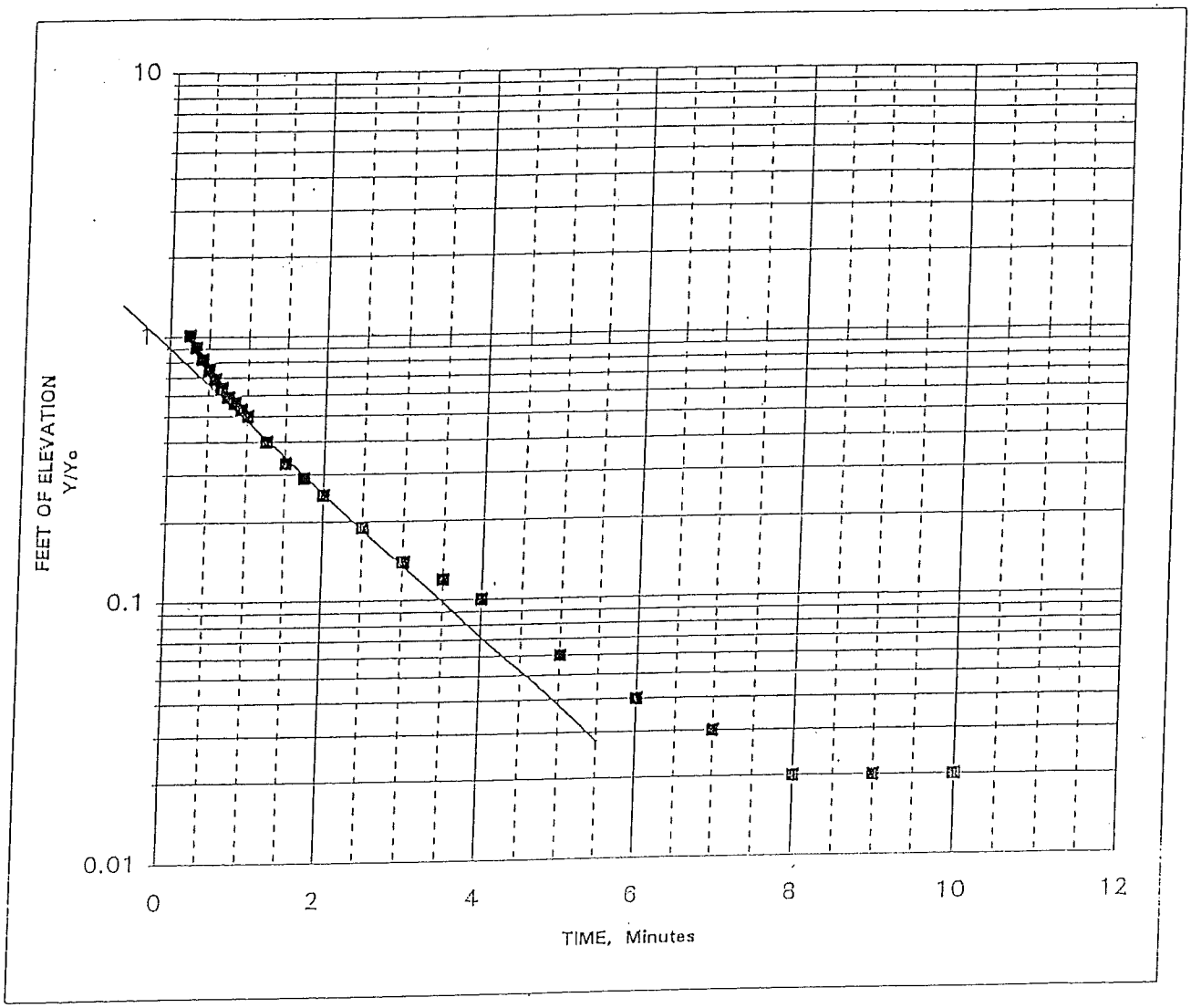
VARIABLES

H =	827.2	cm	Saturated Aquifer Thickness
Rc =	2.5	cm	Radius of Well Casing
Rw =	11.4	cm	Radius of Well and Sand Pack
Le =	146.3	cm	Screen Length
Lw =	518.2	cm	Depth of Water to Bottom of Casing
Yo =	36.6	cm	Graph Variable
Yt =	18.3	cm	Graph Variable
t =	1320	sec	Graph Variable
A =	1.9		Interpreted Constant
B =	0.3		Interpreted Constant

HYDRAULIC CONDUCTIVITY = 2.25E-05 cm/sec

Assumption: Saturated aquifer thickness measurement for hydraulic conductivity calculation is estimated at 33 feet below ground surface. Data taken from well log for Osage Park monitoring well, Wauconda, IL.

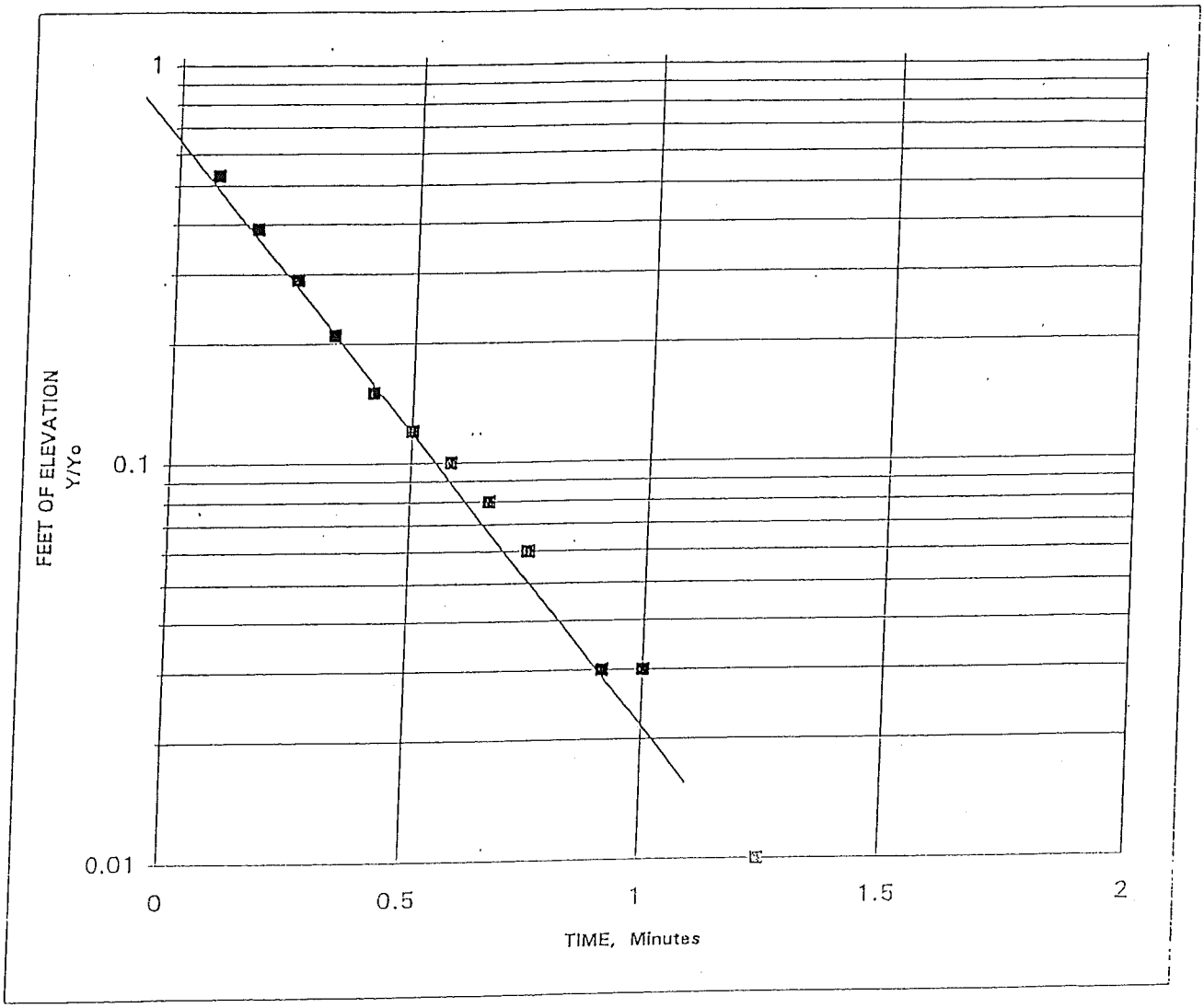
Figure 4: SLUG TEST DATA
Well MW-4
Slug Out



Time	Y
0	0.91
4	0.074

Prepared/Date:____/_____

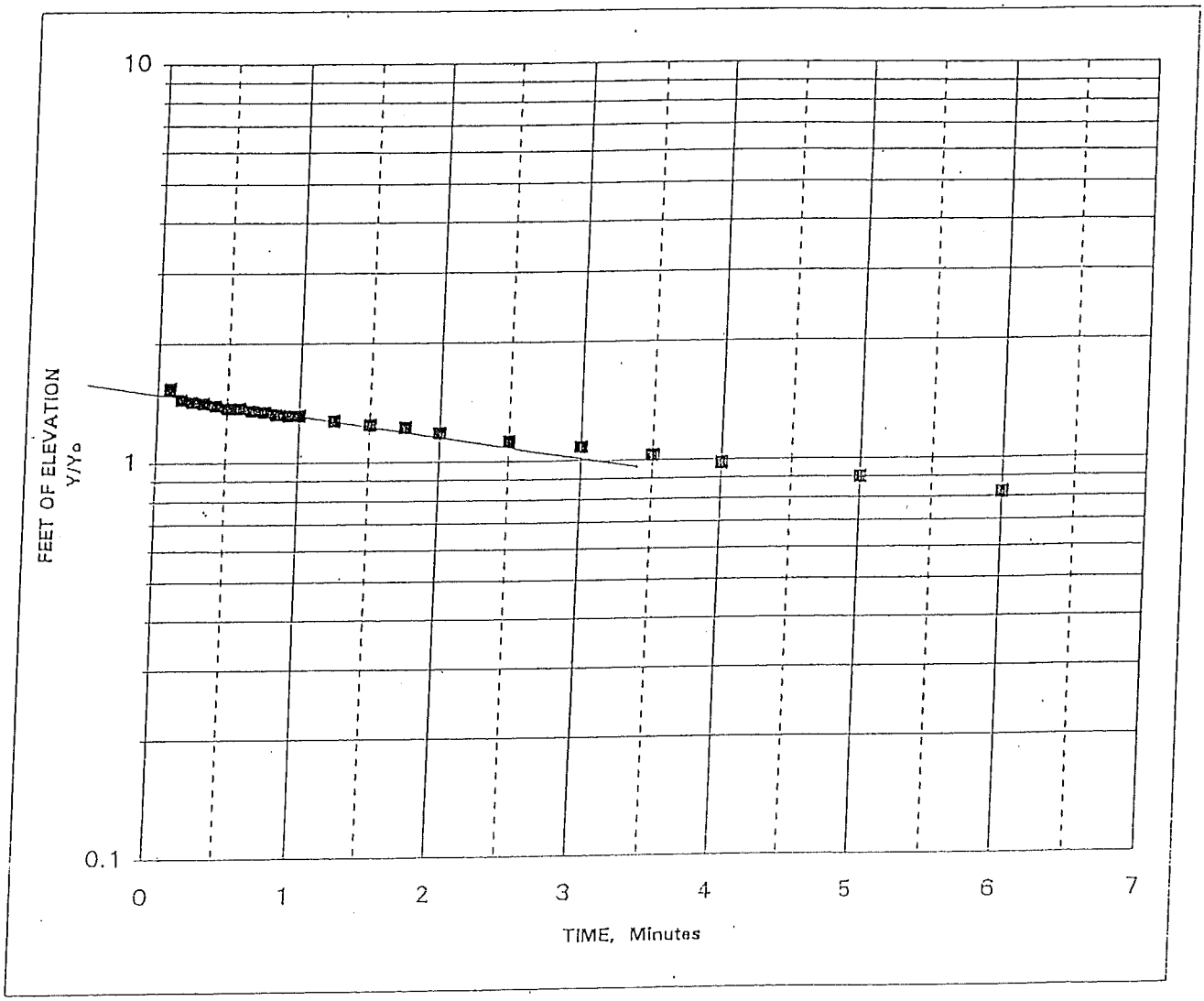
Figure 4: SLUG TEST DATA
Well MW-6
Slug Out



Time	Y
0	0.67
1	0.022

Prepared/Date:____/_____

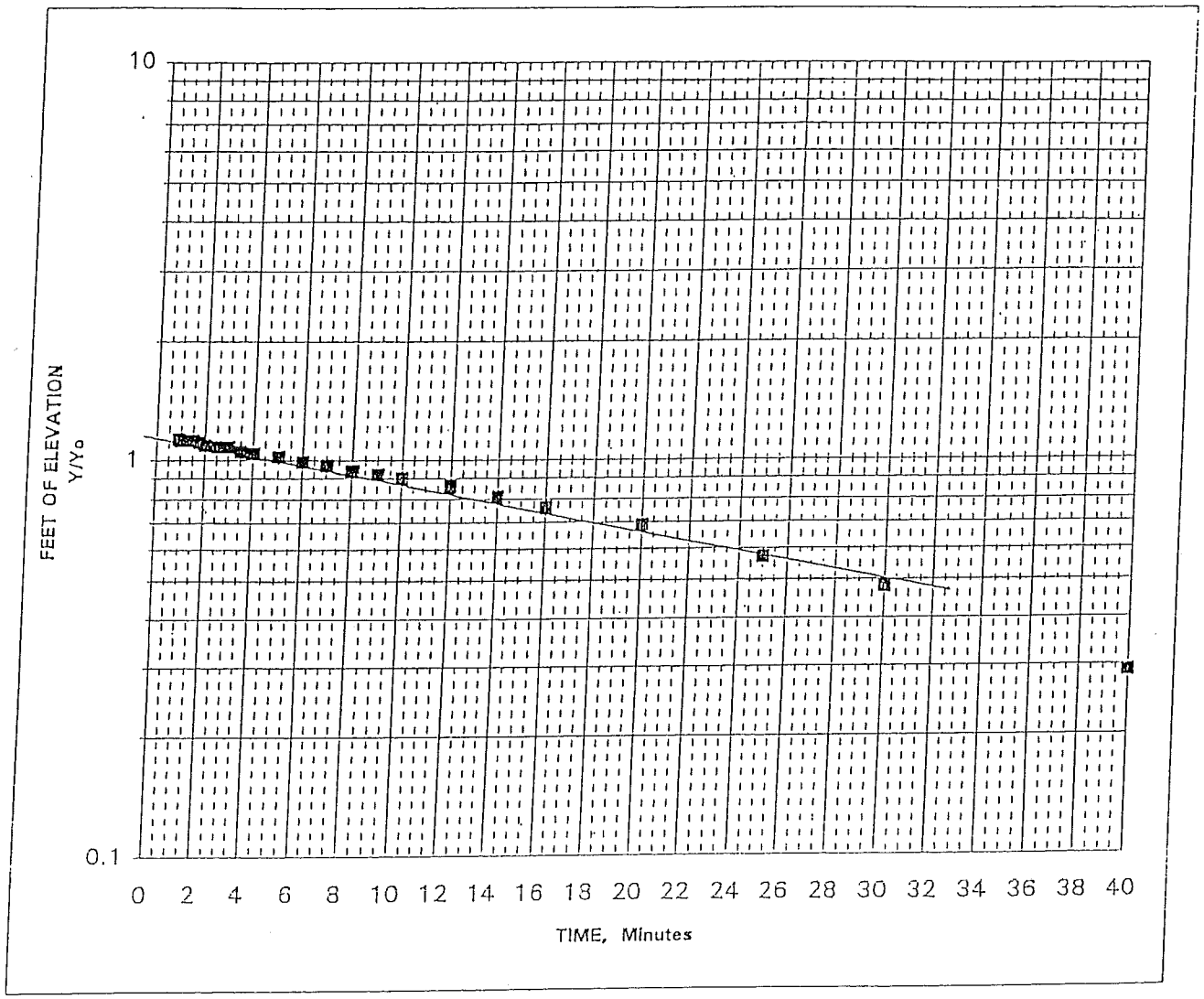
Figure 4: SLUG TEST DATA
Well MW-14
Slug Out



Time	Y
0	1.5
3	1.05

Prepared/Date:____/_____

Figure 4: SLUG TEST DATA
Well MW-16
Slug Out



Time	Y
0	1.2
22	0.6

Prepared/Date:____/_____

ATTACHMENT B

AIR STRIPPER SPECIFICATIONS

ShallowTray®
low profile air strippers

System Performance Estimate

Client and Proposal Information:

TriCore Enironmental
Shivam energy

Series chosen:	2300-P
Water Flow Rate:	20.0 GPM US
Air Flow Rate:	300 CFM
Water Temp:	50 °F
Air Temp:	50 °F
A/W Ratio:	112 :1
Safety Factor:	0%
Water Discharge Temp.	50.0 °F

Contaminant	Untreated Influent / Effluent Target	Model P 2311 Effluent Lbs/hr ppmv %removal	Model P 2321 Effluent Lbs/hr ppmv %removal	SELECTED MODEL Model P 2331 Effluent Lbs/hr ppmv %removal	Model P 2341 Effluent Lbs/hr ppmv %removal	Model P 2351 Effluent Lbs/hr ppmv %removal
						Induced Draft
Benzene Solubility 1,780 ppm Mwt 78.12 71-43-2	764 ppb 5 ppb	85 ppb 0.01 1.84 88.83%	10 ppb 0.01 2.04 98.75%	1 ppb 0.01 2.06 99.86%	<1 ppb 0.01 2.07 99.98%	<1 ppb 0.01 2.07 100.00%
Toluene Solubility 515 ppm Mwt 92.13 108-88-3	650 ppb 1000 ppb	82 ppb 0.01 1.30 87.40%	10 ppb 0.01 1.47 98.41%	1 ppb 0.01 1.49 99.80%	<1 ppb 0.01 1.49 99.97%	<1 ppb 0.01 1.49 100.00%
Ethyl Benzene Solubility 152 ppm Mwt 106.16 100-41-4	150 ppb 700 ppb	15 ppb 0.00 0.27 89.90%	2 ppb 0.00 0.30 98.98%	<1 ppb 0.00 0.30 99.90%	<1 ppb 0.00 0.30 99.99%	<1 ppb 0.00 0.30 100.00%
Xylenes Solubility 175 ppm Mwt 106 1330-20-7	1200 ppb 10000 ppb	131 ppb 0.01 2.13 89.12%	14 ppb 0.01 2.36 98.82%	2 ppb 0.01 2.39 99.87%	<1 ppb 0.01 2.39 99.99%	<1 ppb 0.01 2.39 100.00%
MTBE Solubility 43,000 ppm Mwt 88.15 1634-04-4	24 ppb 70 ppb	13 ppb 0.00 0.03 46.02%	7 ppb 0.00 0.04 70.86%	4 ppb 0.00 0.05 84.27%	2 ppb 0.00 0.05 91.51%	1 ppb 0.00 0.05 95.42%
Total ppb	2788 ppb	326 ppb	43 ppb	8 ppb	3 ppb	1 ppb
Total VOC Lbs/hr - ppmv		0.02 5.57	0.03 6.21	0.03 6.29	0.03 6.30	0.03 6.30
Total		88.31%	98.47%	99.72%	99.91%	99.96%

Report Generated: 5/7/2009

Modeler VIMP Jan09

ATTACHMENT C

AMENDED CORRECTIVE ACTION BUDGET

General Information for the Budget and Billing Forms

LPC #: 0971855024 County: Lake

City: Wauconda Site Name: Shivam Energy, Inc.

Site Address: 399 West Liberty Street

IEMA Incident No.: 892744 903199 _____ _____

IEMA Notification Date: Dec 27, 1989 Oct 30, 1990 _____ _____

Date this form was prepared: Mar 29, 2010

This form is being submitted as a (check one, if applicable):

- ☐ Budget Proposal
- ☒ Budget Amendment (Budget amendments must include only the costs over the previous budget.)
- ☐ Billing Package

Please provide the name(s) and date(s) of report(s) documenting the costs requested:

Name(s): _____ _____ _____

Date(s): _____ _____ _____

This package is being submitted for the site activities indicated below:

35 Ill. Adm. Code 734:

- ☐ Early Action
- ☐ Free Product Removal after Early Action
- ☐ Site Investigation . . . . . Stage 1: ☐ Stage 2: ☐ Stage 3: ☐
- ☒ Corrective Action Actual Costs

35 Ill. Adm. Code 732:

- ☐ Early Action
- ☐ Free Product Removal after Early Action
- ☐ Site Classification
- ☐ Low Priority Corrective Action
- ☐ High Priority Corrective Action

35 Ill. Adm. Code 731:

- ☐ Site Investigation
- ☐ Corrective Action

General Information for the Budget and Billing Forms

The following address will be used as the mailing address for checks and any final determination letters regarding payment from the Fund.

Pay to the order of: Shivam Energy, Inc.

Send in care of: Mr. Shawn Rodeck

Address: P.O. Box 825

City: Warrenville State: Illinois Zip: 60555-0825

The payee is the: Owner ☒ Operator ☒ (Check one or both.)

Rajani Patel

Signature of the owner or operator of the UST(s) (required)

If you have a change of address, click here to print off a W-9 Form.

Number of petroleum USTs in Illinois presently owned or operated by the owner or operator; any subsidiary, parent or joint stock company of the owner or operator; and any company owned by any parent, subsidiary or joint stock company of the owner or operator:

Fewer than 101: ☒ 101 or more: ☐

Number of USTs at the site: 4 (Number of USTs includes USTs presently at the site and USTs that have been removed.)

Number of incidents reported to IEMA for this site: 3

Incident Numbers assigned to the site due to releases from USTs: 892744 903199

Please list all tanks that have ever been located at the site and tanks that are presently located at the site.

Product Stored in UST	Size (gallons)	Did UST have a release?	Incident No.	Type of Release Tank Leak / Overfill / Piping Leak
Gasoline	6,000	Yes ☒ No ☐	892744	Tank Leak
(same UST as above)	6,000	Yes ☒ No ☐	903199	Tank Leak
Gasoline	6,000	Yes ☒ No ☐	892744	Tank Leak
(same UST as above)	6,000	Yes ☒ No ☐	903199	Tank Leak
Gasoline	10,000	Yes ☐ No ☒	NA	
Gasoline	10,000	Yes ☐ No ☒	NA	
		Yes ☐ No ☐		
		Yes ☐ No ☐		
		Yes ☐ No ☐		

Add More Rows Undo Last Add

IEMA Nos. 892744
903199

B. PROPOSED BUDGET SUMMARY AND BUDGET TOTAL

1. Investigation Costs: $ 0.00
2. Analysis Costs: $ 0.00
3. Personnel Costs: $ 3,314.72
4. Equipment Costs: $ 105.00
5. Field Purchases and Other Costs: $ 4,905.50
6. Handling Charges: $ 588.66

TOTAL PROPOSED BUDGET = $ 8,913.88

IEMA Nos. 892744
903199

E. INVESTIGATION COSTS

Method I ☐ Method II ☐ Method III ☐ Not Applicable ☑

1. **Drilling Costs** - This includes the costs for drilling labor, drill rig usage, and other drilling equipment. Borings which are to be completed as monitoring wells should be listed here. Costs associated with disposal of cuttings should not be included here. An indication must be made as to why each boring is being conducted (i.e., classification, monitoring wells, migration pathways).

_____ borings to _____ feet = _____ feet to be bored for _____
_____ borings to _____ feet = _____ feet to be bored for _____
_____ borings to _____ feet = _____ feet to be bored for _____
_____ borings to _____ feet = _____ feet to be bored for _____
_____ borings to _____ feet = _____ feet to be bored for _____
_____ borings to _____ feet = _____ feet to be bored for _____
_____ borings to _____ feet = _____ feet to be bored for _____
_____ borings to _____ feet = _____ feet to be bored for _____
_____ borings to _____ feet = _____ feet to be bored for _____
_____ borings to _____ feet = _____ feet to be bored for _____

Total Feet to be Bored via Hand Auger: _____
Total Feet to be Bored via Push for In-Situ Remediation Evaluations: _____
Total Feet to be Bored via Push for Recovery Wells: _____
Total Feet to be Bored via Push for Groundwater Evaluation Wells: _____
Total Feet to be Bored via Push for Soil Resampling: _____

Push Events for In-situ Remediation Evaluation: _____ events x $ _____ per event =$ _____
HSA Events for the Recovery Wells: _____ events x $ _____ per event =$ _____
Push Events for the Groundwater Evaluation Wells: _____ events x $ _____ per event =$ _____
Total Feet to be Bored via Push for Soil Resampling: _____ feet x $ _____ per foot =$ _____

_____ borings through _____ ft of bedrock = _____ Ft bedrock to be bored
_____ borings through _____ ft of bedrock = _____ Ft bedrock to be bored

Total Feet Bedrock to be Bored: _____

Borings: _____ Ft bedrock x $ _____ per foot bedrock = $ _____ (or)

_____ Hours x $ _____ per Hour = $ _____

_____ # of Mobilizations @ $ _____ per mobilization = $ _____

Other Costs	Number of Units	Unit Cost	Total Cost

2. **Professional Services (e.g., P.E., geologist)** - These cost must be listed in Section G, the Personnel section of the forms.

3. Monitoring Well Installation Materials - Costs listed here must be costs associated with well casing, well screens, filter pack, annular seal, surface seal, well covers, etc. List the items below in a time and materials format.

Materials	Number of Units	Unit Cost	Total Cost

4. Disposal Costs - This includes the costs for disposing of boring cuttings and any water generated while performing borings of installing wells.

Disposal of Cuttings: _____ drums x $_____ per drum = $ _____

Disposal of Water: _____ drums x $_____ per drum = $ _____

Transportation Costs:$ _____

Describe how the water/soil will be disposed: _____

TOTAL INVESTIGATION COSTS = $ 0.00

F. ANALYSIS COSTS

1. Physical Soil Analysis - This must only include ***analysis*** costs for classification of soil types at the site.

_____ Moisture Content sample(s) x $ _____ per sample = $ _____

_____ Dry Bulk Density sample(s) x $ _____ per sample = $ _____
Indicate method to be performed: _____

_____ Soil Porosity sample(s) x $ _____ per sample = $ _____
Indicate method to be performed: _____

_____ Soil Classification sample(s)
x $ _____ per sample = $ _____
Indicate method to be performed: _____

_____ Grain Size sample(s)
x $ _____ per sample = $ _____
Indicate method to be performed: _____

_____ Natural Organic Carbon Fraction (f_{oc}) sample(s)
x $ _____ per sample = $ _____
Indicate method to be performed: _____

_____ sample(s) x $ _____ per sample = $ _____
_____ sample(s) x $ _____ per sample = $ _____
_____ sample(s) x $ _____ per sample = $ _____
_____ sample(s) x $ _____ per sample = $ _____
_____ sample(s) x $ _____ per sample = $ _____

2. Soil Analysis Costs - This must be for laboratory ***analysis*** only.

_____ BTEX and MTBE sample(s) x $ _____ per sample = $ _____

_____ TPH sample(s) x $ _____ per sample = $ _____

_____ RCRA Metals sample(s) x $ _____ per sample = $ _____

_____ RCRA Metals sample(s) prep x $ _____ per sample = $ _____

_____ COD sample(s) x $ _____ per sample = $ _____

_____ Flashpoint sample(s) _____ per sample = $ _____

_____ pH sample(s) x $ _____ per sample = $ _____

_____	TCLP Lead sample(s)	x	$ _____	per sample	=	$	_____
_____	TCLP Lead sample(s) prep	x	$ _____	per sample	=	$	_____
_____	Paint filter sample(s)	x	$ _____	per sample	=	$	_____
_____	sample(s)	x	$ _____	per sample	=	$	_____
_____	sample(s)	x	$ _____	per sample	=	$	_____
_____	sample(s)	x	$ _____	per sample	=	$	_____
_____	sample(s)	x	$ _____	per sample	=	$	_____
_____	sample(s)	x	$ _____	per sample	=	$	_____

3. Groundwater Analysis Costs - This must be for laboratory ***analysis*** only.

_____	BTEX and MTBE sample(s)	x	$ _____	per sample	=	$	_____
_____	TPH sample(s)	x	$ _____	per sample	=	$	_____
_____	COD sample(s)	x	$ _____	per sample	=	$	_____
_____	RCRA Metals sample(s)	x	$ _____	per sample	=	$	_____
_____	RCRA Metals sample(s) prep	x	$ _____	per sample	=	$	_____
_____	Flash Point sample(s)	x	$ _____	per sample	=	$	_____
_____	Nitrogen (total) sample(s)	x	$ _____	per sample	=	$	_____
_____	Phosphorus (total) sample(s)	x	$ _____	per sample	=	$	_____
_____	Chloride sample(s)	x	$ _____	per sample	=	$	_____
_____	Alkalinity sample(s)	x	$ _____	per sample	=	$	_____
_____	sample(s)	x	$ _____	per sample	=	$	_____
_____	sample(s)	x	$ _____	per sample	=	$	_____

TOTAL ANALYSIS COSTS = $ 0.00

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G. PERSONNEL

All personnel costs that are not included elsewhere in the budget/billing form must be listed here. Costs must be listed per task, not personnel type. The following are some examples of tasks: Drafting, data collection, plan, report, or budget preparation for CAP (i.e. site classification work plan, 45 day report, or high priority corrective action budget), sampling, field over-site for infiltration gallery installation (i.e. drilling/well installation, corrective action or early action), of maintenance of _____. The above list is not inclusive of all possible tasks.

Project Manager (Title) : 10 hours x $ 100.11 per hour = $ 1,001.10

Task to be performed for the above hours: Amended CAP and Budget, and Class V Injection Well Inventory Form preparation

Senior Professional Engineer (Title) : 2.00 hours x $ 144.60 per hour = $ 289.20

Task to be performed for the above hours: Amended CAP and Budget review and certification; Class V Injection Well Inventory Form review

Senior Administrative Assistant (Title) : 2.00 hours x $ 50.05 per hour = $ 100.10

Task to be performed for the above hours: Amended CAP and Budget, and Class V Injection Well Inventory Form copying, mailing, and filing; correspondence preparation

Project Manager (Title) : 12.00 hours x $ 100.11 per hour = $ 1,201.32

Task to be performed for the above hours: Project management and coordination; oversight of infiltration gallery installation, backfilling, and resurfacing

Senior Technician (Title) : 10.00 hours x $ 72.30 per hour = $ 723.00

Task to be performed for the above hours: Assist with infiltration gallery installation, backfilling, and resurfacing

_____ (Title) : _____ hours x $ _____ per hour = $ _____

Task to be performed for the above hours: _____

_____ (Title) : _____ hours x $ _____ per hour = $ _____

Task to be performed for the above hours: _____

TOTAL PERSONNEL COSTS = $ 3,314.72

H. EQUIPMENT COSTS

All Equipment used must be listed in a time and materials format. **Handling charges should not be added here; use section J.**

Equipment	Own or Rent?	Time Used	Unit Rate	Total Cost/Item
Truck	Own	1	95.00	95.00
Measuring Wheel	Own	1	5.00	5.00
Digital Camera	Own	1	5.00	5.00

Total (Page H-1) :	$105.00

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I. FIELD PURCHASES AND OTHER COSTS

All field purchases must be listed in a time and materials format. **Handling charges must not be added here; use section J, Handling Charges to calculate the handling charges.**

Field Purchases	Quantity	Price/Item	Total Cost	Do Handling Charges Apply?
Amended CAP Shipping	1	$15.00	$15.00	Yes
Class V Injection Well Inventory Form Shipping	1	$10.00	$10.00	Yes

Subtotal Page I-1 :	$25.00

Other costs - A listing and description of all other costs which will be/were incurred and are not specifically listed on this form should be attached. The listing should include a cost breakdown in a time and materials format.

1. Trenching Costs for Infiltration Gallery

A. Trenching, backfilling, and resurfacing

Personnel						
1. Foreman						
1	day	@	$825.00	per day	=	$825.00
2. Senior Technician						
1	day	@	$760.00	per day	=	$760.00
Equipment						
1. Backhoe and Bobcat with Operator						
1	day	@	$1,400.00	per day	=	$1,400.00
2. Plate Compactor						
1	day	@	$75.00	day	=	$75.00
Materials						
1. Perforated Piping						
10	feet	@	$10.00	per foot	=	$100.00
2. Backfill						
23	$yards^3$	@	$22.25	per $yard^3$	=	$511.75
3. 3" Asphalt						
75	$feet^2$	@	$3.85	per $foot^2$	=	$288.75
B. Soil Transportation						
23	$yards^3$	@	$20.00	per $yard^3$	=	$460.00
C. Soil Disposal						
23	$yards^3$	@	$20.00	per $yard^3$	=	$460.00
			Total Trenching Costs for Infiltration Gallery		=	**$4,880.50**

TOTAL OTHER COSTS = $ **4,880.50**

Subtotal Page I-1 :	$ 25.00
Total Pages I-1 and I-2 :	$ 4,905.50

J. HANDLING CHARGES

Handling charges are eligible for payment on subcontractor billings and/or field purchases only if they are equal to or less than the amounts determined by the following table:

Subcontractor or Field **Purchase Cost**	Eligible Handling Charges as a **Percentage of Cost**
$1 - $5,000	12%
$5,001 - $15,000	$600 + 10% of amt. Over $5,000
$15,001 - $50,000	$1,600 + 8% of amt. Over $15,000
$50,001 - $100,000	$4,400 + 5% of amt. Over $50,000
$100,001 - $1,000,000	$6,900 + 2% of amt. Over $100,000

A. Subcontractor Charges

Subcontractor	Section in these Forms where Cost is Listed	Subcontract Amount
Trenching for Infiltration Gallery	I	$4,880.50

Subtotal Page J-1 :	$4,880.50

B. Field Purchase

Field Purchase	Field Purchase Amount
Amended CAP Shipping	$15.00
Class V Injection Well Inventory Form Shipping	$10.00

Subtotal Page J-2 :	$ 25.00
Total Pages J-1 and J-2 :	$ 4,905.50
Handling Charge*	$ 588.66

*Use chart at top of Page J-1 to calculate the allowable handling charge.
Copies of invoices for subcontractor costs and receipts for field purchases are required for billing submissions.

K. LOW PRIORITY CORRECTIVE ACTION

Corrective Action at Low Priority Sites consists of groundwater monitoring for three years.

A. Preparation of the Corrective Action Plan. Attach the appropriate sections of the budget/billing forms to support the summary of costs.

1 Investigation Costs: $ _____

2 Analysis Costs: $ _____

3 Personnel Costs: $ _____

4 Equipment Costs: $ _____

5 Field Purchases and Other Costs: $ _____

6 Handling Charges: $ _____

B. **1st Year Sampling and Analytical Costs (Quarterly Monitoring)** - Provide a summary of the 1st year costs below. Attach the appropriate section of the budget /billing forms to support the summary of costs.

1 Analysis Costs: $ _____

2 Personnel Costs: $ _____

3 Equipment Costs: $ _____

4 Field Purchases and Other Costs: $ _____

5 Handling Charges: $ _____

C. **2nd Year Sampling and Analytical Costs (Semi-Annual Monitoring)** - Provide a summary of the 2nd year costs below. Attach the appropriate section of the budget /billing forms to support the summary of costs.

1 Analysis Costs: $ _____

2 Personnel Costs: $ _____

3 Equipment Costs: $ _____

4 Field Purchases and Other Costs: $ _____

5 Handling Charges: $ _____

D. **3rd Year Sampling and Analytical Costs (Annual Monitoring)** - Provide a summary of the 3rd year costs below. Attach the appropriate section of the budget /billing forms to support the summary of costs.

1 Analysis Costs: $ _____

2 Personnel Costs: $ _____

3 Equipment Costs: $ _____

4 Field Purchases and Other Costs: $ _____

5 Handling Charges: $ _____

TOTAL LOW PRIORITY CORRECTIVE ACTION COSTS: $ 0.00

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L. HIGH PRIORITY CORRECTIVE ACTION

Corrective Action at High Priority Sites may involve both soil and groundwater remediation. Below provide a summary of costs for the remediation type(s) chosen and attach the appropriate sections of the budget/billing forms to support the summary of costs.

A. Preparation of the Corrective Action Plan

1. Investigation Costs: $ 0.00
2. Analysis Costs: $ 0.00
3. Personnel Costs: $ 1,390.40
4. Equipment Costs: $ 0.00
5. Field Purchases and Other Costs: $ 25.00
6. Handling Charges: $ 3.00

B. Groundwater Remediation

1. Analysis Costs: $ _____
2. Personnel Costs: $ _____
3. Equipment Costs: $ _____
4. Field Purchases and Other Costs: $ _____
5. Handling Charges: $ _____

Of the above costs, please provide a break down of the costs associated with operation and maintenance (O&M), if applicable, as requested below:

_____ Months of O&M x $ _____ per month = $ _____

C. Excavation and Disposal

1. Analysis Costs: $ _____
2. Personnel Costs: $ _____
3. Equipment Costs: $ _____
4. Field Purchases and Other Costs: $ _____
5. Handling Charges: $ _____

Of the above costs, please provide a break down of the costs associated with excavation, transportation, and disposal as requested below:

Excavation: _____ $yard^3$ x $ _____ per $yard^3$ = $ _____

Transportation: _____ $yard^3$ x $ _____ per $yard^3$ = $ _____

Disposal: _____ $yard^3$ x $ _____ per $yard^3$ = $ _____

D. Alternate Technology, Type DPE System

1. Investigation Costs: $ 0.00
2. Analysis Costs: $ 0.00
3. Personnel Costs: $ 1,924.32
4. Equipment Costs: $ 105.00
5. Field Purchases and Other Costs: $ 4,880.50
6. Handling Charges: $ 585.66

Of the above costs, please provide a break down of the following costs as requested below if applicable:

Excavation: _____ yard^3 x $ _____ per yard^3 = $ _____

Transportation: _____ yard^3 x $ _____ per yard^3 = $ _____

Treatment: _____ yard^3 x $ _____ per yard^3 = $ _____

Operation and Maintenance (O&M):

_____ Months of O&M x $ _____ per month = $ _____

E. Backfill Costs

1. Personnel Costs: $ _____
2. Equipment Costs: $ _____
3. Field Purchases and Other Costs: $ _____
4. Handling Charges: $ _____

Of the above costs, please provide a break down of the following costs as requested below if applicable:

Type of Backfill: _____

_____ yard^3 x $ _____ per yard^3 = $ _____

M. JUSTIFICATION FOR BUDGET AMENDMENTS

If this form is being submitted for an amendment, you must submit a narrative justifying the need for the amendment. If the amendment includes a revision in a corrective action proposal, a new proposal must be submitted.

This budget amendment includes costs for the following.

1. Preparation, review, certification, and submittal of this Amended CAP and Budget
2. Preparation, review, and submittal of a Class V Injection Well Inventory Form
3. Installation, backfilling, and resurfacing of the infiltration gallery

ATTACHMENT D

OWNER/OPERATOR AND LICENSED PROFESSIONAL ENGINEER/GEOLOGIST BUDGET CERTIFICATION FORM

Owner/Operator and Licensed Professional Engineer/Geologist Budget Certification Form

I hereby certify that I intend to seek payment from the UST Fund for costs incurred while performing corrective action activities for Leaking UST incident 892744 and 903199 . I further certify that the costs set forth in this budget are for necessary activities and are reasonable and accurate to the best of my knowledge and belief. I also certify that the costs included in this budget are not for corrective action in excess of the minimum requirements of 415 ILCS 5/57, no costs are included in this budget that are not described in the corrective action plan, and no costs exceed Subpart H: Maximum Payment Amounts, Appendix D Sample Handling and Analysis amounts, and Appendix E Personnel Titles and Rates of 35 Ill. Adm. Code 732 or 734. I further certify that costs ineligible for payment from the Fund pursuant to 35 Ill. Adm. Code 732.606 or 734.630 are not included in the budget proposal or amendment. Such ineligible costs include but are not limited to:

Costs associated with ineligible tanks.
Costs associated with site restoration (e.g., pump islands, canopies).
Costs associated with utility replacement (e.g., sewers, electrical, telephone, etc.).
Costs incurred prior to IEMA notification.
Costs associated with planned tank pulls.
Legal fees or costs.
Costs incurred prior to July 28, 1989.
Costs associated with installation of new USTs or the repair of existing USTs.

Owner/Operator: Shivam Energy, Inc.

Authorized Representative: Rajani Patel Title: Owner

Signature: Rajani Patel Date: 04/19/2010

Subscribed and sworn to before me the 19 day of April, 2010.

Sandra L. Rodeck (Notary Public) Seal:

OFFICIAL SEAL
SANDRA L. RODECK
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 12-26-2011

In addition, I certify under penalty of law that all activities that are the subject of this plan, budget, or report were conducted under my supervision or were conducted under the supervision of another Licensed Professional Engineer or Licensed Professional Geologist and reviewed by me; that this plan, budget, or report and all attachments were prepared under my supervision; that, to the best of my knowledge and belief, the work described in the plan, budget, or report has been completed in accordance with the Environmental Protection Act [415 ILCS 5], 35 Ill. Adm. Code 732 or 734, and generally accepted standards and practices of my profession; and that the information presented is accurate and complete. I am aware there are significant penalties for submitting false statements or representations to the Illinois EPA, including but not limited to fines, imprisonment, or both as provided in Sections 44 and 57.17 of the Environmental Protection Act [415 ILCS 5/44 and 57.17].

L.P.E./L.P.G.: Shawn Rodeck L.P.E./L.P.G. Seal:

REGISTERED PROFESSIONAL ENGINEER
SHAWN A. RODECK
062-052879

L.P.E./L.P.G. Signature: Shawn Rodeck Date: 04/21/2010

Subscribed and sworn to before me the 21 day of April, 2010.

(Notary Public) Seal:

OFFICIAL SEAL
Kimberly A Henkel
Notary Public, State of Illinois
My Commission Expires 7/8/13

The Illinois EPA is authorized to require this information under 415 ILCS 5/1. Disclosure of this information is required. Failure to do so may result in the delay or denial of any budget or payment requested hereunder.

ATTACHMENT E

OFFICE OF THE STATE FIRE MARSHAL ELIGIBILITY AND DEDUCTIBLE DTERMINATION

Office of the Illinois

State Fire Marshal

"Partnering With the Fire Service to Protect Illinois"

CERTIFIED MAIL - RECEIPT REQUESTED #7008 2810 0000 2103 5320

April 29, 2009

Shivam Energy, Inc.
399 W. Liberty Street
Wauconda, IL 60084

In Re: Facility No. 2-010129
IEMA Incident No. 89-2744
Liberty Clark
399 Liberty Street
Wauconda, Lake Co., IL

Dear Applicant:

The Reimbursement Eligibility and Deductible Application received on April 24, 2009 for the above referenced occurrence has been reviewed. The following determinations have been made based upon this review.

It has been determined that you are eligible to seek payment of costs in excess of **$10,000.** The costs must be in response to the occurrence referenced above and associated with the following tanks:

Eligible Tanks

Tank 1 6,000 gallon Gasoline
Tank 2 6,000 gallon Gasoline

You must contact the Illinois Environmental Protection Agency to receive a packet of Agency billing forms for submitting your request for payment.

An owner or operator is eligible to access the Underground Storage Tank Fund if the eligibility requirements are satisfied:

1. Neither the owner nor the operator is the United States Government,

2. The tank does not contain fuel which is exempt from the Motor Fuel Tax Law,

3. The costs were incurred as a result of a confirmed release of any of the following substances:

   "Fuel", as defined in Section 1.19 of the Motor Fuel Tax Law

   Aviation fuel

   Heating oil

Kerosene

Used oil, which has been refined from crude oil used in a motor vehicle, as defined in Section 1.3 of the Motor Fuel Tax Law.

4. The owner or operator registered the tank and paid all fees in accordance with the statutory and regulatory requirements of the Gasoline Storage Act.

5. The owner or operator notified the Illinois Emergency Management Agency of a confirmed release, the costs were incurred after the notification and the costs were a result of a release of a substance listed in this Section. Costs of corrective action or indemnification incurred before providing that notification shall not be eligible for payment. .

6. The costs have not already been paid to the owner or operator under a private insurance policy, other written agreement, or court order.

7. The costs were associated with "corrective action".

This constitutes the final decision as it relates to your eligibility and deductibility. We reserve the right to change the deductible determination should additional information that would change the determination become available. An underground storage tank owner or operator may appeal the decision to the Illinois Pollution Control Board (Board), pursuant to Section 57.9 (c) (2). An owner or operator who seeks to appeal the decision shall file a petition for a hearing before the Board within 35 days of the date of mailing of the final decision, (35 Illinois Administrative Code 105.102(a) (2)).

For information regarding the filing of an appeal, please contact:

Dorothy Gunn, Clerk
Illinois Pollution Control Board
State of Illinois Center
100 West Randolph, Suite 11-500
Chicago, Illinois 60601
(312) 814-3620

The following tanks are also listed for this site:

Tank 3 10,000 gallon Gasoline
Tank 4 10,000 gallon Gasoline

Your application indicates that there has not been a release from these tanks under this incident number. You may be eligible to seek payment of corrective action costs associated with these tanks if it is determined that there has been a release from one or more of these tanks. Once it is determined that there has been a release from one or more of these tanks you may submit a separate application for an eligibility determination to seek corrective action costs associated with this/these tanks.

If you have any questions, please contact our Office at (217) 785-1020 or (217) 785-5878.

Sincerely,

Deanne Lock
Administrative Assistant
Division of Petroleum and Chemical Safety

cc: IEPA
Facility File