ISOCHEM

GROUPE SNPE

SR

ISOCHEM Inc.
One North Transit Road
Lockport, New York 14094-2399
Phone: 716-433-6764x126
Fax: 716-433-2850
Email: m.barmasse@snpe.com

MEMO: QESS DEPARTMENT

Date: **March 30th , 2007**

To: Mr. Stan Radon
Engineering Geologist II
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, NY 14203

From: Matthew Barmasse – Director of Quality, Environmental, Safety and Security - Ext.:126

RE: Isochem Inc. Lockport Site Voluntary Site Assessment.

Enclosed is the DNAPL Assessment Report prepared by Benchmark Environmental Engineering & Science. At this time we have concluded the voluntary site investigation work.

To confirm that no significant amounts of DNAPL are accumulating in well MW-2D, ISOCHEM Inc. is proposing to perform quarterly evaluation of MW-2D for one year by evacuating the well using the QED bottom-suction pumping system currently installed in the well. This system will be cycled to allow a visual assessment for the presence of DNAPL. Accumulated DNAPL, if present, will be completely recovered from the well during these quarterly events by cycling the pump until DNAPL is no longer observed in the discharge.

We propose to summarize these findings at the conclusion of the fourth quarterly evaluation. At that time if no significant DNAPL is found to be present, we will discontinue any further monitoring or evaluation of the down gradient wells.

We would like the opportunity to discuss the site assessment reports and the proposed path forward with you at your convenience.

Sincerely,

BENCHMARK
ENVIRONMENTAL
ENGINEERING &
SCIENCE, PLLC

March 23, 2007

Mr. Stan Radon
Engineering Geologist II
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, NY 14203

Re: ISOCHEM Inc. – Lockport Facility
DNAPL Assessment Report

Dear Mr. Radon:

Benchmark Environmental Engineering & Science, PLLC (Benchmark) has prepared this letter to present the findings of dense non-aqueous phase liquid (DNAPL) assessment, removal, and monitoring activities performed at the ISOCHEM Inc. Lockport Facility (Site) from January 4, 2007 through March 14, 2007 (see Figure 1).

DNAPL ASSESSMENT

As part of a Supplemental Field Investigation conducted by Benchmark at the ISOCHEM Lockport Facility, DNAPL was encountered at monitoring well MW-2D (see Figure 1). The following time-line summarizes the mitigation and monitoring activities performed at that location:

- On October 26, 2006, as part of a Supplemental Field Investigation of the Site performed on behalf of ISOCHEM, Benchmark redeveloped a well identified as MW-2D that was installed as part of a previous investigation.. During well development activities, accumulated non-aqueous phase liquid (NAPL) consisting of both light (L) and dense (D) phase was observed in well MW-2D. Sample collection and analysis of the groundwater and DNAPL confirmed the presence of dissolved phase as well as non-aqueous phase organics, primarily PAHs. Subsequently, approximately 2 gallons of DNAPL was evacuated from the well during well development and sampling activities on that day.

- From November 20, 2006 through December 1, 2006, a passive collection system consisting of an absorbent sock was installed and monitored regularly within well MW-2D in order to recover the LNAPL fraction of impact. Product recovery rates were small to non-existent and upon further evaluation, the light or "floating" fraction initially identified during well development and sampling was determined to have been most likely created as a result of well re-development activities. Specifically, well development via purge and surge utilized at the location created a

strong surge within the well and is believed to have emulsified the DNAPL within the groundwater leading to the appearance of LNAPL. A representative DNAPL/groundwater mixture was subsequently collected, thoroughly shaken to mimic well development surging, and allowed to settle for several days. Following sufficient settling time, three fractions were apparent: an emulsified floating product layer, the groundwater, and the DNAPL. The field sample was then allowed to stand for approximately two weeks and the floating fraction dissipated eventually leaving only two fractions, groundwater and DNAPL.

- Based upon the emulsified DNAPL results, the focus of the investigation then turned to the DNAPL fraction within well MW-2D. On January 4, 2007, Benchmark personnel installed an active DNAPL recovery system within monitoring well MW-2D. The DNAPL recovery system consisted of a 2-inch diameter QED pneumatic Pulse Pump (Model LP1301). The bottom-suction positive air displacement pump was set on the bottom of the well, approximately 50 feet below ground surface (fbgs) and monitored initially for product recovery rates. Pump refill was adjusted to approximately 8 hours to allow sufficient quantities of DNAPL to accumulate at the bottom of the well, while the discharge time was limited to 35 seconds to prevent unnecessary disturbance (i.e., emulsification). Once recovery frequency was determined, the pump was allowed to fill and discharge recovered product and groundwater into a 55-gallon polyethylene drum with secondary containment commencing on January 5, 2007. On January 22, 2007, the pump discharge line was discovered to be frozen and inoperable; the pump was shut off at that time. To prevent further downtime of the recovery system, the discharge line and drum were placed within a heated shed on January 26, 2007. On February 1, 2007, the system was re-started. On February 22, 2007, the system was checked and discharge effluent monitored for NAPL content. Upon discharge, no NAPL was present in the effluent sample collected. Several more manual discharge operations yielded the same no-NAPL result. On March 14, 2007, the system was monitored and again, no NAPL was present in the effluent discharge. The system was turned off on that day.

DNAPL RECOVERY

Operation of the DNAPL recovery system continued on a 24-hour basis for approximately 55 days recovering approximately 10 gallons of groundwater/DNAPL mixture, with little or no DNAPL recovered over the last 20 days. Upon inspection, approximately 15% of the recovered liquids were determined to be DNAPL (approximately 1.5 gallons), with the remaining volume consisting of recovered groundwater with small globules of emulsified DNAPL. Please refer to Attachment 1 for photographs related to the DNAPL recovery system

SUMMARY & CONCLUSIONS

In total, from well development and product recovery, a total of approximately 3.5 gallons of DNAPL have been recovered from well MW-2D. A majority of the total DNAPL collected (i.e., greater than 50 percent) was recovered during the initial re-development via manual bailing. Observation of the automatic DNAPL recovery system indicated that the remainder of the collected product was recovered during the initial 3 weeks of system operation.

In the final three weeks of monitoring of the DNAPL product recovery system, no product or evidence of residual product (e.g. sheen or emulsified product) was observed in groundwater pumped from the bottom of well MW-2D. Although not conclusive based on the relatively limited duration of the monitoring period, the observations infer that the accumulated DNAPL that was found in the well has been completely purged from the fractured area adjacent to MW-2D. This recovery occurred over the first 20 to 25 days of the recovery period with little or no DNAPL collected over the final 25 to 30 days of system operation. Due to the extremely heterogeneous nature of the fractured bedrock in this formation and based on the above observations, it is difficult to predict the rate and amount of future DNAPL accumulation, if any, that might occur at the MW-2D location.

Please contact us if you have any questions or require additional information.

Sincerely,
Benchmark Environmental Engineering & Science, PLLC

Patrick T. Martin

Patrick Martin, P.E.
Project Manager

Att.
cc: Matthew Barmasse, ISOCHEM
file: 0049-007-100

FIGURES

ATTACHMENT 1 – PHOTO LOG

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.:
Isochem, Inc.	Monitoring well MW-2D	0049-007-100

Photo No.	Date
1	01/05/07

Direction Photo Taken:
Looking south toward south limit of
Site

Description:
Typical surface setup of DNAPL recovery system. Two black tubes are shown; one air line and the other product recovery. Recovered product was stored in the blue drum.

Photo No.	Date
2	01/04/07

Direction Photo Taken:
NA

Description:
2-inch diameter QED pneumatic Pulse Pump (Model LP1301)

Prepared By: BCH

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.:
Isochem, Inc.	Monitoring well MW-2D	0049-007-100

Photo No.	Date
3	01/04/07

Direction Photo Taken:
NA

Description:
Typical early discharge of product recovery system.

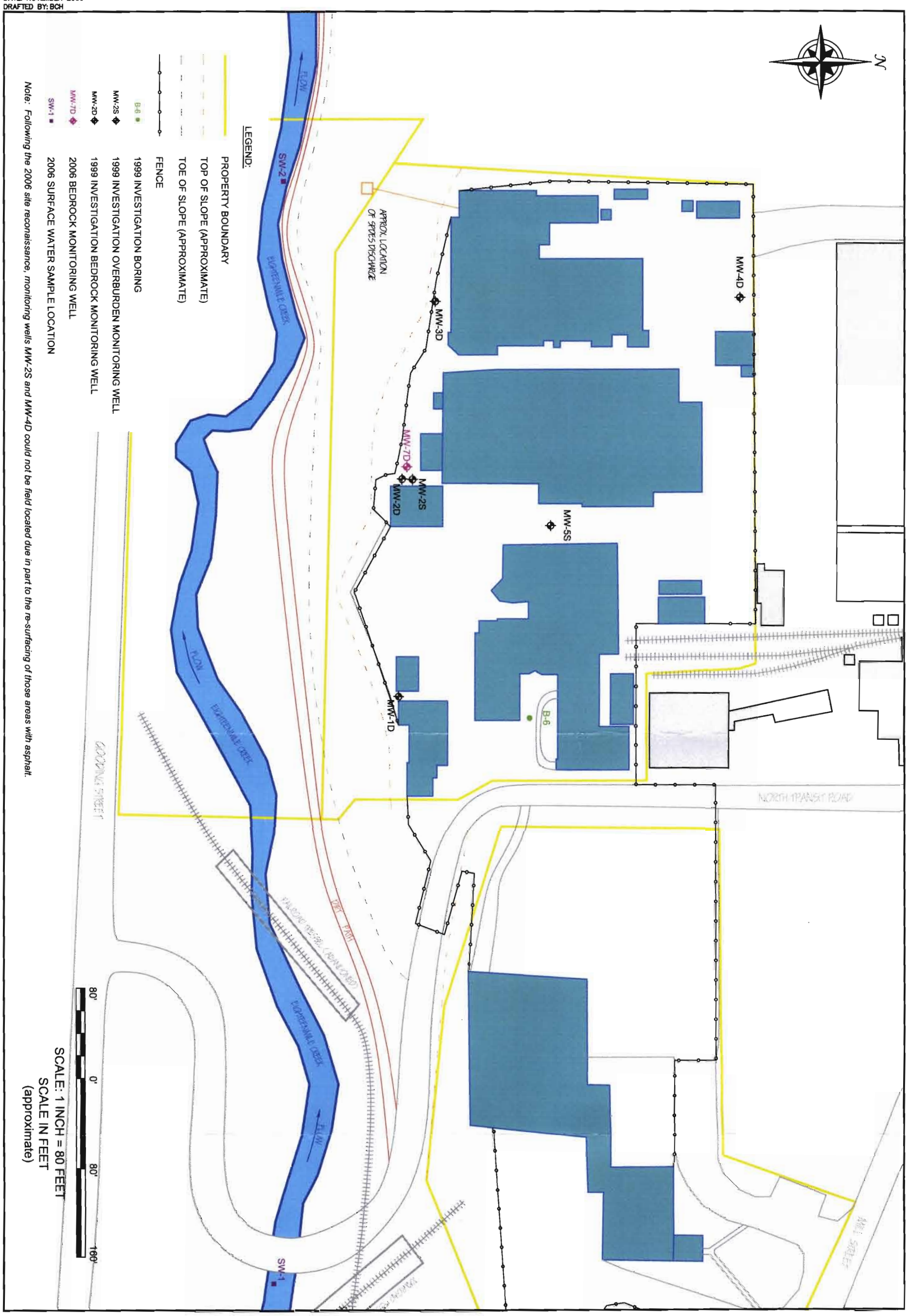
Photo No.	Date
4	03/14/07

Direction Photo Taken:
NA

Description:
Inside of product recovery shed showing general layout of controls and air compressor.

Prepared By: BCH

DATE: NOVEMBER 2006
DRAFTED BY: BCH



Note: Following the 2006 site reconaissance, monitoring wells MW-2S and MW-4D could not be field located due in part to the re-surfacing of those areas with asphalt.

FIGURE 1

SITE PLAN

SUPPLEMENTAL FIELD INVESTIGATION & SAMPLING ACTIVITIES

ISOCHEM LOCKPORT FACILITY
LOCKPORT, NEW YORK

PREPARED FOR
ISOCHEM, INC.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC
726 EXCHANGE STREET
SUITE 624
BUFFALO, NEW YORK 14210
(716) 856-0599

JOB NO.: 0049-007-100