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April 30, 2012

Mr. Jeffrey Dyber, P.E.
Remediation Bureau A
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway - 12th Floor
Albany, NY 12233-7015

Subject: Pall Corporation – Site No. 1-30-053B
30-36 Sea Cliff Avenue, Glen Cove, New York
Dye Test Report

Dear Mr. Dyber:

Camp Dresser & McKee (CDM) is pleased to present this Dye Test letter report for the above-referenced site.

Section 1 – Site Background

The Pall Corporation site occupies 30-36 Sea Cliff Avenue, in Glen Cove, New York. The Site is approximately 4.6 acres in size and is occupied by two industrial buildings. Most of the remainder of the site is paved.

The 30 Sea Cliff Avenue building was constructed in 1918 as an ice house and was occupied by Pall in 1953. The 36 Sea Cliff Avenue building was constructed by Pall in 1953. Pall Corporation used the buildings for the manufacture of filtration products. The building at 36 Sea Cliff Avenue was sold by Pall Corporation to the August Thomsen Corporation in 1971. August Thomsen manufactures pastry bags. Pall occupied the 30 Sea Cliff Avenue building until 1999; it has been unoccupied since then.

A remedial investigation (RI) and RI report of the site was completed in 2000. Soil and groundwater at the site were found to be contaminated with chlorinated solvents tetrachloroethene (PCE), trichloroethene (TCE) and degradation products. In addition, Freon has been found in groundwater at the site. The Pall Corporation is reported to have used PCE, TCE and Freon-113.

A feasibility study report was completed in 2001. A pilot test for in situ chemical oxidation (ISCO) was completed in 2003 using potassium permanganate and a Record of Decision (ROD) including





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ISCO as the selected remedy was issued in 2004. A second pilot test was performed in 2006, using Fenton's Reagent chemistry (hydrogen peroxide). CDM completed a Pre-Design Investigation Report in September 2010.

Objective of Tracer Dye Test

The objective for this test was to assess the potential for groundwater migration from the deep groundwater zone into the intermediate groundwater zone. This was required because deep groundwater upgradient of the Pall site is contaminated with similar solvents and the vertical gradient at the Pall site is upward. Therefore, if the shallow and intermediate zones at the Pall site are remediated prior to the deeper upgradient contamination, upward contaminant migration could result in possible recontamination of the intermediate zone at the Pall site. CDM's assumptions for the tracer test design were based on both direct data collected from the site by CDM and others, and CDM's professional judgment and experience with dye tracer tests.

The focus of the dye tracer test was the deep and intermediate groundwater zones. The intermediate zone occurs from approximately 35 feet to 60 feet belowground surface (bgs). The deep zone is encountered at approximately 80 feet; based upon previous work at the Pall site and vicinity, the stratigraphy is complex and the site-specific thickness of the deep zone is not fully documented. Regional literature indicates that the deep zone is as thick as 100 feet.

The following provides the results of the Pall Corporation dye tracer test. The 26-week schedule for the test was completed with the analysis of samples collected on May 19, 2011. The test was extended to September 22, 2011 because Eosine, which had been injected at the upgradient edge of the site, had not yet been detected. Samples were collected on July 14, 2011, August 18, 2011 and September 22, 2011 for a total of 42-weeks

Section 2 –Background and Interference Analysis

Background Analysis

Charcoal receptors were installed in each well to be involved in the dye tracer study on September 30, 2010 and collected on October 18, 2010. These samples were analyzed to establish a background concentration in the groundwater at each location of the two dyes injected. During the dye tracer test, the presence of dye at a given sample location (i.e. a positive trace) is confirmed after two consecutive lab detections that are each at least 10 times the background concentration. If the concentration of dye in a well was non-detect during the background testing, a positive trace is confirmed by two consecutive detections of at least 10 times the lab detection limit. Lab results less than the 10 times factor are noted as "background". In some cases, a value is reported as "no peak identified", which is considered non-detect.

No background sample was collected for MW-1PI because this well was not originally included as part of the dye tracer test. Due to the lack of confirmed Eosine traces as late as July 2011, MW-1PI



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was added to the sampling program as a check for westerly movement of Eosine in the intermediate zone.

Interference analysis

During collection of the background samples, groundwater samples were also collected from MW-4PD and MW-12PI for matrix interference testing. This testing showed that the proposed dyes to be used, fluorescein and Eosine, did not degrade over time in the groundwater and that there were no significant interference problems that would preclude the use of fluorescein and Eosine, although Eosine eluted from the site groundwater at about half the concentration as the distilled water elution.

Section 3 –Dye Injection, Sampling and Analysis

Dye Injection

Dye was injected at the two locations, MW-4PD and MW-6PD, on November 16 and 17, 2010. Fifteen pounds of fluorescein was injected into MW-4PD followed by 325 gallons of clean water. Thirty-five pounds of Eosine was injected into MW-6PD followed by 325 gallons of clean water. In addition, the well head injection pressure was maintained at 10 pounds per square inch (psi) or below. This maximum injection pressure of 10 psi would minimize the potential for artificially forcing the dye into the intermediate zone while ensuring it is entrained in the ambient aquifer flow regime. Different dyes were injected into each well so that the origination point of each downgradient dye detection would be known, allowing better evaluation of flow paths. Thirteen intermediate monitoring wells were monitored for dye (MW-2AI, MW-4PI, MW-5PI, MW-6PI, MW-8PI, MW-10PI, MW-11PI, MW-12PI, MW-13PI, MW-17PI, MW-18PI, MW-19PI, and MW-1PI, which was added late in the test as discussed above). In order to monitor the progress of the dye tracer test, an additional nine deep zone monitoring wells were monitored (MW-1PD, MW-2AD, MW-4PD, MW-5PD, MW-6PD, MW-10PD, MW-11PD, MW-12PD, and MW-13PD).

Monitoring Procedures

Dye test monitoring was performed by collecting both receptor and aqueous grab samples. However, the aqueous grab samples were not analyzed unless the receptor sample analysis had a positive detection for dye. The receptors were supplied by the contract laboratory and consisted of activated charcoal contained in a mesh bag. The sampling assembly consisted of marble packs to provide weight, the receptor, and water sample vial. The entire assembly was attached to a cord that used to lower and remove from the well. The receptor and water sample vial were lowered to a point in the center of the well screen and the cord secured. The assembly was allowed to remain in the well for 3 weeks and retrieved during the next sampling event. A new receptor was then attached to the assembly and lowered back into the well. The samples were placed in Ziploc bags and stored on ice and shipped to the laboratory.



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Dye Sampling and Analysis

Charcoal dye receptors were deployed in monitoring wells downgradient of the dye injection points. At 3-week intervals CDM collected the receptors and deployed new receptors. The collected receptors were shipped to the Crawford Hydrology Laboratory for analysis of the charcoal eluent by spectrofluorophotometer. After May 19, 2011, the residence time for the receptors was increased to five weeks in order to further extend the tracer test duration.

The use of charcoal dye receptors is advantageous over the analysis of aqueous grab samples because it allows for continuous monitoring. This reduces the potential for false negatives, which could occur by dye moving past a monitoring point between sampling events. However, aqueous samples were also collected during each sampling event, and kept on hold for contingency purposes.

Section 4 –Dye Tracer Test Analytical Results

The following discussion pertains to charcoal eluent analysis, unless otherwise specified. Attachment 1 provides the individual sample event results and a summary of all the sample results.

Fluorescein has been confirmed at eight monitoring wells with two or more consecutive detections at greater than 10 times the background level or the detection limit if background was non-detect. The spatial and temporal patterns indicate that fluorescein migrated north-northwesterly with the groundwater gradient in the deep zone, and also entered the intermediate zone in close proximity to the injection location, where it migrated in a similar direction. A summary of the fluorescein detections, moving progressively downgradient (north-northwest) from the injection point is provided:

- The first of two consecutive fluorescein detections at MW-4PI was the sample collected on February 23, 2011; thus fluorescein migrated from the deep zone, where it was injected at MW-4PD, to the intermediate zone in approximately 3 months (the February 7, 2011 sample was non-detect for fluorescein). Fluorescein had moved past MW-4PI by March 16, 2011, as the charcoal receptor deployed between March 16 and April 8, 2011 was non-detect. Note that aqueous samples collected earlier from MW-4PI (December 30, 2010; January 19, 2011 and February 7, 2012) were also analyzed, due to potential low level detections of fluorescein from the carbon samplers that were out of range for the charcoal eluent wavelength. No peak was identified for the December 30, 2010 aqueous sample; the January 19 and February 7, 2012 aqueous samples exhibited very low concentrations at the fluorescein wavelength, which were below the threshold of 10-times the detection limit or background concentration and did not constitute a confirmed trace for these earlier samples.



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- Fluorescein appeared at MW-12PI and MW-12PD, about 150 feet north-northwest of the injection point, in the samples collected on February 23, 2011. Fluorescein had moved past MW-12PI by August 18. Fluorescein had moved past the deep well by July 14, 2011. The fluorescein concentration in the intermediate well was about equal to or greater than those in the deep well.
- Confirmed fluorescein appeared on April 8, 2011 at MW-2AI and MW-2AD, approximately 300 north-northwest of the injection point. Fluorescein moved past these wells by April 27, 2011. The concentrations in the intermediate well were less than those in the deep well (about one-third to three-fourths less), consistent with dilution as the dye moved vertically.

The monitoring well locations along a line just north of the aforementioned wells exhibited fluorescein in the deep zone, MW-5PD, MW-10PD and MW-11PD. Only one of the intermediate wells at these three clusters, MW-11PI, exhibited fluorescein. These wells are aligned more northerly with the injection point. The absence of confirmed fluorescein two of the three clusters along this alignment suggests it is slightly off the groundwater flow path and/or better hydraulic separation exists between the two depth zones in this area.

Moving progressively downgradient from the injection point along this alignment:

- Fluorescein was first confirmed at MW-11PD about 125 feet from the injection point, in the sample collected on March 16, 2011 and had moved past the well by August 18, 2011.
- Fluorescein was first confirmed at MW-11PI on May 19, 2011 and had moved past the well by July 14, 2011.
- Fluorescein was first confirmed at MW-5PD about 200 feet from the injection point, in the sample collected on February 23, and had moved past this well by April 27, 2011.
- Fluorescein was first confirmed at MW-10PD about 240 feet from the injection point, in the sample collected on April 8, and had moved past this well by April 27, 2011.

Previously, a non-confirmed single "hit" of fluorescein was detected at downgradient well MW-2AI in the January 19, 2011 sample, followed by a low detection in February that was less than the 10-times background criteria. This did not constitute a positive dye trace, and CDM was surprised to see fluorescein so soon at MW-2AI, which is the furthest downgradient well from the injection point, because it suggested that the fluorescein was bypassing the other wells. It now appears that the earlier, unconfirmed "hits" should not be considered positive dye traces, and that fluorescein first arrived at MW-2AI in April 2011. Note that the accompanying aqueous samples collected from MW-2AI in December 2010 and January 2011 were analyzed to further evaluate whether there was a confirmed trace at this time. The aqueous sample results were also



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below the 10x background criteria and a positive dye trace was not confirmed by these samples. As noted above, a confirmed fluorescein trace at MW-2AI occurred in April 2011.

Fluorescein has also been confirmed at MW-13PD, beginning on July 14, 2011 and persisting through the last sample event. However, this location is upgradient of the fluorescein injection location. The reported concentrations were low, and a background condition of a substance with a similar wavelength to fluorescein was found in the background sample and most of the previous samples collected at this well. Therefore, it is possible that the fluorescein detected at MW-13D is related to the background substance. Fluorescein is not believed to have migrated from MW-4PD to MW-13PD, and these detections are not shown on the attached figure.

Eosine has been confirmed in only one well aside from where it was injected. This Eosine trace was first detected at MW-6PI on August 18, 2011, nine months after dye injection. The concentration detected on September 22, 2011, the last sample collected, had increased an order of magnitude. MW-6PI is the intermediate well co-located with the deep well in which Eosine was injected. Eosine was not confirmed in any well downgradient of this location. Eosine detections were reported in the final sampling event at MW-8PI and MW-18PI, September 22, 2011, west of Eosine injection well MW-6PD. However, these could not be confirmed as positive traces with a second consecutive detection because no further samples were collected.

Figure 1 provides a summary of the sample detections for each well location.

Section 5 –Summary and Recommendations

Fluorescein was traced downgradient of the injection points in both the deep and intermediate zones. It is possible that fluorescein travelled up to the intermediate zone via artificial conduits associated with the well MW-4PD and then migrated within the intermediate zone. However, this is not believed to be the case based upon the timing of detections downgradient in the intermediate zone, which are similar to the timing of the confirmed trace at MW-4PI.

Eosine was detected in the intermediate zone at the location where it was injected into the deep zone. Though lateral movement was not confirmed, single detections occurred west of the injection well on the final sampling event (MW-8PI and MW-18PI). Since no confirmed detections occurred in the deep zone, and since the single (unconfirmed traces) detections occurred in the intermediate zone several weeks after detection at MW-6PI, it is possible that the eosine short circuited from the deep zone to the intermediate zone via the MW-6PD well bore. However, this cannot be confirmed.

The aggregate data indicate that there is a component of contaminant migration from the deep groundwater zone to the intermediate zone and remediation of the intermediate zone before a remedy is in place for the deep groundwater could result in a recontamination of the



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intermediate zone. This connection between the deep and intermediate groundwater zones was also indicated during the short-term aquifer testing presented in the Pre-Design Sampling Report.

Based on the information gathered during the dye test and pre-design investigation, CDM recommends a coordinated effort on the remedial designs for both the intermediate (OU-1) and deep (OU-2) groundwater units. This coordinated effort would ensure that both OUs were remediated without recontaminating the intermediate zone. A remedy should be in place and operating for deep groundwater at Pall (OU-2) and Photocircuits, and sufficient time passed and data gathered to determine its affect on the intermediate groundwater at Pall (OU-1).

If you have any questions, please do not hesitate to contact me at (518) 782-4500.

Very truly yours,

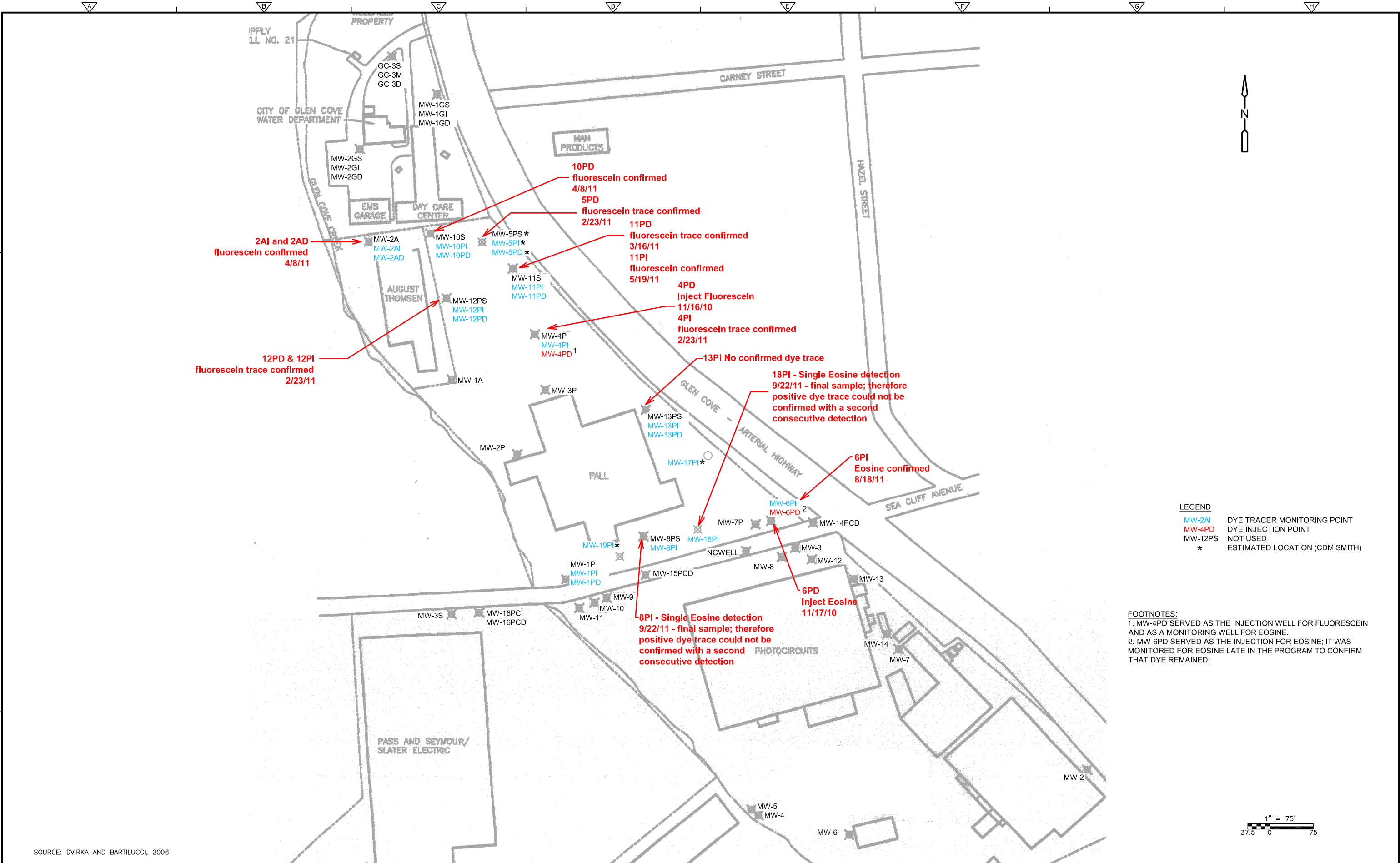
A handwritten signature in blue ink, reading "John P. Blaum".

John P. Blaum, P.E.
Senior Project Manager
Camp Dresser & McKee

Attachments

Figure 1 – Dye Tracer Results Summary
Dye Test Sample Results
Field Notes

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						DESIGNED BY: _____	CDM Smith Camp Dresser & McKee 11 British American Boulevard, Airport Park, Suite 200 Latham, NY 12110 Tel: (518) 782-4500	NYSDEC GLEN COVE, NEW YORK PALL CORPORATION SITE SITE No. 1-30-053B	DYE TRACER RESULTS SUMMARY	PROJECT NO. 0897-67355
					DRAWN BY: _____	FILE NAME: C001STPL				
					SHEET CHK'D BY: _____	SHEET NO.				
					CROSS CHK'D BY: _____	1				
					APPROVED BY: _____					
REV. NO.	DATE	DRWN	CHKD	REMARKS		DATE: _____ APRIL 2012				

CRAWFORD HYDROLOGY LAB * HOFFMAN ENVIRONMENTAL RESEARCH INST

* Hydrogeologists, Geologists, Environmental Scientists * Karst Geophysical Subsurface Investigations

* Karst Groundwater Investigations * Fluorescent Dye Analysis

LABORATORY REPORT SHEET FLUORIMETRIC ANALYSIS RESULTS

FLUORESCCEIN

Color Index:
Acid Yellow 73

Dye Receptor:
Activated Charcoal

Analysis by:
Spectrofluorophotometer

EOSINE

Color Index:
Acid Red 87

Dye Receptor:
Activated Charcoal

Analysis by:
Spectrofluorophotometer

Western Kentucky University
Bowling Green, KY 42101
(270) 745-9224

E-mail: Crawford.Hydrology@wku.edu

Pall Corporation

Analysis requested by:

Ricky Chenenko - CDM

Pall Corporation Site
Site No. 1-30-53B
30-36 Sea Cliff Avenue
Glen Cove, NY

CHARCOAL SAMPLES

FLUORESCCEIN

PQL in Eluent: 0.005 ppb
PQL in Water: 0.010 ppb

λ in Eluent: 516.0 nm

λ in Water: 510.2 nm

EOSINE

PQL in Eluent: 0.005 ppb
PQL in Water: 0.010 ppb

λ in Eluent: 540.4 nm

λ in Water: 534.7 nm

Lab ID	Event	Date Collected	Feature Name	TIME	Peakfit	Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	Comments
ELUENT-1			QA-ELUENT			ND			ND			Control
EL-FL-1			QA-FLUORESCCEIN			+	0.006		ND			0.005 ppb
EL-FL-1A			QA-FLUORESCCEIN			+	0.101		ND			0.100 ppb
EL-EO-1			QA-EOSINE			ND			+	0.006		0.005 ppb
EL-EO-1A			QA-EOSINE			ND			+	0.103		0.100 ppb
EL-01D-0	BG1	10/21/10	MW-1PD	1200		ND			ND			
EL-02I-0	BG1	10/21/10	MW-2AI	1530		ND			ND			
EL-02D-0	BG1	10/21/10	MW-2AD	1540		ND			ND			
EL-04I-0	BG1	10/21/10	MW-4PI	1315		IB	0.537	515.4	ND			
EL-04D-0	BG1	10/21/10	MW-4PD	1310		ND			ND			
EL-05I-0	BG1	10/21/10	MW-5PI	1420		IB	0.170	515.4	ND			
EL-05D-0	BG1	10/21/10	MW-5PD	1430		ND			ND			
EL-06I-0	BG1	10/21/10	MW-6PI	1245		ND			ND			
EL-06D-0	BG1	10/21/10	MW-6PD	1250		ND			ND			
EL-08I-0	BG1	10/21/10	MW-8PI	1236		ND			ND			
EL-10I-0	BG1	10/21/10	MW-10PI	1520		IB	0.267	514.6	ND			
EL-10D-0	BG1	10/21/10	MW-10PD	1515		B	0.011	509.0,POR	ND			
EL-11I-0	BG1	10/21/10	MW-11PI	1450		IB	0.080	514.8	ND			
EL-11D-0	BG1	10/21/10	MW-11PD	1455		ND			ND			
EL-12I-0	BG1	10/21/10	MW-12PI	1330		ND			ND			
EL-12D-0	BG1	10/21/10	MW-12PD	1335		ND			ND			
EL-13I-0	BG1	10/21/10	MW-13PI	1330		ND			ND			
EL-13D-0	BG1	10/21/10	MW-13PD	1305		B	0.009	509.8,POR	ND			
EL-17I-0	BG1	10/21/10	MW-17PI	1255		ND			ND			
EL-18I-0	BG1	10/21/10	MW-18PI	1226		ND			ND			
ELUENT-2			QA-ELUENT			ND			ND			Control
EL-FL-2			QA-FLUORESCCEIN			+	0.005		ND			0.005 ppb
EL-FL-2A			QA-FLUORESCCEIN			+	0.101		ND			0.100 ppb
EL-EO-2			QA-EOSINE			ND			+	0.006		0.005 ppb
EL-EO-2A			QA-EOSINE			ND			+	0.102		0.100 ppb
EL-19I-0	BG1	10/21/10	MW-19PI			B	0.030	510,POR				
ELUENT-3			QA-ELUENT			ND			ND			Control
EL-FL-3			QA-FLUORESCCEIN			+	0.005		ND			0.005 ppb
EL-FL-3A			QA-FLUORESCCEIN			+	0.101		ND			0.100 ppb
EL-EO-3			QA-EOSINE			ND			+	0.004		0.005 ppb
EL-EO-3A			QA-EOSINE			ND			+	0.102		0.100 ppb

Analyzed by: L.Bledsoe on 11/02/10

Entered by: L.Bledsoe on 11/02/10

Comments:

DUP = Field Duplicate

B = Background

ND = No Detection

IB = Initial Background

NS = No Sample Recovered

GS = Grab Sample

NPI = No Peak Identified

POR = Peak Out of Range

Q = Lab Duplicate

+ = Positive

?+ = Questionable Positive, needs two hits in a row to equal +

Peakfit Utilized

ND Below Quantitation Limit

B Background

NS No Sample

+ Positive

++ Very Positive

+++ Extremely Positive

Created 4/19/2012

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* Karst Groundwater Investigations * Fluorescent Dye Analysis

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LABORATORY REPORT SHEET FLUORIMETRIC ANALYSIS RESULTS

FLUORESCCEIN

Color Index:
Acid Yellow 73

Dye Receptor:

Activated Charcoal

Analysis by:

Spectrofluorophotometer

EOSINE

Color Index:
Acid Red 87

Dye Receptor:

Activated Charcoal

Analysis by:

Spectrofluorophotometer

Pall Corporation

Analysis requested by:

Ricky Chenenko - CDM

Pall Corporation Site
Site No. 1-30-53B
30-36 Sea Cliff Avenue
Glen Cove, NY

CHARCOAL SAMPLES

Lab ID	Event	Date Collected	Feature Name	TIME	Peakfit	FLUORESCCEIN			EOSINE			Comments
						Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	
ELUENT-1			QA-ELUENT			ND			ND			Control
EL-FL-1			QA-FLUORESCCEIN			+	0.005		ND			0.005 ppb
EL-FL-1A			QA-FLUORESCCEIN			+	0.102		ND			0.100 ppb
EL-EO-1			QA-EOSINE			ND			+	0.005		0.005 ppb
EL-EO-1A			QA-EOSINE			ND			+	0.102		0.100 ppb
EH-04I-0	02	12/06/10	MW-4PI	1255		ND	21.271	NPI	ND			PEAKFIT STATS OUT OF RANGE, PEAK AT 529.9
EL-05I-0	02	12/06/10	MW-5PI	1322			0.252	515.4	ND			
EL-06I-0	02	12/06/10	MW-6PI	1445		ND	0.017	NPI	ND			
EL-08I-0	02	12/06/10	MW-8PI	1212		ND			ND			
EL-10I-0	02	12/06/10	MW-10PI	1416		B	0.049	513.8	ND			
EL-10D-0	02	12/06/10	MW-10PD	1420		ND			ND			
EL-11I-0	02	12/06/10	MW-11PI	1345			0.110	514.6	ND			
EL-11D-0	02	12/06/10	MW-11PD	1350		ND	0.013	NPI	ND	0.005	NPI	
EL-12I-0	02	12/06/10	MW-12PI	1305		ND	0.034	NPI	ND			
EL-12D-0	02	12/06/10	MW-12PD	1300		B	0.008	512.0	ND			
EL-17I-0	02	12/06/10	MW-17PI	1224		ND	0.007	NPI	ND			
EL-18I-0	02	12/06/10	MW-18PI	1245		ND			ND			
ELUENT-2			QA-ELUENT			ND			ND			Control
EL-FL-2			QA-FLUORESCCEIN			+	0.005		ND			0.005 ppb
EL-FL-2A			QA-FLUORESCCEIN			+	0.102		ND			0.100 ppb
EL-EO-2			QA-EOSINE			ND			+	0.004		0.005 ppb
EL-EO-2A			QA-EOSINE			ND			+	0.101		0.100 ppb

Analyzed by: C.Stinson on 12/10/10

Entered by: L.Bledsoe on 12/13/10

Comments:

Peakfit needed for accurate results

DUP = Field Duplicate

B = Background

ND = No Detection

IB = Initial Background

NS = No Sample Recovered

GS = Grab Sample

NPI = No Peak Identified

POR = Peak Out of Range

Q = Lab Duplicate

+ = Positive

?+ = Questionable Positive, needs two hits in a row to equal +

Peakfit Utilized

ND Below Quantitation Limit

B Background

NS No Sample

+ Positive

++ Very Positive

+++ Extremely Positive

Created 4/19/2012

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* Hydrogeologists, Geologists, Environmental Scientists * Karst Geophysical Subsurface Investigations

* Karst Groundwater Investigations * Fluorescent Dye Analysis

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LABORATORY REPORT SHEET FLUORIMETRIC ANALYSIS RESULTS

Pall Corporation

Analysis requested by:

Ricky Chenenko - CDM

FLUORESCCEIN

Color Index:
Acid Yellow 73

Dye Receptor:
Activated Charcoal

Analysis by:
Spectrofluorophotometer

EOSINE

Color Index:
Acid Red 87

Dye Receptor:
Activated Charcoal

Analysis by:
Spectrofluorophotometer

Pall Corporation Site

Site No. 1-30-53B
30-36 Sea Cliff Avenue
Glen Cove, NY

CHARCOAL SAMPLES

Pan Corporation Site Site No. 1-30-53B 30-36 Sea Cliff Avenue Glen Cove, NY						FLUORESCCEIN			EOSINE			
						PQL in Eluent: 0.005 ppb			PQL in Eluent: 0.005 ppb			
						PQL in Water: 0.010 ppb			PQL in Water: 0.010 ppb			
						λ in Eluent: 516.0 nm			λ in Eluent: 540.4 nm			
						λ in Water: 510.2 nm			λ in Water: 534.7 nm			
Lab ID	Event	Date Collected	Feature Name	TIME	Peakfit	Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	Comments
ELUENT-1			QA-ELUENT			ND			ND			Control
EL-FL-1			QA-FLUORESCCEIN			+	0.005		ND			0.005 ppb
EL-FL-1A			QA-FLUORESCCEIN			+	0.101		ND			0.100 ppb
EH-FL-1			QA-FLUORESCCEIN			+	9.777		ND			10 PPB
EL-EO-1			QA-EOSINE			ND			+	0.005		0.005 ppb
EL-EO-1A			QA-EOSINE			ND			+	0.102		0.100 ppb
EH-EO-1			QA-EOSINE			ND			+	9.948		10 PPB
EL-01D-0	03	12/30/10	MW-1PD	1125		ND	0.005	NPI	ND			
EL-02I-0	03	12/29/10	MW-2AI	1450		ND	0.006	NPI	ND			
EL-02D-0	03	12/29/10	MW-2AD	1500		ND			ND			
EH-04I-0	03	12/30/10	MW-4PI	830		B	0.354	510.4,POR	ND			PEAKFIT SHOWS STONGEST PEAK AT 528
EL-05I-0	03	12/29/10	MW-5PI	1345			0.311	515.4	ND			
EL-05D-0	03	12/29/10	MW-5PD	1330		ND	0.009	NPI	ND			
EL-06I-0	03	12/30/10	MW-6PI	802		ND	0.013	NPI	ND			
EL-08I-0	03	12/30/10	MW-8PI	1220		ND			ND			
EL-08I-Q	03	12/30/10	MW-8PI	1220		ND			ND			LAB DUPLICATE
EL-10I-0	03	12/29/10	MW-10PI	1630			0.059	513.4	ND			
EL-10D-0	03	12/29/10	MW-10PD	1640		B	0.011	510.0,POR	ND			
EL-11I-0	03	12/29/10	MW-11PI	1430			0.108	514.6	ND			
EL-11D-0	03	12/29/10	MW-11PD	1415		ND	0.019	NPI	ND			
EL-12I-0	03	12/30/10	MW-12PI	NA		ND	0.031	NPI	ND			
EL-12D-0	03	12/30/10	MW-12PD	NA		B	0.006	506.0,POR	ND			
EL-13I-0	03	12/30/10	MW-13PI	903			0.890	515.8	ND			
EL-13D-0	03	12/30/10	MW-13PD	935		B	0.019	510.6,POR	ND			
EL-17I-0	03	12/30/10	MW-17PI	1000		ND	0.008	NPI	ND			
EL-18I-0	03	12/30/10	MW-18PI	1101		ND			ND			
EL-19I-0	03	12/30/10	MW-19PI	1145		ND	0.006	NPI	ND			
ELUENT-2			QA-ELUENT			ND			ND			Control
EL-FL-2			QA-FLUORESCCEIN			+	0.005		ND			0.005 ppb
EL-FL-2A			QA-FLUORESCCEIN			+	0.101		ND			0.100 ppb
EL-EO-2			QA-EOSINE			ND			+	0.006		0.005 ppb
EL-EO-2A			QA-EOSINE			ND			+	0.101		0.100 ppb
EL-DUP-1	03	12/29/10	DUP-1	-			0.414	515.6	ND			
EL-DUP-2	03	12/29/10	DUP-2	-		ND	0.006	NPI	ND			
EH-DUP-3	03	12/30/10	DUP-3	-			1.066	512.7		3.800	535.9	PEAKFIT STATS OUT OF RANGE, ALSO SHOWS STRONGEST PEAK AT 528
EL-DUP-4	03	12/30/10	DUP-4	-		ND	0.022	NPI	ND			
EL-DUP-5	03	12/30/10	DUP-5	-		B	0.030	511.4	ND			
ELUENT-3			QA-ELUENT			ND			ND			Control
EL-FL-3			QA-FLUORESCCEIN			+	0.005		ND			0.005 ppb
EL-FL-3A			QA-FLUORESCCEIN			+	0.100		ND			0.100 ppb
EH-FL-3			QA-FLUORESCCEIN			+	9.664		ND			10 ppb
EL-EO-3			QA-EOSINE			ND			+	0.006		0.005 ppb
EL-EO-3A			QA-EOSINE			ND			+	0.103		0.100 ppb
EH-EO-3			QA-EOSINE			ND			+	9.923		10 ppb
Analyzed by: L.Bledsoe						on 01/07/11			Peakfit needed for accurate results			
Entered by: L.Bledsoe						on 01/10/11						
Comments:												
DUP = Field Duplicate						NS = No Sample Recovered			Q = Lab Duplicate			
B = Background						GS = Grab Sample			+ = Positive			
ND = No Detection						NPI = No Peak Identified			?+ = Questionable Positive, needs two hits in a row to equal +			
IB = Initial Background						POR = Peak Out of Range			Peakfit Utilized			

CRAWFORD HYDROLOGY LAB * HOFFMAN ENVIRONMENTAL RESEARCH INSTITUTE

* Hydrogeologists, Geologists, Environmental Scientists * Karst Geophysical Subsurface Investigations

* Karst Groundwater Investigations * Fluorescent Dye Analysis

LABORATORY REPORT SHEET FLUORIMETRIC ANALYSIS RESULTS

FLUORESCCEIN

Color Index:
Acid Yellow 73

Dye Receptor:
Activated Charcoal

Analysis by:
Spectrofluorophotometer

EOSINE

Color Index:
Acid Red 87

Dye Receptor:
Activated Charcoal

Analysis by:
Spectrofluorophotometer

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Bowling Green, KY 42101
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Pall Corporation

Analysis requested by:

Ricky Chenenko - CDM

Pall Corporation Site
Site No. 1-30-53B
30-36 Sea Cliff Avenue
Glen Cove, NY

CHARCOAL SAMPLES

FLUORESCCEIN

PQL in Eluent: 0.005 ppb

PQL in Water: 0.010 ppb

λ in Eluent: 516.0 nm

λ in Water: 510.2 nm

EOSINE

PQL in Eluent: 0.005 ppb

PQL in Water: 0.010 ppb

λ in Eluent: 540.4 nm

λ in Water: 534.7 nm

Lab ID	Event	Date Collected	Feature Name	TIME	Peakfit	Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	Comments
ELUENT-1			QA-ELUENT			ND			ND			Control
EL-FL-1			QA-FLUORESCCEIN			+	0.006		ND			0.005 ppb
EL-FL-1A			QA-FLUORESCCEIN			+	0.102		ND			0.100 ppb
EH-FL-1			QA-FLUORESCCEIN			+	9.910		ND			10 PPB
EL-EO-1			QA-EOSINE			ND			+	0.005		0.005 ppb
EL-EO-1A			QA-EOSINE			ND			+	0.102		0.100 ppb
EH-EO-1			QA-EOSINE			ND			+	10.353		10 PPB
EL-01D-0	04	01/19/11	MW-1PD	1420		ND			ND			
EL-02I-0	04	01/19/11	MW-2AI	1100			0.087	515.6	ND			
EL-02D-0	04	01/19/11	MW-2AD	1110			0.114	514.6	ND			
EH-04I-0	04	01/19/11	MW-4PI	1215			1.146	512.3	B	0.027	544.1	PEAKFIT STATS OUT OF RANGE for FL
EL-05I-0	04	01/19/11	MW-5PI	1115			0.151	514.8	ND			
EL-05D-0	04	01/19/11	MW-5PD	1125		ND	0.006	NPI	ND			
EL-06I-0	04	01/19/11	MW-6PI	1310		ND			ND	0.024	NPI	
EL-08I-0	04	01/19/11	MW-8PI	1325		ND			ND			
EL-10I-0	04	01/19/11	MW-10PI	1105			0.052	513.4	ND			
EL-10I-Q	04	01/19/11	MW-10PI	1105		B	0.047	512.6	ND			LAB DUPLICATE
EL-10D-0	04	01/19/11	MW-10PD	1055		B	0.013	508.6,POR	ND			
EL-11I-0	04	01/19/11	MW-11PI	1140			0.080	514.0	ND			
EL-11D-0	04	01/19/11	MW-11PD	1130		ND	0.012	NPI	ND			
EL-12I-0	04	01/19/11	MW-12PI	1045		ND	0.020	NPI	ND			
EL-12D-0	04	01/19/11	MW-12PD	1050		ND			ND			
EL-13I-0	04	01/19/11	MW-13PI	1240		ND			ND			
EL-13D-0	04	01/19/11	MW-13PD	1250		B	0.019	510.0,POR	ND			
EL-17I-0	04	01/19/11	MW-17PI	1300		ND	0.010	NPI	ND			
EL-18I-0	04	01/19/11	MW-18PI	1325		ND			ND			
EL-19I-0	04	01/19/11	MW-19PI	1345		ND			ND			
ELUENT-2			QA-ELUENT			ND			ND			Control
EL-FL-2			QA-FLUORESCCEIN			+	0.005		ND			0.005 ppb
EL-EO-2			QA-EOSINE			ND			+	0.005		0.005 ppb
EL-DUP-6	04	01/19/11	DUP-6	-		ND	0.022	NPI	ND			
EL-DUP-7	04	01/19/11	DUP-7	-			0.228	514.2	ND			
ELUENT-3			QA-ELUENT			ND			ND			Control
EL-FL-3			QA-FLUORESCCEIN			+	0.006		ND			0.005 ppb
EL-FL-3A			QA-FLUORESCCEIN			+	0.104		ND			0.100 ppb
EH-FL-3			QA-FLUORESCCEIN			+	9.893		ND			10 ppb
EL-EO-3			QA-EOSINE			ND			+	0.005		0.005 ppb
EL-EO-3A			QA-EOSINE			ND			+	0.105		0.100 ppb
EH-EO-3			QA-EOSINE			ND			+	10.296		10 ppb

Analyzed by: L.Bledsoe on 01/31/11

Entered by: L.Bledsoe on 02/01/11

Comments:

DUP = Field Duplicate

B = Background

ND = No Detection

IB = Initial Background

NS = No Sample Recovered

GS = Grab Sample

NPI = No Peak Identified

POR = Peak Out of Range

Q = Lab Duplicate

+ = Positive

?+ = Questionable Positive, needs two hits in a row to equal +

Peakfit Utilized

Peakfit needed for accurate results

ND Below Quantitation Limit

B Background

NS No Sample

+ Positive

++ Very Positive

+++ Extremely Positive

Created 4/19/2012

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* Karst Groundwater Investigations * Fluorescent Dye Analysis

LABORATORY REPORT SHEET FLUORIMETRIC ANALYSIS RESULTS

FLUORESCCEIN

Color Index:

Acid Yellow 73

Dye Receptor:

Activated Charcoal

Analysis by:

Spectrofluorophotometer

EOSINE

Color Index:

Acid Red 87

Dye Receptor:

Activated Charcoal

Analysis by:

Spectrofluorophotometer

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(270) 745-9224

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Pall Corporation

Analysis requested by:

Ricky Chenenko - CDM

Pall Corporation Site
Site No. 1-30-53B
30-36 Sea Cliff Avenue
Glen Cove, NY

CHARCOAL SAMPLES

FLUORESCCEIN

PQL in Eluent: 0.005 ppb

PQL in Water: 0.010 ppb

λ in Eluent: 516.0 nm

λ in Water: 510.2 nm

EOSINE

PQL in Eluent: 0.005 ppb

PQL in Water: 0.010 ppb

λ in Eluent: 540.4 nm

λ in Water: 534.7 nm

Lab ID	Event	Date Collected	Feature Name	TIME	Peakfit	Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	Comments
ELUENT-1			QA-ELUENT			ND			ND			Control
EL-FL-1			QA-FLUORESCCEIN			+	0.005		ND			0.005 ppb
EL-FL-1A			QA-FLUORESCCEIN			+	0.102		ND			0.100 ppb
EH-FL-1			QA-FLUORESCCEIN			+	9.980		ND			10 PPB
EL-EO-1			QA-EOSINE			ND			+	0.006		0.005 ppb
EL-EO-1A			QA-EOSINE			ND			+	0.102		0.100 ppb
EH-EO-1			QA-EOSINE			ND			+	10.302		10 PPB
EL-01D-0	05	02/07/11	MW-1PD	1415		ND	0.007	NPI	ND			
EL-02I-0	05	02/07/11	MW-2AI	1355		B	0.049	515.6	ND			
EL-02D-0	05	02/07/11	MW-2AD	1400		B	0.050	509.6,POR	ND			
EH-04I-0	05	02/07/11	MW-4PI	1305		B	0.536	512.6	+	1.362	538.3	PEAKFIT STATS OUT OF RANGE
EL-05I-0	05	02/07/11	MW-5PI	1330		B	0.244	514.8	ND			
EL-05D-0	05	02/07/11	MW-5PD	1335		ND	0.009	NPI	ND			
EL-06I-0	05	02/07/11	MW-6PI	1245		ND	0.019	NPI	ND			
EL-08I-0	05	02/07/11	MW-8PI	1235		ND	0.009	NPI	ND			
EL-10I-0	05	02/07/11	MW-10PI	1350		B	0.074	509.4,POR	ND			
EL-10D-0	05	02/07/11	MW-10PD	1340		B	0.282	514.2	ND			
EL-11I-0	05	02/07/11	MW-11PI	1325		B	0.097	512.8	ND			
EL-11D-0	05	02/07/11	MW-11PD	1320		ND	0.029	NPI	ND			
EL-12I-0	05	02/07/11	MW-12PI	1315		B	0.030	506.6,POR	ND			
EL-12D-0	05	02/07/11	MW-12PD	1310		ND	0.009	NPI	ND			
EL-13I-0	05	02/07/11	MW-13PI	1255		B	0.035	507.8,POR	ND			
EL-13D-0	05	02/07/11	MW-13PD	1300		B	0.033	508.2,POR	ND			
EL-17I-0	05	02/07/11	MW-17PI	1250		B	0.044	509.2,POR	ND			
EL-18I-0	05	02/07/11	MW-18PI	1240		ND	0.010	NPI	ND			
EL-19I-0	05	02/07/11	MW-19PI	1230		ND	0.006	NPI	ND			
ELUENT-2			QA-ELUENT			ND			ND			Control
EL-FL-2			QA-FLUORESCCEIN			+	0.006		ND			0.005 ppb
EL-EO-2			QA-EOSINE			ND			+	0.006		0.005 ppb
EL-DUP-8	05	02/07/11	DUP-8	-		ND	0.008	NPI	ND			
EL-DUP-9	05	02/07/11	DUP-9	-			0.059	511.2	ND			
ELUENT-3			QA-ELUENT			ND			ND			Control
EL-FL-3			QA-FLUORESCCEIN			+	0.005		ND			0.005 ppb
EL-FL-3A			QA-FLUORESCCEIN			+	0.103		ND			0.100 ppb
EH-FL-3			QA-FLUORESCCEIN			+	9.993		ND			10 ppb
EL-EO-3			QA-EOSINE			ND			+	0.005		0.005 ppb
EL-EO-3A			QA-EOSINE			ND			+	0.104		0.100 ppb
EH-EO-3			QA-EOSINE			ND			+	10.350		10 ppb

Analyzed by: L.Bledsoe

on 02/15/11

Peakfit needed for accurate results

Entered by: L.Bledsoe

on 02/16/11

Comments:

DUP = Field Duplicate

B = Background

ND = No Detection

IB = Initial Background

NS = No Sample Recovered

GS = Grab Sample

NPI = No Peak Identified

POR = Peak Out of Range

Q = Lab Duplicate

+= Positive

?+ = Questionable Positive, needs two hits in a row to equal+

Peakfit Utilized

ND Below Quantitation Limit

B Background

NS No Sample

+ Positive

++ Very Positive

+++ Extremely Positive

Created 4/19/2012

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* Hydrogeologists, Geologists, Environmental Scientists * Karst Geophysical Subsurface Investigations

* Karst Groundwater Investigations * Fluorescent Dye Analysis

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Bowling Green, KY 42101

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E-mail: Crawford.Hydrology@wku.edu

LABORATORY REPORT SHEET FLUORIMETRIC ANALYSIS RESULTS

FLUORESCCEIN

Color Index:

Acid Yellow 73

Dye Receptor:

Activated Charcoal

Analysis by:

Spectrofluorophotometer

EOSINE

Color Index:

Acid Red 87

Dye Receptor:

Activated Charcoal

Analysis by:

Spectrofluorophotometer

Pall Corporation

Analysis requested by:

Ricky Chenenko - CDM

Pall Corporation Site

Site No. 1-30-53B

30-36 Sea Cliff Avenue

Glen Cove, NY

CHARCOAL SAMPLES

FLUORESCCEIN

PQL in Eluent: 0.005 ppb

PQL in Water: 0.010 ppb

λ in Eluent: 516.0 nm

λ in Water: 510.2 nm

EOSINE

PQL in Eluent: 0.005 ppb

PQL in Water: 0.010 ppb

λ in Eluent: 540.4 nm

λ in Water: 534.7 nm

Lab ID	Event	Date Collected	Feature Name	TIME	Peakfit	Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	Comments
WATER-1			QA-WATER			ND			ND			Control
WL-FL-1			QA-FLUORESCCEIN			+	0.008		ND			0.010ppb
WL-FL-1A			QA-FLUORESCCEIN			+	0.101		ND			0.100 ppb
WH-FL-1			QA-FLUORESCCEIN			+	0.920		ND			1.000ppb
WL-EO-1			QA-EOSINE			ND			+	0.009		0.010ppb
WL-EO-1A			QA-EOSINE			ND			+	0.100		0.100 ppb
WH-EO-1			QA-EOSINE			ND			+	9.537		10 ppb
WH-04I-D	03	12/30/10	MW-4PI			ND	0.200	NPI	ND	22.900	NPI	DILUTED 1:100
WH-DUP-3	03	12/30/10	DUP 3			ND			ND	4.220	NPI	
WL-02I-0	04	01/19/11	MW-2AI			B	0.040	510.0	ND			
WH-04I-0	04	01/19/11	MW-4PI			ND			ND	2.479	NPI	
WL-02I-0	05	02/07/11	MW-2AI			B	0.027	510.0	ND			
WH-04I-0	05	02/07/11	MW-4PI						B	0.337	524.0,POR	
WATER-1			QA-WATER			ND			ND			Control
WL-FL-1			QA-FLUORESCCEIN			+	0.009		ND			0.010ppb
WL-FL-1A			QA-FLUORESCCEIN			+	0.101		ND			0.100 ppb
WH-FL-1			QA-FLUORESCCEIN			+	0.902		ND			1.000ppb
WL-EO-1			QA-EOSINE			ND			+	0.008		0.010ppb
WL-EO-1A			QA-EOSINE			ND			+	0.100		0.100 ppb
WH-EO-1			QA-EOSINE			ND			+	9.564		10 ppb

Analyzed by: L.Bledsoe on 02/21/11

Entered by: L.Bledsoe on 02/22/11

Comments:

DUP = Field Duplicate

B = Background

ND = No Detection

IB = Initial Background

NS = No Sample Recovered

GS = Grab Sample

NPI = No Peak Identified

POR = Peak Out of Range

Q = Lab Duplicate

+ = Positive

?+ = Questionable Positive, needs two hits in a row to equal +

Peakfit Utilized

ND Below Quantitation Limit

B Background

NS No Sample

+ Positive

++ Very Positive

+++ Extremely Positive

Created 4/19/2012

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LABORATORY REPORT SHEET FLUORIMETRIC ANALYSIS RESULTS

FLUORESCCEIN

Color Index:

Acid Yellow 73

Dye Receptor:

Activated Charcoal

Analysis by:

Spectrofluorophotometer

EOSINE

Color Index:

Acid Red 87

Dye Receptor:

Activated Charcoal

Analysis by:

Spectrofluorophotometer

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Pall Corporation

Analysis requested by:

Ricky Chenenko - CDM

Pall Corporation Site

Site No. 1-30-53B

30-36 Sea Cliff Avenue

Glen Cove, NY

CHARCOAL SAMPLES

FLUORESCCEIN

PQL in Eluent: 0.005 ppb

PQL in Water: 0.010 ppb

λ in Eluent: 516.0 nm

λ in Water: 510.2 nm

EOSINE

PQL in Eluent: 0.005 ppb

PQL in Water: 0.010 ppb

λ in Eluent: 540.4 nm

λ in Water: 534.7 nm

Lab ID	Event	Date Collected	Feature Name	TIME	Peakfit	Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	Comments
ELUENT-1			QA-ELUENT			ND			ND			Control
EL-FL-1			QA-FLUORESCCEIN			+	0.005		ND			0.005 ppb
EL-FL-1A			QA-FLUORESCCEIN			+	0.098		ND			0.100 ppb
EH-FL-1			QA-FLUORESCCEIN			+	9.618		ND			10 PPB
EL-EO-1			QA-EOSINE			ND			+	0.006		0.005 ppb
EL-EO-1A			QA-EOSINE			ND			+	0.103		0.100 ppb
EH-EO-1			QA-EOSINE			ND			+	9.937		10 PPB
EL-01D-0	06	02/23/11	MW-1PD	1230		ND	0.010	NPI	ND			
EL-02D-0	06	02/23/11	MW-2AD	1210		B	0.028	513.0	ND			
EL-02I-0	06	02/23/11	MW-2AI	1210			0.069	515.2	ND			
EH-04I-D	06	02/23/11	MW-4PI	1105			1368.900	515.6	ND			1:100 DILUTION
EL-05D-0	06	02/23/11	MW-5PD	1130			0.154	515.0	ND			
EL-05I-0	06	02/23/11	MW-5PI	1125			0.141	515.0	ND			
EL-06I-0	06	02/23/11	MW-6PI	1045		ND	0.010	NPI	ND			
EL-08I-0	06	02/23/11	MW-8PI	1035		ND			ND			
EL-10I-0	06	02/23/11	MW-10PI	1155			0.063	512.8	ND			
EL-10D-0	06	02/23/11	MW-10PD	1200		B	0.011	511.0	ND			
EL-11I-0	06	02/23/11	MW-11PI	1145			0.090	515.4	ND			
EL-11D-0	06	02/23/11	MW-11PD	1150		B	0.028	510.8,POR	ND			
EL-12I-0	06	02/23/11	MW-12PI	1115			0.324	514.6	ND			
EL-12D-0	06	02/23/11	MW-12PD	1120			0.174	515.0	ND			
EL-12D-Q	06	02/23/11	MW-12PD	1120			0.364	515.6	ND			LAB DUPLICATE
EL-13I-0	06	02/23/11	MW-13PI	1055		ND	0.005	NPI	ND			
EL-13D-0	06	02/23/11	MW-13PD	1100		B	0.022	507.2,POR	ND			
EL-17I-0	06	02/23/11	MW-17PI	1050		ND			ND	0.047	NPI	
EL-18I-0	06	02/23/11	MW-18PI	1040		ND			ND			
EL-19I-0	06	02/23/11	MW-19PI	1030		ND			ND			
ELUENT-2			QA-ELUENT			ND			ND			Control
EL-FL-2			QA-FLUORESCCEIN			+	0.005		ND			0.005 ppb
EL-EO-2			QA-EOSINE			ND			+	0.006		0.005 ppb
EL-DUP-10	05	02/23/11	DUP-10	-		B	0.017	513.4	ND			
EL-DUP-11	05	02/23/11	DUP-11	-		B	0.010	509.6,POR				
ELUENT-3			QA-ELUENT			ND			ND			Control
EL-FL-3			QA-FLUORESCCEIN			+	0.005		ND			0.005 ppb
EL-FL-3A			QA-FLUORESCCEIN			+	0.099		ND			0.100 ppb
EH-FL-3			QA-FLUORESCCEIN			+	9.789		ND			10 ppb
EL-EO-3			QA-EOSINE			ND			+	0.007		0.005 ppb
EL-EO-3A			QA-EOSINE			ND			+	0.100		0.100 ppb
EH-EO-3			QA-EOSINE			ND			+	10.053		10 ppb

Analyzed by: C.Davis on 02/28/11

Entered by: C.Stinson on 02/28/11

Comments:

DUP = Field Duplicate

B = Background

ND = No Detection

IB = Initial Background

NS = No Sample Recovered

GS = Grab Sample

NPI = No Peak Identified

POR = Peak Out of Range

Q = Lab Duplicate

+ = Positive

?+ = Questionable Positive, needs two hits in a row to equal +

Peakfit Utilized

Peakfit needed for accurate results

ND Below Quantitation Limit

B Background

NS No Sample

+ Positive

++ Very Positive

+++ Extremely Positive

Created 4/19/2012

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LABORATORY REPORT SHEET FLUORIMETRIC ANALYSIS RESULTS						FLUORESCIEIN Color Index: Acid Yellow 73 Dye Receptor: Activated Charcoal Analysis by: Spectrofluorophotometer EOSINE Color Index: Acid Red 87 Dye Receptor: Activated Charcoal Analysis by: Spectrofluorophotometer						
Pall Corporation						Western Kentucky University Bowling Green, KY 42101 (270) 745-9224 E-mail: Crawford.Hydrology@wku.edu						
Analysis requested by: Ricky Chenenko - CDM						CHARCOAL SAMPLES						
Pall Corporation Site Site No. 1-30-53B 30-36 Sea Cliff Avenue Glen Cove, NY						FLUORESCIEIN PQL in Eluent: 0.005 ppb PQL in Water: 0.010 ppb λ in Eluent: 516.0 nm λ in Water: 510.0 nm EOSINE PQL in Eluent: 0.005 ppb PQL in Water: 0.010 ppb λ in Eluent: 540.0 nm λ in Water: 534.3 nm						
Lab ID	Event	Date Collected	Feature Name	TIME	Peakfit	Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	Comments
ELUENT-1			QA-ELUENT			ND			ND			Control
EL-FL-1			QA-FLUORESCIEIN			+	0.006		ND			0.005 ppb
EL-FL-1A			QA-FLUORESCIEIN			+	0.103		ND			0.100 ppb
EH-FL-1			QA-FLUORESCIEIN			+	10.842		ND			10 PPB
EL-EO-1			QA-EOSINE			ND			+	0.004		0.005 ppb
EL-EO-1A			QA-EOSINE			ND			+	0.102		0.100 ppb
EH-EO-1			QA-EOSINE			ND			+	10.663		10 PPB
EL-01D-0	07	03/16/11	MW-1PD	1420		B	0.025	507.2,POR	ND			
EL-02D-0	07	03/16/11	MW-2AD	1400		B	0.026	512.8	ND			
EL-02I-0	07	03/16/11	MW-2AI	1350		B	0.025	507.6,POR	ND			
EH-04D-3D	07	03/16/11	MW-4PD	1220			675800.000	515.6	ND			DILUTED 1:10,000
EH-04I-0	07	03/16/11	MW-4PI	1210			17.749	515.8	ND			
EL-05D-0	07	03/16/11	MW-5PD	1320			0.076	512.4	ND			
EL-05I-0	07	03/16/11	MW-5PI	1310			2.430	515.4	ND			
EL-06I-0	07	03/16/11	MW-6PI	1130		ND	0.012	NPI	ND			
EL-08I-0	07	03/16/11	MW-8PI	110		ND	0.025	NPI	ND			
EL-10I-0	07	03/16/11	MW-10PI	1330			0.143	514.2	ND			
EL-10D-0	07	03/16/11	MW-10PD	1340		B	0.044	510.4,POR	ND			
EL-11I-0	07	03/16/11	MW-11PI	1250			0.439	515.2	ND			
EL-11D-0	07	03/16/11	MW-11PD	1300			0.424	515.2	ND			
EL-12I-0	07	03/16/11	MW-12PI	1230			0.705	514.8	ND			
EL-12D-0	07	03/16/11	MW-12PD	1240			0.103	514.4	ND			
EL-13I-0	07	03/16/11	MW-13PI	1150		ND	0.018	NPI	ND			
EL-13D-0	07	03/16/11	MW-13PD	1200		B	0.044	508.8,POR	ND			
ELUENT-2			QA-ELUENT			ND			ND			Control
EL-FL-2			QA-FLUORESCIEIN			+	0.006		ND			0.005 ppb
EL-EO-2			QA-EOSINE			ND			+	0.005		0.005 ppb
EL-17I-0	07	03/16/11	MW-17PI	1140		B	0.021	507.2,POR	ND			
EL-18I-0	07	03/16/11	MW-18PI	1120		ND	0.008	NPI	ND			
EL-19I-0	07	03/16/11	MW-19PI	1100		B	0.029	508.6,POR	ND			
EL-19I-Q	07	03/16/11	MW-19PI	1100		B	0.031	508.4,POR	ND			LAB DUPLICATE
EL-DUP-12	07	03/16/11	DUP-12	-		B	0.122	512.6	ND			
EL-DUP-13	07	03/16/11	DUP-13	-		B	0.036	508.4,POR				
ELUENT-3			QA-ELUENT			ND			ND			Control
EL-FL-3			QA-FLUORESCIEIN			+	0.006		ND			0.005 ppb
EL-FL-3A			QA-FLUORESCIEIN			+	0.102		ND			0.100 ppb
EH-FL-3			QA-FLUORESCIEIN			+	10.917		ND			10 ppb
EL-EO-3			QA-EOSINE			ND			+	0.006		0.005 ppb
EL-EO-3A			QA-EOSINE			ND			+	0.103		0.100 ppb
EH-EO-3			QA-EOSINE			ND			+	10.691		10 ppb
Analyzed by: L.Bledsoe on 03/23/11						Peakfit needed for accurate results						
Entered by: L.Bledsoe on 03/24/11												
Comments:												
DUP = Field Duplicate B = Background ND = No Detection IB = Initial Background						NS = No Sample Recovered GS = Grab Sample NPI = No Peak Identified POR = Peak Out of Range						
						Q = Lab Duplicate + = Positive ?+ = Questionable Positive, needs two hits in a row to equal + Peakfit Utilized						

CRAWFORD HYDROLOGY LAB * HOFFMAN ENVIRONMENTAL RESEARCH INSTTI												
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LABORATORY REPORT SHEET FLUORIMETRIC ANALYSIS RESULTS					FLUORESCIEIN Color Index: Acid Yellow 73 Dye Receptor: Activated Charcoal Analysis by: Spectrofluorophotometer EOSINE Color Index: Acid Red 87 Dye Receptor: Activated Charcoal Analysis by: Spectrofluorophotometer							
Pall Corporation					Western Kentucky University Bowling Green, KY 42101 (270) 745-9224 E-mail: Crawford.Hydrology@wku.edu							
Analysis requested by: Ricky Chenenko - CDM												
Pall Corporation Site Site No. 1-30-53B 30-36 Sea Cliff Avenue Glen Cove, NY					CHARCOAL SAMPLES							
					FLUORESCIEIN PQL in Eluent: 0.005 ppb PQL in Water: 0.010 ppb λ in Eluent: 516.0 nm λ in Water: 510.0 nm EOSINE PQL in Eluent: 0.005 ppb PQL in Water: 0.010 ppb λ in Eluent: 540.0 nm λ in Water: 534.3 nm							
Lab ID	Event	Date Collected	Feature Name	TIME	Peakfit	Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	Comments
ELUENT-1			QA-ELUENT			ND			ND			Control
EL-FL-1			QA-FLUORESCIEIN			+	0.006		ND			0.005 ppb
EL-FL-1A			QA-FLUORESCIEIN			+	0.104		ND			0.100 ppb
EH-FL-1			QA-FLUORESCIEIN			+	9.872		ND			10 PPB
EL-EO-1			QA-EOSINE			ND			+	0.005		0.005 ppb
EL-EO-1A			QA-EOSINE			ND			+	0.104		0.100 ppb
EH-EO-1			QA-EOSINE			ND			+	10.988		10 PPB
EL-01D-0	08	04/08/11	MW-1PD	1420		B	0.056	510.8,POR	ND			
EL-02D-0	08	04/08/11	MW-2AD	1405			0.485	514.6	ND			
EL-02I-0	08	04/08/11	MW-2AI	1400			0.164	514.2	ND			
EH-04D-3D	08	04/08/11	MW-4PD	1235			807640.000	515.8	ND			DILUTED 1:10,000
EH-04I-0	08	04/08/11	MW-4PI	1230			4.441	516.4	ND			
EL-05D-0	08	04/08/11	MW-5PD	1325			1.875	515.6	ND			
EL-05I-0	08	04/08/11	MW-5PI	1320			0.766	515.6	ND			
EL-06I-0	08	04/08/11	MW-6PI	1200		B	0.023	506.8,POR	ND			
EL-08I-0	08	04/08/11	MW-8PI	1158		B	0.017	506.2,POR	ND			
EL-10I-0	08	04/08/11	MW-10PI	1340			0.556	515.4	ND			
EL-10D-0	08	04/08/11	MW-10PD	1345			0.066	512.6	ND			
EL-11I-0	08	04/08/11	MW-11PI	1300			0.607	515.6	ND			
EL-11D-0	08	04/08/11	MW-11PD	1305			0.166	514.4	ND			
EL-12I-0	08	04/08/11	MW-12PI	1245			0.810	515.0	ND			
EL-12D-0	08	04/08/11	MW-12PD	1250			0.826	515.6	ND			
EL-13I-0	08	04/08/11	MW-13PI	1215			0.321	515.2	ND			
EL-13D-0	08	04/08/11	MW-13PD	1220		B	0.031	509.4,POR	ND			
ELUENT-2			QA-ELUENT			ND			ND			Control
EL-FL-2			QA-FLUORESCIEIN			+	0.006		ND			0.005 ppb
EL-EO-2			QA-EOSINE			ND			+	0.006		0.005 ppb
EL-17I-0	08	04/08/11	MW-17PI	1210		ND	0.022	NPI	ND			
EL-18I-0	08	04/08/11	MW-18PI	1155			0.081	512.8	ND			
EL-19I-0	08	04/08/11	MW-19PI	1145		B	0.055	510.4,POR	ND			
EL-19I-Q	08	04/08/11	MW-19PI	1145		B	0.024	507.4,POR	ND			LAB DUPLICATE
EH-DUP-14	08	04/08/11	DUP-16	-			10.268	515.6	ND			
EL-DUP-15	08	04/08/11	DUP-17	-			0.617	515.4				
ELUENT-3			QA-ELUENT			ND			ND			Control
EL-FL-3			QA-FLUORESCIEIN			+	0.006		ND			0.005 ppb
EL-FL-3A			QA-FLUORESCIEIN			+	0.104		ND			0.100 ppb
EH-FL-3			QA-FLUORESCIEIN			+	9.813		ND			10 ppb
EL-EO-3			QA-EOSINE			ND			+	0.005		0.005 ppb
EL-EO-3A			QA-EOSINE			ND			+	0.106		0.100 ppb
EH-EO-3			QA-EOSINE			ND			+	9.813		10 ppb
Analyzed by: C.Davis on 04/18/11					Peakfit needed for accurate results							
Entered by: L.Bledsoe on 04/19/11												
Comments:					DUP = Field Duplicate B = Background ND = No Detection IB = Initial Background NS = No Sample Recovered GS = Grab Sample NPI = No Peak Identified POR = Peak Out of Range Q = Lab Duplicate + = Positive ?+ = Questionable Positive, needs two hits in a row to equal + Peakfit Utilized							

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LABORATORY REPORT SHEET FLUORIMETRIC ANALYSIS RESULTS					FLUORESCIEIN Color Index: Acid Yellow 73 Dye Receptor: Activated Charcoal Analysis by: Spectrofluorophotometer EOSINE Color Index: Acid Red 87 Dye Receptor: Activated Charcoal Analysis by: Spectrofluorophotometer							
Pall Corporation					Western Kentucky University Bowling Green, KY 42101 (270) 745-9224 E-mail: Crawford.Hydrology@wku.edu							
Analysis requested by: Ricky Chenenko - CDM												
Pall Corporation Site Site No. 1-30-53B 30-36 Sea Cliff Avenue Glen Cove, NY					CHARCOAL SAMPLES							
Lab ID	Event	Date Collected	Feature Name	TIME	Peakfit	Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	Comments
ELUENT-1			QA-ELUENT			ND			ND			Control
EL-FL-1			QA-FLUORESCIEIN			+	0.006		ND			0.005 ppb
EL-FL-1A			QA-FLUORESCIEIN			+	0.103		ND			0.100 ppb
EH-FL-1			QA-FLUORESCIEIN			+	9.593		ND			10 PPB
EL-EO-1			QA-EOSINE			ND			+	0.006		0.005 ppb
EL-EO-1A			QA-EOSINE			ND			+	0.105		0.100 ppb
EH-EO-1			QA-EOSINE			ND			+	10.719		10 PPB
EL-01D-0	09	04/27/11	MW-1PD	1420			0.224	515.2	ND			
EL-02D-0	09	04/27/11	MW-2AD	1400			0.134	512.0	ND			
EL-02I-0	09	04/27/11	MW-2AI	1350			0.094	513.4	ND			
EH-04D-3D	09	04/27/11	MW-4PD	1220			465040.000	515.8	ND			DILUTED 1:10,000
EH-04I-0	09	04/27/11	MW-4PI	1210			1.140	515.8	ND			
EL-05D-0	09	04/27/11	MW-5PD	1320			0.352	515.2	ND			
EL-05I-0	09	04/27/11	MW-5PI	1310			0.453	515.6	ND			
EL-06I-0	09	04/27/11	MW-6PI	1140	B		0.031	507.4,POR	ND			
EL-08I-0	09	04/27/11	MW-8PI	1120	B		0.015	505.0,POR	ND			
EL-10I-0	09	04/27/11	MW-10PI	1330			0.288	515.4	ND			
EL-10D-0	09	04/27/11	MW-10PD	1340			0.149	514.6	ND			
EL-11I-0	09	04/27/11	MW-11PI	1250			0.489	515.6	ND			
EL-11D-0	09	04/27/11	MW-11PD	1300			0.454	515.2	ND			
EL-12I-0	09	04/27/11	MW-12PI	1230			0.231	513.6	ND			
EL-12D-0	09	04/27/11	MW-12PD	1240			0.235	514.8	ND			
EL-13I-0	09	04/27/11	MW-13PI	1150	B		0.018	507.0,POR	ND			
EL-13D-0	09	04/27/11	MW-13PD	1200			0.122	514.2	ND			
ELUENT-2			QA-ELUENT			ND			ND			Control
EL-FL-2			QA-FLUORESCIEIN			+	0.005		ND			0.005 ppb
EL-EO-2			QA-EOSINE			ND			+	0.006		0.005 ppb
EL-17I-0	09	04/27/11	MW-17PI	1140	B		0.040	508.4,POR	ND			
EL-18I-0	09	04/27/11	MW-18PI	1130	ND		0.014	NPI	ND			
EL-19I-0	09	04/27/11	MW-19PI	1115	B		0.013	506.8,POR	ND			
EL-19I-Q	09	04/27/11	MW-19PI	1115	ND		0.010	NPI	ND			(PEAK AT 502.0, OUT OF RANGE) lab dup
EL-DUP-16	09	04/27/11	DUP-16	-	B		0.022	507.0,POR	ND			
EL-DUP-17	09	04/27/11	DUP-17	-			0.200	514.8	ND			
ELUENT-3			QA-ELUENT			ND			ND			Control
EL-FL-3			QA-FLUORESCIEIN			+	0.005		ND			0.005 ppb
EL-FL-3A			QA-FLUORESCIEIN			+	0.104		ND			0.100 ppb
EH-FL-3			QA-FLUORESCIEIN			+	9.819		ND			10 ppb
EL-EO-3			QA-EOSINE			ND			+	0.007		0.005 ppb
EL-EO-3A			QA-EOSINE			ND			+	0.105		0.100 ppb
EH-EO-3			QA-EOSINE			ND			+	10.658		10 ppb
Analyzed by: L.Bledsoe on 05/05/11					Peakfit needed for accurate results							
Entered by: L.Bledsoe on 05/06/11												
Comments:					DUP = Field Duplicate B = Background ND = No Detection IB = Initial Background NS = No Sample Recovered GS = Grab Sample NPI = No Peak Identified POR = Peak Out of Range Q = Lab Duplicate + = Positive ?+ = Questionable Positive, needs two hits in a row to equal + Peakfit Utilized							

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LABORATORY REPORT SHEET FLUORIMETRIC ANALYSIS RESULTS					FLUORESCIEIN Color Index: Acid Yellow 73 Dye Receptor: Activated Charcoal Analysis by: Spectrofluorophotometer EOSINE Color Index: Acid Red 87 Dye Receptor: Activated Charcoal Analysis by: Spectrofluorophotometer							
Pall Corporation					Western Kentucky University Bowling Green, KY 42101 (270) 745-9224 E-mail: Crawford.Hydrology@wku.edu							
Analysis requested by: Ricky Chenenko - CDM												
Pall Corporation Site Site No. 1-30-53B 30-36 Sea Cliff Avenue Glen Cove, NY					CHARCOAL SAMPLES							
Lab ID	Event	Date Collected	Feature Name	TIME	Peakfit	Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	Comments
ELUENT-1			QA-ELUENT			ND			ND			Control
EL-FL-1			QA-FLUORESCIEIN			+	0.005		ND			0.005 ppb
EL-FL-1A			QA-FLUORESCIEIN			+	0.101		ND			0.100 ppb
EH-FL-1			QA-FLUORESCIEIN			+	9.533		ND			10 PPB
EL-EO-1			QA-EOSINE			ND			+	0.005		0.005 ppb
EL-EO-1A			QA-EOSINE			ND			+	0.098		0.100 ppb
EH-EO-1			QA-EOSINE			ND			+	10.532		10 PPB
EL-01D-0	10	05/19/11	MW-1PD	1340		B	0.024	507.2,POR	ND			
EL-02D-0	10	05/19/11	MW-2AD	1320		ND	0.031	NPI	ND			
EL-02I-0	10	05/19/11	MW-2AI	1310		B	0.034	509.0,POR	ND			
EH-04D-3D	10	05/19/11	MW-4PD	1140			449380.000	515.8	ND			DILUTED 1:10,000
EL-04I-0	10	05/19/11	MW-4PI	1130		B	0.888	508.4,POR	ND			
EL-05D-0	10	05/19/11	MW-5PD	1220		B	0.177	510.8,POR	ND			
EL-05I-0	10	05/19/11	MW-5PI	1210			0.320	515.6	ND			
EL-06I-0	10	05/19/11	MW-6PI	1050		B	0.019	514.6	ND			
EL-08I-0	10	05/19/11	MW-8PI	1030		ND	0.010	NPI	ND			
EL-10I-0	10	05/19/11	MW-10PI	1250		B	0.119	506.4,POR	ND			
EL-10D-0	10	05/19/11	MW-10PD	1300		B	0.029	508.2,POR	ND			
EL-11I-0	10	05/19/11	MW-11PI	1230			1.025	513.0	ND			
EL-11D-0	10	05/19/11	MW-11PD	1240		B	0.050	508.0,POR	ND			
EL-12I-0	10	05/19/11	MW-12PI	1150			0.184	515.6	ND			
EL-12D-0	10	05/19/11	MW-12PD	1200			0.099	514.2	ND			
EL-13I-0	10	05/19/11	MW-13PI	1110		B	0.017	510.0,POR	ND			
EL-13D-0	10	05/19/11	MW-13PD	1120		B	0.041	509.0,POR	ND			
ELUENT-2			QA-ELUENT			ND			ND			Control
EL-FL-2			QA-FLUORESCIEIN			+	0.005		ND			0.005 ppb
EL-EO-2			QA-EOSINE			ND			+	0.005		0.005 ppb
EL-17I-0	10	05/19/11	MW-17PI	1100		B	0.026	507.8,POR	ND			
EL-18I-0	10	05/19/11	MW-18PI	1040		B	0.020	507.6,POR	ND			
EL-19I-0	10	05/19/11	MW-19PI	1020		B	0.026	508.0,POR	ND			
EL-19I-Q	10	05/19/11	MW-19PI	1020		ND	0.017	NPI	ND			LAB DUPLICATE/SAME SCAN/POR
EL-DUP-18	10	05/19/11	DUP-18	-			0.296	515.4	ND			
EL-DUP-19	10	05/19/11	DUP-19	-			0.160	513.4	ND			
ELUENT-3			QA-ELUENT			ND			ND			Control
EL-FL-3			QA-FLUORESCIEIN			+	0.005		ND			0.005 ppb
EL-FL-3A			QA-FLUORESCIEIN			+	0.101		ND			0.100 ppb
EH-FL-3			QA-FLUORESCIEIN			+	9.508		ND			10 ppb
EL-EO-3			QA-EOSINE			ND			+	0.004		0.005 ppb
EL-EO-3A			QA-EOSINE			ND			+	0.100		0.100 ppb
EH-EO-3			QA-EOSINE			ND			+	10.606		10 ppb
Analyzed by:		C. Davis		on		5/		Peakfit needed for accurate results				
Entered by:		L.Bledsoe		on		05/06/11						
Comments:		DUP = Field Duplicate B = Background ND = No Detection IB = Initial Background NS = No Sample Recovered GS = Grab Sample NPI = No Peak Identified POR = Peak Out of Range Q = Lab Duplicate + = Positive ?+ = Questionable Positive, needs two hits in a row to equal + Peakfit Utilized										

CRAWFORD HYDROLOGY LAB * HOFFMAN ENVIRONMENTAL RESEARCH INSTTI												
* Hydrogeologists, Geologists, Environmental Scientists * Karst Geophysical Subsurface Investigations * Karst Groundwater Investigations * Fluorescent Dye Analysis												
LABORATORY REPORT SHEET FLUORIMETRIC ANALYSIS RESULTS						FLUORESC EIN EOSINE Color Index: Color Index: Acid Yellow 73 Acid Red 87 Dye Receptor: Dye Receptor: Activated Charcoal Activated Charcoal Analysis by: Analysis by: Spectrofluorophotometer Spectrofluorophotometer						
Pall Corporation						Western Kentucky University Bowling Green, KY 42101 (270) 745-9224 E-mail: Crawford.Hydrology@wku.edu						
Analysis requested by: Ricky Chenenko - CDM												
Pall Corporation Site Site No. 1-30-53B 30-36 Sea Cliff Avenue Glen Cove, NY						CHARCOAL SAMPLES						
Lab ID	Event	Date Collected	Feature Name	TIME	Peakfit	Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	Comments
ELUENT-1			QA-ELUENT			ND			ND			Control
EL-FL-1			QA-FLUORESC EIN			+	0.005		ND			0.005 ppb
EL-FL-1A			QA-FLUORESC EIN			+	0.104		ND			0.100 ppb
EH-FL-1			QA-FLUORESC EIN			+	9.754		ND			10 PPB
EL-EO-1			QA-EOSINE			ND			+	0.006		0.005 ppb
EL-EO-1A			QA-EOSINE			ND			+	0.102		0.100 ppb
EH-EO-1			QA-EOSINE			ND			+	9.974		10 PPB
EL-01D-0	11	07/14/11	MW-1PD	1515		B	0.040	509.4,POR	ND			
EL-02D-0	11	07/14/11	MW-2AD	1500		ND	0.023	NPI	ND			
EL-02I-0	11	07/14/11	MW-2AI	1445		B	0.069	510.8,POR	ND			
EH-04D-3D	11	07/14/11	MW-4PD	1230			260220.000	515.6	ND			DILUTED 1:10,000
EL-04I-0	11	07/14/11	MW-4PI	1215			1.429	515.8	ND			
EL-05D-0	11	07/14/11	MW-5PD	1400			0.246	514.2	ND			
EL-05I-0	11	07/14/11	MW-5PI	1345			0.494	515.2	ND			
EL-06I-0	11	07/14/11	MW-6PI	1115		B	0.024	506.8,POR	ND			
EL-08I-0	11	07/14/11	MW-8PI	1045		ND			ND			
EL-10I-0	11	07/14/11	MW-10PI	1415			0.247	513.2	ND			
EL-10D-0	11	07/14/11	MW-10PD	1430			0.069	513.4	ND			
EL-11I-0	11	07/14/11	MW-11PI	1315			0.967	515.4	ND			
EL-11D-0	11	07/14/11	MW-11PD	1330			0.505	514.2	ND			
EL-12I-0	11	07/14/11	MW-12PI	1245			1.724	514.6	ND			
EL-12D-0	11	07/14/11	MW-12PD	1300			0.452	515.2	ND			
EL-13D-0	11	07/14/11	MW-13PD	1200			0.138	512.4	ND			
EL-13D-0	11	07/14/11	MW-13PD	1200			0.087	512.8	ND			LAB DUPLICATE
ELUENT-2			QA-ELUENT			ND			ND			Control
EL-FL-2			QA-FLUORESC EIN			+	0.005		ND			0.005 ppb
EL-EO-2			QA-EOSINE			ND			+	0.006		0.005 ppb
EL-13I-0	11	07/14/11	MW-13PI	1145		ND	0.015	NPI	ND			
EL-17I-0	11	07/14/11	MW-17PI	1130		B	0.035	508.6,POR	ND			
EL-18I-0	11	07/14/11	MW-18PI	1100		ND			ND			
EL-19I-0	11	07/14/11	MW-19PI	1030		B	0.016	508.4,POR	ND	0.035	NPI	
EL-DUP-20	11	07/14/11	DUP 20	-		B	0.066	510.8,POR	ND			
EL-DUP-21	11	07/14/11	DUP 21	-			0.113	513.6	ND			
ELUENT-3			QA-ELUENT			ND			ND			Control
EL-FL-3			QA-FLUORESC EIN			+	0.005		ND			0.005 ppb
EL-FL-3A			QA-FLUORESC EIN			+	0.104		ND			0.100 ppb
EH-FL-3			QA-FLUORESC EIN			+	9.775		ND			10 ppb
EL-EO-3			QA-EOSINE			ND			+	0.006		0.005 ppb
EL-EO-3A			QA-EOSINE			ND			+	0.101		0.100 ppb
EH-EO-3			QA-EOSINE			ND			+	10.001		10 ppb
Analyzed by: C. Davis on 07/19/11						Peakfit needed for accurate results						
Entered by: L. Bledsoe on 07/25/11												
Comments:												
DUP = Field Duplicate NS = No Sample Recovered Q = Lab Duplicate B = Background GS = Grab Sample + = Positive ND = No Detection NPI = No Peak Identified ?+ = Questionable Positive, needs two hits in a row to equal + IB = Initial Background POR = Peak Out of Range Peakfit Utilized												

CRAWFORD HYDROLOGY LAB * HOFFMAN ENVIRONMENTAL RESEARCH INS

* Hydrogeologists, Geologists, Environmental Scientists * Karst Geophysical Subsurface Investigations

* Karst Groundwater Investigations * Fluorescent Dye Analysis

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LABORATORY REPORT SHEET FLUORIMETRIC ANALYSIS RESULTS

Pall Corporation

Analysis requested by:

Ricky Chenenko - CDM

FLUORESCCEIN

Color Index:
Acid Yellow 73

Dye Receptor:
Activated Charcoal

Analysis by:
Spectrofluorophotometer

EOSINE

Color Index:
Acid Red 87

Dye Receptor:
Activated Charcoal

Analysis by:
Spectrofluorophotometer

Pall Corporation Site

Site No. 1-30-53B
30-36 Sea Cliff Avenue
Glen Cove, NY

CHARCOAL SAMPLES

Lab ID	Event	Date Collected	Feature Name	TIME	Peakfit	FLUORESCCEIN			EOSINE			Comments
						Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	
ELUENT-1			QA-ELUENT			ND			ND			Control
EL-FL-1			QA-FLUORESCCEIN			+	0.005		ND			0.005 ppb
EL-FL-1A			QA-FLUORESCCEIN			+	0.103		ND			0.100 ppb
EH-FL-1			QA-FLUORESCCEIN			+	9.741		ND			10 PPB
EL-EO-1			QA-EOSINE			ND			+	0.006		0.005 ppb
EL-EO-1A			QA-EOSINE			ND			+	0.101		0.100 ppb
EH-EO-1			QA-EOSINE			ND			+	9.836		10 PPB
EL-01D-0	12	08/18/11	MW-1PD	1430			0.432	515.6	ND			
EL-01I-0	12	08/18/11	MW-1PI	1420		B	0.052	508.6,POR	ND			
EL-02D-0	12	08/18/11	MW-2AD	1340		ND			ND			
EL-02D-Q	12	08/18/11	MW-2AD	1340		ND			ND			LAB DUPLICATE
EL-02I-0	12	08/18/11	MW-2AI	1320		ND			ND			
EH-04D-3D	12	08/18/11	MW-4PD	1405			118510.000	515.8	ND			DILUTED 1:10,000
EH-04I-0	12	08/18/11	MW-4PI	1355			1.333	516.0	ND			
EL-05D-0	12	08/18/11	MW-5PD	1245		B	0.035	508.8,POR	ND			
EL-05I-0	12	08/18/11	MW-5PI	1240			0.253	515.4	ND			
EH-06D-0	12	08/18/11	MW-6PD	1100		ND				7821.500	540.0	DILUTED 1:100
EL-06I-0	12	08/18/11	MW-6PI	1110		ND				0.280	538.2	
EL-08I-0	12	08/18/11	MW-8PI	1125		ND			ND			
EL-10I-0	12	08/18/11	MW-10PI	1255		B	0.120	510.2,POR	ND			
EL-10D-0	12	08/18/11	MW-10PD	1300		B	0.013	507.4,POR	ND			
ELUENT-2			QA-ELUENT			ND			ND			Control
EL-FL-2			QA-FLUORESCCEIN			+	0.005		ND			0.005 ppb
EL-EO-2			QA-EOSINE			ND			+	0.006		0.005 ppb
EL-11D-0	12	08/18/11	MW-11PD	1445			0.369	513.4	ND			
EL-11I-0	12	08/18/11	MW-11PI	1225		B	0.372	515.2	ND			
EL-12I-0	12	08/18/11	MW-12PI	1155			0.202	508.2,POR	ND			
EL-12D-0	12	08/18/11	MW-12PD	1200		B	0.041	509.0,POR	ND			
EL-13I-0	12	08/18/11	MW-13PI	1140		ND	0.012	NPI	ND			
EL-13D-0	12	08/18/11	MW-13PD	1145			0.074	513.0	ND			
EL-17I-0	12	08/18/11	MW-17PI	1135		ND	0.024	NPI	ND			
EL-18I-0	12	08/18/11	MW-18PI	1115		ND			ND			
EL-19I-0	12	08/18/11	MW-19PI	1130		B	0.016	508.0,POR	ND	0.027	NPI	
EL-DUP-22	12	08/18/11	DUP 22	-		ND			ND			
EL-DUP-23	12	08/18/11	DUP 23	-		ND			ND			
ELUENT-3			QA-ELUENT			ND			ND			Control
EL-FL-3			QA-FLUORESCCEIN			+	0.005		ND			0.005 ppb
EL-FL-3A			QA-FLUORESCCEIN			+	0.105		ND			0.100 ppb
EH-FL-3			QA-FLUORESCCEIN			+	9.915		ND			10 ppb
EL-EO-3			QA-EOSINE			ND			+	0.005		0.005 ppb
EL-EO-3A			QA-EOSINE			ND			+	0.099		0.100 ppb
EH-EO-3			QA-EOSINE			ND			+	9.979		10 ppb

Analyzed by: L.Bledsoe

Entered by: L.Bledsoe

Comments:

on 08/24/11

on 08/29/11

Peakfit needed for accurate results

DUP = Field Duplicate

B = Background

ND = No Detection

IB = Initial Background

NS = No Sample Recovered

GS = Grab Sample

NPI = No Peak Identified

POR = Peak Out of Range

Q = Lab Duplicate

+ = Positive

?+ = Questionable Positive, needs two hits in a row to equal +

Peakfit Utilized

ND Below Quantitation Limit

B Background

NS No Sample

+ Positive

++ Very Positive

+++ Extremely Positive

Created 4/19/2012

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* Hydrogeologists, Geologists, Environmental Scientists * Karst Geophysical Subsurface Investigations

* Karst Groundwater Investigations * Fluorescent Dye Analysis

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LABORATORY REPORT SHEET FLUORIMETRIC ANALYSIS RESULTS

Pall Corporation

Analysis requested by:

Ricky Chenenko - CDM

FLUORESCCEIN

Color Index:
Acid Yellow 73

Dye Receptor:
Activated Charcoal

Analysis by:
Spectrofluorophotometer

EOSINE

Color Index:
Acid Red 87

Dye Receptor:
Activated Charcoal

Analysis by:
Spectrofluorophotometer

Pall Corporation Site

Site No. 1-30-53B
30-36 Sea Cliff Avenue
Glen Cove, NY

CHARCOAL SAMPLES

Lab ID	Event	Date Collected	Feature Name	TIME	Peakfit	FLUORESCCEIN			EOSINE			Comments
						Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	
ELUENT-1			QA-ELUENT			ND			ND			Control
EL-FL-1			QA-FLUORESCCEIN			+	0.006		ND			0.005 ppb
EL-FL-1A			QA-FLUORESCCEIN			+	0.107		ND			0.100 ppb
EH-FL-1			QA-FLUORESCCEIN			+	10.035		ND			10 PPB
EL-EO-1			QA-EOSINE			ND			+	0.006		0.005 ppb
EL-EO-1A			QA-EOSINE			ND			+	0.103		0.100 ppb
EH-EO-1			QA-EOSINE			ND			+	10.454		10 PPB
EL-01D-0	13	09/22/11	MW-1PD	1350		B	0.028	507.6,POR	ND			
EL-01I-0	13	09/22/11	MW-1PI	1345		ND	0.023	NPI	ND			
EL-02D-0	13	09/22/11	MW-2AD	1105		ND	0.013	ND	ND			
EL-02I-0	13	09/22/11	MW-2AI	1110		B	0.022	506.2,POR	ND			
EH-04D-3D	13	09/22/11	MW-4PD	1300			94370.000	515.8	ND			DILUTED 1:10,000
EH-04I-0	13	09/22/11	MW-4PI	1305			1.242	515.6	ND			
EL-05D-0	13	09/22/11	MW-5PD	1217		ND	0.027	NPI	ND			
EL-05I-0	13	09/22/11	MW-5PI	1141			0.268	515.2	ND			
EH-06D-D	13	09/22/11	MW-6PD	1335		ND				71582.000	540.2	DILUTED 1:1000
EH-06I-0	13	09/22/11	MW-6PI	1330		ND				5.782	540.0	
EL-08I-0	13	09/22/11	MW-8PI	1332		ND				0.216	539.0	
EL-10I-0	13	09/22/11	MW-10PI	1155			0.139	511.0	ND			
EL-10D-0	13	09/22/11	MW-10PD	1150		B	0.022	507.2,POR	ND			
EL-11D-0	13	09/22/11	MW-11PD	1250		B	0.024	507.8,POR	ND			
EL-11I-0	13	09/22/11	MW-11PI	1245			0.359	515.2	ND			
ELUENT-2			QA-ELUENT			ND			ND			Control
EL-FL-2			QA-FLUORESCCEIN			+	0.006		ND			0.005 ppb
EL-EO-2			QA-EOSINE			ND			+	0.006		0.005 ppb
EL-12I-0	13	09/22/11	MW-12PI	1215		B	0.304	510.0,POR	ND			
EL-12D-0	13	09/22/11	MW-12PD	1230		B	0.031	508.0,POR	ND			
EL-12D-Q	13	09/22/11	MW-12PD	1230		B	0.031	507.8,POR	ND			LAB DUPLICATE
EL-13I-0	13	09/22/11	MW-13PI	1315		ND	0.024	NPI	ND			
EL-13D-0	13	09/22/11	MW-13PD	1320			0.105	512.6	ND			
EL-17I-0	13	09/22/11	MW-17PI	1325		B	0.102	509.0,POR	ND			
EL-18I-0	13	09/22/11	MW-18PI	1330		ND				0.139	535.4	
EL-19I-0	13	09/22/11	MW-19PI	1340		ND			ND	0.145	NPI	
EL-DUP-24	13	09/22/11	DUP 24	1333		ND				0.533	539.6	
EL-DUP-25	13	09/22/11	DUP 25	1343		ND	0.025	507.0,POR	ND			
ELUENT-3			QA-ELUENT			ND			ND			Control
EL-FL-3			QA-FLUORESCCEIN			+	0.006		ND			0.005 ppb
EL-FL-3A			QA-FLUORESCCEIN			+	0.107		ND			0.100 ppb
EH-FL-3			QA-FLUORESCCEIN			+	9.936		ND			10 ppb
EL-EO-3			QA-EOSINE			ND			+	0.006		0.005 ppb
EL-EO-3A			QA-EOSINE			ND			+	0.103		0.100 ppb
EH-EO-3			QA-EOSINE			ND			+	10.317		10 ppb

Analyzed by:

C. Davis

on

09/28/11

Entered by:

L. Bledsoe

on

09/29/11

Comments:

Peakfit needed for accurate results

DUP = Field Duplicate

B = Background

ND = No Detection

IB = Initial Background

NS = No Sample Recovered

GS = Grab Sample

NPI = No Peak Identified

POR = Peak Out of Range

Q = Lab Duplicate

+ = Positive

?+ = Questionable Positive, needs two hits in a row to equal +

Peakfit Utilized

ND Below Quantitation Limit

B Background

NS No Sample

+ Positive

++ Very Positive

+++ Extremely Positive

Created 4/19/2012

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* Hydrogeologists, Geologists, Environmental Scientists * Karst Geophysical Subsurface Investigations

* Karst Groundwater Investigations * Fluorescent Dye Analysis

LABORATORY REPORT SHEET FLUORIMETRIC ANALYSIS RESULTS

Pall Corporation

Analysis requested by:

Ricky Chenenko

FLUORESCCEIN

Color Index:
Acid Yellow 73

Dye Receptor:
Activated Charcoal

Analysis by:
Spectrofluorophotometer

EOSINE

Color Index:
Acid Red 87

Dye Receptor:
Activated Charcoal

Analysis by:
Spectrofluorophotometer

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Bowling Green, KY 42101
(270) 745-9224

E-mail: Crawford.Hydrology@wku.edu

Pall Corporation Site Site No. 1-30-53B 30-36 Sea Cliff Avenue Glen Cove, NY										ALL SAMPLES					
										FLUORESCCEIN			EOSINE		
										PQL in Eluent: 0.005 ppb PQL in Water: 0.010 ppb			PQL in Eluent: 0.005 ppb PQL in Water: 0.010 ppb		
										λ in Eluent: 516.0 nm			λ in Eluent: 540.4 nm		
										λ in Water: 510.2 nm			λ in Water: 534.7 nm		
Lab ID	Event	Date Collected	Feature Name	TIME	Peakfit	Results	Conc in ppb	Peak Center (nm)		Results	Conc in ppb	Peak Center (nm)			Comments
EL-01D-0	BG1	10/21/10	MW-1PD	1200		ND				ND					
EL-01D-0	03	12/30/10	MW-1PD	1125		ND	0.005	NPI		ND					
EL-01D-0	04	01/19/11	MW-1PD	1420		ND				ND					
EL-01D-0	05	02/07/11	MW-1PD	1415		ND	0.007	NPI		ND					
EL-01D-0	06	02/23/11	MW-1PD	1230		ND	0.010	NPI		ND					
EL-01D-0	07	03/16/11	MW-1PD	1420		B	0.025	507.2,POR		ND					
EL-01D-0	08	04/08/11	MW-1PD	1420		B	0.056	510.8,POR		ND					
EL-01D-0	09	04/27/11	MW-1PD	1420		+	0.224	515.2		ND					
EL-01D-0	10	05/19/11	MW-1PD	1340		B	0.024	507.2,POR		ND					
EL-01D-0	11	07/14/11	MW-1PD	1515		B	0.040	509.4,POR		ND					
EL-01D-0	12	08/18/11	MW-1PD	1430		+	0.432	515.6		ND					
EL-01D-0	13	09/22/11	MW-1PD	1350		B	0.028	507.6,POR		ND					
EL-01I-0	12	08/18/11	MW-1PI	1420		B	0.052	508.6,POR		ND					NO BACKGROUND
EL-01I-0	13	09/22/11	MW-1PI	1345		ND	0.023	NPI		ND					
EL-02I-0	BG1	10/21/10	MW-2AI	1530		ND				ND					
EL-02I-0	03	12/29/10	MW-2AI	1450		ND	0.006	NPI		ND					
EL-02I-0	04	01/19/11	MW-2AI	1100		+	0.087	515.6		ND					
EL-02I-0	05	02/07/11	MW-2AI	1355		B	0.049	515.6		ND					*0.001 BELOW POSITIVE DETECTION
EL-02I-0	06	02/23/11	MW-2AI	1210		+	0.069	515.2		ND					
EL-02I-0	07	03/16/11	MW-2AI	1350		B	0.025	507.6,POR		ND					
EL-02I-0	08	04/08/11	MW-2AI	1400		+	0.164	514.2		ND					
EL-02I-0	09	04/27/11	MW-2AI	1350		+	0.094	513.4		ND					
EL-02I-0	10	05/19/11	MW-2AI	1310		B	0.034	509.0,POR		ND					
EL-02I-0	11	07/14/11	MW-2AI	1445		B	0.069	510.8,POR		ND					
EL-02I-0	12	08/18/11	MW-2AI	1320		ND				ND					
EL-02I-0	13	09/22/11	MW-2AI	1110		B	0.022	506.2,POR		ND					
EL-02D-0	BG1	10/21/10	MW-2AD	1540		ND				ND					
EL-02D-0	03	12/29/10	MW-2AD	1500		ND				ND					
EL-02D-0	04	01/19/11	MW-2AD	1110		+	0.114	514.6		ND					
EL-02D-0	05	02/07/11	MW-2AD	1400		B	0.050	509.6,POR		ND					
EL-02D-0	06	02/23/11	MW-2AD	1210		B	0.028	513.0		ND					
EL-02D-0	07	03/16/11	MW-2AD	1400		B	0.026	512.8		ND					
EL-02D-0	08	04/08/11	MW-2AD	1405		+	0.485	514.6		ND					
EL-02D-0	09	04/27/11	MW-2AD	1400		+	0.134	512.0		ND					
EL-02D-0	10	05/19/11	MW-2AD	1320		ND	0.031	NPI		ND					
EL-02D-0	11	07/14/11	MW-2AD	1500		ND	0.023	NPI		ND					
EL-02D-0	12	08/18/11	MW-2AD	1340		ND				ND					
EL-02D-0	13	09/22/11	MW-2AD	1105		ND	0.013	ND		ND					
EL-04I-0	BG1	10/21/10	MW-4PI	1315		IB	0.537	515.4		ND					
EH-04I-0	02	12/06/10	MW-4PI	1255		ND	21.271	NPI		ND					PEAKFIT STATS OUT OF RANGE, PEAK AT 529.9
EH-04I-0	03	12/30/10	MW-4PI	830		B	0.354	510.4,POR		ND					PEAKFIT SHOWS STONGEST PEAK AT 528
EH-04I-0	04	01/19/11	MW-4PI	1215		B	1.146	512.3		B	0.027	544.1			PEAKFIT STATS OUT OF RANGE for FL
EH-04I-0	05	02/07/11	MW-4PI	1305		B	0.536	512.6		+	1.362	538.3			PEAKFIT STATS OUT OF RANGE
EH-04I-0	06	02/23/11	MW-4PI	1105		+++	1368.900	515.6		ND					1:100 DILUTION
EH-04I-0	07	03/16/11	MW-4PI	1210		+	17.749	515.8		ND					
EH-04I-0	08	04/08/11	MW-4PI	1230		B	4.441	516.4		ND					
EH-04I-0	09	04/27/11	MW-4PI	1210		B	1.140	515.8		ND					
EL-04I-0	10	05/19/11	MW-4PI	1130		B	0.888	508.4,POR		ND					
EL-04I-0	11	07/14/11	MW-4PI	1215		B	1.429	515.8		ND					
EH-04I-0	12	08/18/11	MW-4PI	1355		B	1.333	516.0		ND					
EH-04I-0	13	09/22/11	MW-4PI	1305		B	1.242	515.6		ND					
EL-04D-0	BG1	10/21/10	MW-4PD	1310		ND				ND					
EH-04D-3D	07	03/16/11	MW-4PD	1220		+++	675800.000	515.6		ND					DILUTED 1:10,000
EH-04D-3D	08	04/08/11	MW-4PD	1235		+++	807640.000	515.8		ND					DILUTED 1:10,000
EH-04D-3D	09	04/27/11	MW-4PD	1220		+++	465040.000	515.8		ND					DILUTED 1:10,000
EH-04D-3D	10	05/19/11	MW-4PD	1140		+++	449380.000	515.8		ND					DILUTED 1:10,000
EH-04D-3D	11	07/14/11	MW-4PD	1230		+++	260220.000	515.6		ND					DILUTED 1:10,000
EH-04D-3D	12	08/18/11	MW-4PD	1405		+++	118510.000	515.8		ND					DILUTED 1:10,000

ND Below Quantitation Limit

B Background

NS No Sample

+ Positive

++ Very Positive

+++ Extremely Positive

Created 4/19/2012

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Pall Corporation Site Site No. 1-30-53B 30-36 Sea Cliff Avenue Glen Cove, NY					ALL SAMPLES							
					FLUORESCIN			EOSINE				
					PQL in Eluent: 0.005 ppb			PQL in Eluent: 0.005 ppb				
					PQL in Water: 0.010 ppb			PQL in Water: 0.010 ppb				
Lab ID	Event	Date Collected	Feature Name	TIME	Peakfit	λ in Eluent: 516.0 nm			λ in Eluent: 540.4 nm			
						λ in Water: 510.2 nm			λ in Water: 534.7 nm			
						Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	Comments
EH-04D-3D	13	09/22/11	MW-4PD	1300			94370.000	515.8	ND			DILUTED 1:10,000
EL-05I-0	BG1	10/21/10	MW-5PI	1420		IB	0.170	515.4	ND			
EL-05I-0	02	12/06/10	MW-5PI	1322		B	0.252	515.4	ND			
EL-05I-0	03	12/29/10	MW-5PI	1345		B	0.311	515.4	ND			
EL-05I-0	04	01/19/11	MW-5PI	1115		B	0.151	514.8	ND			
EL-05I-0	05	02/07/11	MW-5PI	1330		B	0.244	514.8	ND			
EL-05I-0	06	02/23/11	MW-5PI	1125		B	0.141	515.0	ND			
EL-05I-0	07	03/16/11	MW-5PI	1310		+?	2.430	515.4	ND			
EL-05I-0	08	04/08/11	MW-5PI	1320		B	0.766	515.6	ND			
EL-05I-0	09	04/27/11	MW-5PI	1310		B	0.453	515.6	ND			
EL-05I-0	10	05/19/11	MW-5PI	1210		B	0.320	515.6	ND			
EL-05I-0	11	07/14/11	MW-5PI	1345		B	0.494	515.2	ND			
EL-05I-0	12	08/18/11	MW-5PI	1240		B	0.253	515.4	ND			
EL-05I-0	13	09/22/11	MW-5PI	1141		B	0.268	515.2	ND			
EL-05D-0	BG1	10/21/10	MW-5PD	1430		ND			ND			
EL-05D-0	03	12/29/10	MW-5PD	1330		ND	0.009	NPI	ND			
EL-05D-0	04	01/19/11	MW-5PD	1125		ND	0.006	NPI	ND			
EL-05D-0	05	02/07/11	MW-5PD	1335		ND	0.009	NPI	ND			
EL-05D-0	06	02/23/11	MW-5PD	1130		+	0.154	515.0	ND			
EL-05D-0	07	03/16/11	MW-5PD	1320		+	0.076	512.4	ND			
EL-05D-0	08	04/08/11	MW-5PD	1325		++	1.875	515.6	ND			
EL-05D-0	09	04/27/11	MW-5PD	1320		+	0.352	515.2	ND			
EL-05D-0	10	05/19/11	MW-5PD	1220		B	0.177	510.8,POR	ND			
EL-05D-0	11	07/14/11	MW-5PD	1400		+?	0.246	514.2	ND			
EL-05D-0	12	08/18/11	MW-5PD	1245		B	0.035	508.8,POR	ND			
EL-05D-0	13	09/22/11	MW-5PD	1217		ND	0.027	NPI	ND			
EL-06I-0	BG1	10/21/10	MW-6PI	1245		ND			ND			
EL-06I-0	02	12/06/10	MW-6PI	1445		ND	0.017	NPI	ND			
EL-06I-0	03	12/30/10	MW-6PI	802		ND	0.013	NPI	ND			
EL-06I-0	04	01/19/11	MW-6PI	1310		ND			ND	0.024	NPI	
EL-06I-0	05	02/07/11	MW-6PI	1245		ND	0.019	NPI	ND			
EL-06I-0	06	02/23/11	MW-6PI	1045		ND	0.010	NPI	ND			
EL-06I-0	07	03/16/11	MW-6PI	1130		ND	0.012	NPI	ND			
EL-06I-0	08	04/08/11	MW-6PI	1200		B	0.023	506.8,POR	ND			
EL-06I-0	09	04/27/11	MW-6PI	1140		B	0.031	507.4,POR	ND			
EL-06I-0	10	05/19/11	MW-6PI	1050		B	0.019	514.6	ND			
EL-06I-0	11	07/14/11	MW-6PI	1115		B	0.024	506.8,POR	ND			
EL-06I-0	12	08/18/11	MW-6PI	1110		ND			+	0.280	538.2	
EH-06I-0	13	09/22/11	MW-6PI	1330		ND			+++	5.782	540.0	
EL-06D-0	BG1	10/21/10	MW-6PD	1250		ND			ND			
EH-06D-D	12	08/18/11	MW-6PD	1100		ND			+++	7821.500	540.0	DILUTED 1:100
EH-06D-D	13	09/22/11	MW-6PD	1335		ND			+++	71582.000	540.2	DILUTED 1:1000
EL-08I-0	BG1	10/21/10	MW-8PI	1236		ND			ND			
EL-08I-0	02	12/06/10	MW-8PI	1212		ND			ND			
EL-08I-0	03	12/30/10	MW-8PI	1220		ND			ND			
EL-08I-0	04	01/19/11	MW-8PI	1325		ND			ND			
EL-08I-0	05	02/07/11	MW-8PI	1235		ND	0.009	NPI	ND			
EL-08I-0	06	02/23/11	MW-8PI	1035		ND			ND			
EL-08I-0	07	03/16/11	MW-8PI	110		ND	0.025	NPI	ND			
EL-08I-0	08	04/08/11	MW-8PI	1158		B	0.017	506.2,POR	ND			
EL-08I-0	09	04/27/11	MW-8PI	1120		B	0.015	505.0,POR	ND			
EL-08I-0	10	05/19/11	MW-8PI	1030		ND	0.010	NPI	ND			
EL-08I-0	11	07/14/11	MW-8PI	1045		ND			ND			
EL-08I-0	12	08/18/11	MW-8PI	1125		ND			ND			
EL-08I-0	13	09/22/11	MW-8PI	1332		ND			+?	0.216	539.0	
EL-10I-0	BG1	10/21/10	MW-10PI	1520		IB	0.267	514.6	ND			
EL-10I-0	02	12/06/10	MW-10PI	1416		B	0.049	513.8	ND			
EL-10I-0	03	12/29/10	MW-10PI	1630		B	0.059	513.4	ND			
EL-10I-0	04	01/19/11	MW-10PI	1105		B	0.052	513.4	ND			
EL-10I-0	05	02/07/11	MW-10PI	1350		B	0.074	509.4,POR	ND			
EL-10I-0	06	02/23/11	MW-10PI	1155		B	0.063	512.8	ND			
EL-10I-0	07	03/16/11	MW-10PI	1330		B	0.143	514.2	ND			
EL-10I-0	08	04/08/11	MW-10PI	1340		B	0.556	515.4	ND			
EL-10I-0	09	04/27/11	MW-10PI	1330		B	0.288	515.4	ND			
EL-10I-0	10	05/19/11	MW-10PI	1250		B	0.119	506.4,POR	ND			
EL-10I-0	11	07/14/11	MW-10PI	1415		B	0.247	513.2	ND			
EL-10I-0	12	08/18/11	MW-10PI	1255		B	0.120	510.2,POR	ND			
EL-10I-0	13	09/22/11	MW-10PI	1155		B	0.139	511.0	ND			
EL-10D-0	BG1	10/21/10	MW-10PD	1515		B	0.011	509.0,POR	ND			
EL-10D-0	02	12/06/10	MW-10PD	1420		ND			ND			
EL-10D-0	03	12/29/10	MW-10PD	1640		B	0.011	510.0,POR	ND			
EL-10D-0	04	01/19/11	MW-10PD	1055		B	0.013	508.6,POR	ND			

ND Below Quantitation Limit

B Background

NS No Sample

+ Positive

++ Very Positive

+++ Extremely Positive

Created 4/19/2012

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Pall Corporation Site Site No. 1-30-53B 30-36 Sea Cliff Avenue Glen Cove, NY						ALL SAMPLES						
						FLUORESCIN			EOSINE			Comments
						PQL in Eluent: 0.005 ppb			PQL in Eluent: 0.005 ppb			
						PQL in Water: 0.010 ppb			PQL in Water: 0.010 ppb			
						λ in Eluent: 516.0 nm			λ in Eluent: 540.4 nm			
						λ in Water: 510.2 nm			λ in Water: 534.7 nm			
Lab ID	Event	Date Collected	Feature Name	TIME	Peakfit	Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	
EL-10D-0	05	02/07/11	MW-10PD	1340		+?	0.282	514.2	ND			
EL-10D-0	06	02/23/11	MW-10PD	1200		B	0.011	511.0	ND			
EL-10D-0	07	03/16/11	MW-10PD	1340		B	0.044	510.4,POR	ND			
EL-10D-0	08	04/08/11	MW-10PD	1345		+	0.066	512.6	ND			
EL-10D-0	09	04/27/11	MW-10PD	1340		+	0.149	514.6	ND			
EL-10D-0	10	05/19/11	MW-10PD	1300		B	0.029	508.2,POR	ND			
EL-10D-0	11	07/14/11	MW-10PD	1430		+?	0.069	513.4	ND			
EL-10D-0	12	08/18/11	MW-10PD	1300		B	0.013	507.4,POR	ND			
EL-10D-0	13	09/22/11	MW-10PD	1150		B	0.022	507.2,POR	ND			
EL-11I-0	BG1	10/21/10	MW-11PI	1450		IB	0.080	514.8	ND			
EL-11I-0	02	12/06/10	MW-11PI	1345		B	0.110	514.6	ND			
EL-11I-0	03	12/29/10	MW-11PI	1430		B	0.108	514.6	ND			
EL-11I-0	04	01/19/11	MW-11PI	1140		B	0.080	514.0	ND			
EL-11I-0	05	02/07/11	MW-11PI	1325		B	0.097	512.8	ND			
EL-11I-0	06	02/23/11	MW-11PI	1145		B	0.090	515.4	ND			
EL-11I-0	07	03/16/11	MW-11PI	1250		B	0.439	515.2	ND			
EL-11I-0	08	04/08/11	MW-11PI	1300		B	0.607	515.6	ND			
EL-11I-0	09	04/27/11	MW-11PI	1250		B	0.489	515.6	ND			
EL-11I-0	10	05/19/11	MW-11PI	1230		+	1.025	513.0	ND			
EL-11I-0	11	07/14/11	MW-11PI	1315		+	0.967	515.4	ND			
EL-11I-0	12	08/18/11	MW-11PI	1225		B	0.372	515.2	ND			
EL-11I-0	13	09/22/11	MW-11PI	1245		B	0.359	515.2	ND			
EL-11D-0	BG1	10/21/10	MW-11PD	1455		ND			ND			
EL-11D-0	02	12/06/10	MW-11PD	1350		ND	0.013	NPI	ND	0.005	NPI	
EL-11D-0	03	12/29/10	MW-11PD	1415		ND	0.019	NPI	ND			
EL-11D-0	04	01/19/11	MW-11PD	1130		ND	0.012	NPI	ND			
EL-11D-0	05	02/07/11	MW-11PD	1320		ND	0.029	NPI	ND			
EL-11D-0	06	02/23/11	MW-11PD	1150		B	0.028	510.8,POR	ND			
EL-11D-0	07	03/16/11	MW-11PD	1300		+	0.424	515.2	ND			
EL-11D-0	08	04/08/11	MW-11PD	1305		+	0.166	514.4	ND			
EL-11D-0	09	04/27/11	MW-11PD	1300		+	0.454	515.2	ND			
EL-11D-0	10	05/19/11	MW-11PD	1240		B	0.050	508.0,POR	ND			
EL-11D-0	11	07/14/11	MW-11PD	1330		++	0.505	514.2	ND			
EL-11D-0	12	08/18/11	MW-11PD	1445		+	0.369	513.4	ND			
EL-11D-0	13	09/22/11	MW-11PD	1250		B	0.024	507.8,POR	ND			
EL-12I-0	BG1	10/21/10	MW-12PI	1330		ND			ND			
EL-12I-0	02	12/06/10	MW-12PI	1305		ND	0.034	NPI	ND			
EL-12I-0	03	12/30/10	MW-12PI	NA		ND	0.031	NPI	ND			
EL-12I-0	04	01/19/11	MW-12PI	1045		ND	0.020	NPI	ND			
EL-12I-0	05	02/07/11	MW-12PI	1315		B	0.030	506.6,POR	ND			
EL-12I-0	06	02/23/11	MW-12PI	1115		+	0.324	514.6	ND			
EL-12I-0	07	03/16/11	MW-12PI	1230		++	0.705	514.8	ND			
EL-12I-0	08	04/08/11	MW-12PI	1245		++	0.810	515.0	ND			
EL-12I-0	09	04/27/11	MW-12PI	1230		+	0.231	513.6	ND			
EL-12I-0	10	05/19/11	MW-12PI	1150		+	0.184	515.6	ND			
EL-12I-0	11	07/14/11	MW-12PI	1245		++	1.724	514.6	ND			
EL-12I-0	12	08/18/11	MW-12PI	1155		+	0.202	508.2,POR	ND			
EL-12I-0	13	09/22/11	MW-12PI	1215		B	0.304	510.0,POR	ND			
EL-12D-0	BG1	10/21/10	MW-12PD	1335		ND			ND			
EL-12D-0	02	12/06/10	MW-12PD	1300		B	0.008	512.0	ND			
EL-12D-0	03	12/30/10	MW-12PD	NA		B	0.006	506.0,POR	ND			
EL-12D-0	04	01/19/11	MW-12PD	1050		ND			ND			
EL-12D-0	05	02/07/11	MW-12PD	1310		ND	0.009	NPI	ND			
EL-12D-0	06	02/23/11	MW-12PD	1120		+	0.174	515.0	ND			
EL-12D-0	07	03/16/11	MW-12PD	1240		+	0.103	514.4	ND			
EL-12D-0	08	04/08/11	MW-12PD	1250		++	0.826	515.6	ND			
EL-12D-0	09	04/27/11	MW-12PD	1240		+	0.235	514.8	ND			
EL-12D-0	10	05/19/11	MW-12PD	1200		+	0.099	514.2	ND			
EL-12D-0	11	07/14/11	MW-12PD	1300		+	0.452	515.2	ND			
EL-12D-0	12	08/18/11	MW-12PD	1200		B	0.041	509.0,POR	ND			
EL-12D-0	13	09/22/11	MW-12PD	1230		B	0.031	508.0,POR	ND			
EL-13I-0	BG1	10/21/10	MW-13PI	1330		ND			ND			
EL-13I-0	03	12/30/10	MW-13PI	903		+?	0.890	515.8	ND			
EL-13I-0	04	01/19/11	MW-13PI	1240		ND			ND			
EL-13I-0	05	02/07/11	MW-13PI	1255		B	0.035	507.8,POR	ND			
EL-13I-0	06	02/23/11	MW-13PI	1055		ND	0.005	NPI	ND			
EL-13I-0	07	03/16/11	MW-13PI	1150		ND	0.018	NPI	ND			
EL-13I-0	08	04/08/11	MW-13PI	1215		+?	0.321	515.2	ND			
EL-13I-0	09	04/27/11	MW-13PI	1150		B	0.018	507.0,POR	ND			
EL-13I-0	10	05/19/11	MW-13PI	1110		B	0.017	510.0,POR	ND			
EL-13I-0	11	07/14/11	MW-13PI	1145		ND	0.015	NPI	ND			
EL-13I-0	12	08/18/11	MW-13PI	1140		ND	0.012	NPI	ND			
EL-13I-0	13	09/22/11	MW-13PI	1315		ND	0.024	NPI	ND			

ND Below Quantitation Limit

B Background

NS No Sample

+ Positive

++ Very Positive

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Created 4/19/2012

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Pall Corporation Site Site No. 1-30-53B 30-36 Sea Cliff Avenue Glen Cove, NY					ALL SAMPLES							
					FLUORESCIN			EOSINE				
					PQL in Eluent: 0.005 ppb			PQL in Eluent: 0.005 ppb				
					PQL in Water: 0.010 ppb			PQL in Water: 0.010 ppb				
					λ in Eluent: 516.0 nm			λ in Eluent: 540.4 nm				
λ in Water: 510.2 nm			λ in Water: 534.7 nm									
Lab ID	Event	Date Collected	Feature Name	TIME	Peakfit	Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	Comments
EL-13D-0	BG1	10/21/10	MW-13PD	1305		B	0.009	509.8,POR	ND			
EL-13D-0	03	12/30/10	MW-13PD	935		B	0.019	510.6,POR	ND			
EL-13D-0	04	01/19/11	MW-13PD	1250		B	0.019	510.0,POR	ND			
EL-13D-0	05	02/07/11	MW-13PD	1300		B	0.033	508.2,POR	ND			
EL-13D-0	06	02/23/11	MW-13PD	1100		B	0.022	507.2,POR	ND			
EL-13D-0	07	03/16/11	MW-13PD	1200		B	0.044	508.8,POR	ND			
EL-13D-0	08	04/08/11	MW-13PD	1220		B	0.031	509.4,POR	ND			
EL-13D-0	09	04/27/11	MW-13PD	1200		+?	0.122	514.2	ND			
EL-13D-0	10	05/19/11	MW-13PD	1120		B	0.041	509.0,POR	ND			
EL-13D-0	11	07/14/11	MW-13PD	1200		+	0.138	512.4	ND			
EL-13D-0	12	08/18/11	MW-13PD	1145		+	0.074	513.0	ND			
EL-13D-0	13	09/22/11	MW-13PD	1320		+	0.105	512.6	ND			
EL-17I-0	BG1	10/21/10	MW-17PI	1255		ND			ND			
EL-17I-0	02	12/06/10	MW-17PI	1224		ND	0.007	NPI	ND			
EL-17I-0	03	12/30/10	MW-17PI	1000		ND	0.008	NPI	ND			
EL-17I-0	04	01/19/11	MW-17PI	1300		ND	0.010	NPI	ND			
EL-17I-0	05	02/07/11	MW-17PI	1250		B	0.044	509.2,POR	ND			
EL-17I-0	06	02/23/11	MW-17PI	1050		ND			ND	0.047	NPI	
EL-17I-0	07	03/16/11	MW-17PI	1140		B	0.021	507.2,POR	ND			
EL-17I-0	08	04/08/11	MW-17PI	1210		ND	0.022	NPI	ND			
EL-17I-0	09	04/27/11	MW-17PI	1140		B	0.040	508.4,POR	ND			
EL-17I-0	10	05/19/11	MW-17PI	1100		B	0.026	507.8,POR	ND			
EL-17I-0	11	07/14/11	MW-17PI	1130		B	0.035	508.6,POR	ND			
EL-17I-0	12	08/18/11	MW-17PI	1135		ND	0.024	NPI	ND			
EL-17I-0	13	09/22/11	MW-17PI	1325		B	0.102	509.0,POR	ND			
EL-18I-0	BG1	10/21/10	MW-18PI	1226		ND			ND			
EL-18I-0	02	12/06/10	MW-18PI	1245		ND			ND			
EL-18I-0	03	12/30/10	MW-18PI	1101		ND			ND			
EL-18I-0	04	01/19/11	MW-18PI	1325		ND			ND			
EL-18I-0	05	02/07/11	MW-18PI	1240		ND	0.010	NPI	ND			
EL-18I-0	06	02/23/11	MW-18PI	1040		ND			ND			
EL-18I-0	07	03/16/11	MW-18PI	1120		ND	0.008	NPI	ND			
EL-18I-0	08	04/08/11	MW-18PI	1155		+?	0.081	512.8	ND			
EL-18I-0	09	04/27/11	MW-18PI	1130		ND	0.014	NPI	ND			
EL-18I-0	10	05/19/11	MW-18PI	1040		B	0.020	507.6,POR	ND			
EL-18I-0	11	07/14/11	MW-18PI	1100		ND			ND			
EL-18I-0	12	08/18/11	MW-18PI	1115		ND			ND			
EL-18I-0	13	09/22/11	MW-18PI	1330		ND			+?	0.139	535.4	
EL-19I-0	BG1	10/21/10	MW-19PI	1215		B	0.030	510,POR	ND			
EL-19I-0	03	12/30/10	MW-19PI	1145		ND	0.006	NPI	ND			
EL-19I-0	04	01/19/11	MW-19PI	1345		ND			ND			
EL-19I-0	05	02/07/11	MW-19PI	1230		ND	0.006	NPI	ND			
EL-19I-0	06	02/23/11	MW-19PI	1030		ND			ND			
EL-19I-0	07	03/16/11	MW-19PI	1100		B	0.029	508.6,POR	ND			
EL-19I-0	08	04/08/11	MW-19PI	1145		B	0.055	510.4,POR	ND			
EL-19I-0	09	04/27/11	MW-19PI	1115		B	0.013	506.8,POR	ND			
EL-19I-0	10	05/19/11	MW-19PI	1020		B	0.026	508.0,POR	ND			
EL-19I-0	11	07/14/11	MW-19PI	1030		B	0.016	508.4,POR	ND	0.035	NPI	
EL-19I-0	12	08/18/11	MW-19PI	1130		B	0.016	508.0,POR	ND	0.027	NPI	
EL-19I-0	13	09/22/11	MW-19PI	1340		ND			ND	0.145	NPI	
Project:		PALL		Contact:	RICKY CHENENKO			Peakfit needed for accurate results				
Approved by:		L.BLED SOE		on:	09/28/11							
Comments:												
DUP = Field Duplicate			NS = No Sample Recovered			Q = Lab Duplicate						
B = Background			GS = Grab Sample			+ = Positive						
ND = No Detection			NPI = No Peak Identified			?+ = Questionable Positive, needs two hits in a row to equal +						
IB = Initial Background			POR = Peak Out of Range			Peakfit Utilized						

Background Study for Tracer Test

10:30 Heather Hallett and Eric Rosenzweig (CDM) arrive on site to put in charcoal receptors for background monitoring in preparation for tracer test

10:45 Began to locate wells for tracer test and gauge them

Well ID	DTW	DTB	
MW-6PI	1.45	57	
MW-6PD	1.23		
MW-6PD2	-	126	
MW-17PI	0.96	54	
MW-18PI	1.16	56	
MW-8PI	1.49	49.35	
MW-19PI	1.46	55.55	
MW-13PI	0.91	49.8	
MW-13PD	0.10	95	
MW-1PD	0.73	98	
MW-4PD	artesian	102	
MW-4PI	artesian	49	
MW-5PI	0.68		
MW-12PI	0.68	47.42	
MW-12PD	artesian	100.10	

no receptor installed

newcap

newcap

Well ID	DTW	DTB	
MW-11PI	artesian	49	
MW-11PD	artesian	94	
MW-5PI	artesian	65.3	
MW-5PI	0	56	
MW-5PD	artesian	65.3	
MW-10PI	0.16	48.7	
MW-10PD	artesian	97.3	
MW-2PD	artesian	106.3	
MW-2PI	artesian	49.3	

new cap on MW-55

silty, new cap

14:10 Finished inserting carbon in wells
 12:35 Collected sample from MW-12PI
 14:15 Collected sample from MW-4PD
 At direction of Ricky Chianko did not purge wells before sampling
 lowered boiler to bottom of well.
 Samples will be submitted to Crawford Hydrology Labs for matrix interference analysis for tracer testing
 14:30 CDM off site

Location

Ball/Clen Cove, NY

Date

10/21/10

Project / Client

NYSDC

Background Test for Tracer Testing

11:30 CDM (Heather Hallett) on-site to remove carbon receptors for background tracer testing
 weather: 60°F, overcast, on and off rain

11:40 Started removing carbon receptors from wells where inserted on 9/30/10

Left marble packs in wells and poured 6W sample through mesh bags into clean vial as instructed by Crawford Labs.

MW-4D - not leaking anymore

after new cap put on

MW-4D2 T-ping still holding, not leaking

MW-12D2 J-ping damaged, leaking, replaced cap

MW-12D - not leaking anymore with new cap

MW-5PD leaking, put on new cap

other 5 cluster wells ok
 ponding in area from rain and MW-5PD leaking

Location

Ball/Clen Cove, NY

Date

10/21/10

Project / Client

NYSDC

Background test for tracer testing

MW-2PD not leaking with new cap

MW-2AI maybe leaking a little with J-ping so put on a new cap (Femco)

New Fernco cap would not fit on MW-2AI so put J-ping back on it

MW-10 cluster ok, not leaking
 10:00 CDM off site

~~NYSDC~~
 10/21/10

Location

Glen Cove, NY

Date

11/15/10

Project / Client

Fall / NYSDCE

Installing carbon receptors - dyetest

14:00 Heather Hallett (GDM) onsite
 in insert carbon receptors
 in monitoring wells in
 preparation for dye injection
 tomorrow.

Weather: sunny 55°F, little wind
 14:15 Started installing carbon
 receptors.

Appears that part of the
 parking lot on north side
 of site near daycare has
 been broken up (pavement broken
 up). Does not seem to have affected
 any of the monitoring wells.

Installed carbon receptors in

MW-4PD (will have to remove for dye injection)

MW-4PI

MW-12PI

MW-12PD receptor stuck part way down well

MW-11PI

MW-11PD

MW-5PI

MW-5PD

MW-18PI

Location

Glen Cove, NY

Date

11/15/10

Project / Client

Fall / NYSDCE

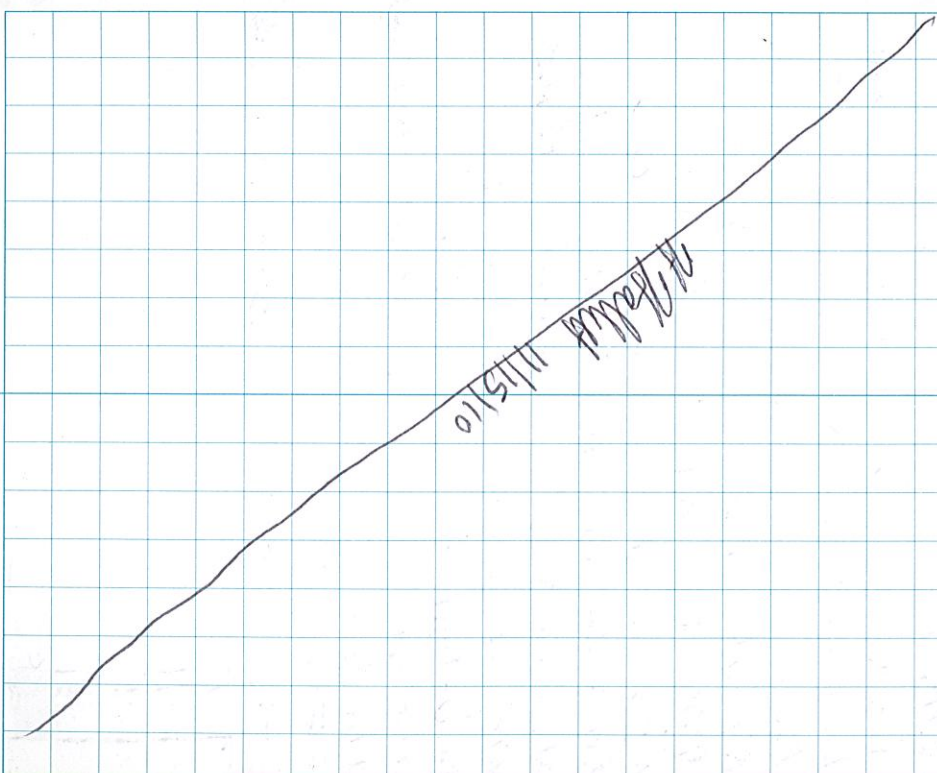
Installing carbon receptors - dyetest

MW-10PD

MW-2AD

MW-2AI

16:30 Heather Hallett off site

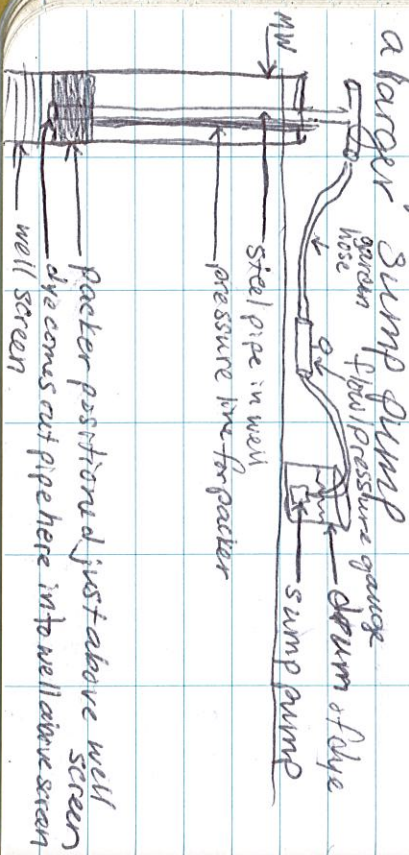


Dye Injection

07:30 Heather Hallett (CDM) on site
 weather: 55°F, light rain, no wind
 waiting for L#us to arrive for
 dye injection

08:45 Land Air Water Services (L#us)
 on site - Scott & John with a box
 truck and hollow stem drill rig for
 dye injection. Started setting up
 on MW-4PD

09:00 Jeff Dyber (NYSDC) on site
 10:45 finished setting up packer
 on ~~DH~~ MW-4PD and tested
 the pump with fresh water. Pump
 was not big enough to get water
 to bottom of well fighting the
 artesian pressure. Switched to
 a larger sump pump



Dye Injection

Packer was set at 90' below TIC
 Screened interval is 91'-101' TIC
 11:30 larger sump pump didn't work,
 tried raising pump up on bearing
 with a bit better results, also
 cleaned sand out of flow meter

12:02 Packer not working properly
 so pulled all the pipe up and
 tightened air hose connection to
 packer, re inserted the steel pipe
 and packer to 90' below TIC

12:30 Installed carbon receptors
 in MW-18PD

MW-19PI

MW-8PI

MW-18PI

MW-6PI

MW-17PI

MW-13PI

MW-13PD

13:00 Drillers were able to set
 packer at 80' below TIC, but not
 any lower. Left at 80'. Were able
 to get water in to well at a rate
 of 4 gal/min 11PSI

Dye Injection

13:20 Started injecting dye into MW-6PD
 Injected 15 gal of Fluorescein dye
 at 4 gal/min 11 psi. Flow meter clogged
 so it was removed. Flow rate was
 assumed to be constant with pump
 at max flow rate of 4 gal/min.
 13:50 Finished injecting dye. Starting
 to inject water to flush.
 15:30 Finished injecting 325 gal
 of water and started to decom equipment
 capped well with fence fitting
 Decomed all equipment with bleach
 and rinsed
 17:00 LAUS & CDM off-site
 Left 1 drum of decom water near
 fence on-site. Will move to shed
 tomorrow.

~~11/16/10~~

~~11/16/10~~

Dye Injection MW-6PD

08:00 LAUS & CDM on site
 Heather Hallett (CDM) Scott & helper
 (LAUS)
 Setup equipment on MW-6PD
 for dye injection
 weather: Sunny, ~50°F, light wind
 Tested injection with water (8 gal)
 and with the pump on full power
 got 4 gal/min 13 psi
 valved back the pump a bit for
 the dye injection to not exceed 10 psi.
 10:30 Noticed asphalt green
 tint coming from the Sump Pump
 from yesterday's dye injection
 went to store to buy a new sump
 pump and garden hoses because
 dye was still in old pump and/or
 hoses despite thorough cleaning
 11:00 Connected new pump & hoses
 Note: Had to cut ~~back~~ chain across
 parking lot entrance near MW-6PD
 to get drill rig in (would not have
 enough clearance to go around
 back of Fall building. Put a new

Location

Glen Cove, NY

Project / Client

Pall / NYSDC

Date

11/17/10

Dye Injection MW-6PD

lock on chain, locking it to old lock

11:30 Started injecting eosine dye. Packer slipped and a small amount of dye came up well, partially filled road box.

11:45 Packed packer up 23 ft and re-set it. Seems to be holding now. Started

injecting dye again at a rate of 4 gal/min. Pressure gauge read

close to 0 psi, flowing freely into well. Packer set at about 85' below TIC

12:00 Finished injecting 35 gal eosine. Packer slipped again, bubbles coming

up well. Reinflated packer, now holding. Started injecting 300 gal water

12:10 Bubbles coming up well, reinflated packer and it stopped. Continued injecting water.

13:15 Finished injecting 325 gal of tap water into MW-6PD. Pressure for injection of dye and water was 0-9 psi. Flow was 4 gal/min through out injection of dye + water. Started to de-con equipment and pack up.

Location

Glen Cove, NY

Project / Client

Pall / NYSDC

Date

11/17/10

Dye Injection MW-6PD

Left 3 drums of decon water on site in the shed, locked inside fence

1 drum is full, 2 half full. (3 full)

All consist of water, bleach and dye. Did not have labels but

marked drums with "Non-Haz Waste", "Pall Site, 11/17/10, Decon water, 55 gal"

15:15 CDM + LFUS of F site

~~11/17/10~~

Location Glen Cove, NY Date 12/6/10
 Project / Client Poll / NYSDC
 Dye test

07:30 - 11:30 Drove from Albany Area to site, Heather Hallett

11:30 Heather Hallett on site

to switch out carbon receptors in monitoring wells for dye test. Removed carbon receptors from these wells and submitted to lab along with a water sample. Put a new carbon receptor in wells:

MW-5PI (duplicate will be collected 12/28)

MW-4PI (dup 12/28)

MW-6PI (dup 12/28)

MW-8PI

MW-10PI

MW-11PI

MW-12PI

MW-17PI

MW-18PI

MW-10PD

MW-11PD

MW-12PD (dup 12/28)

~~7:17~~

Location Glen Cove, NY Date 12/6/10
 Project / Client Poll / NYSDC
 Dye test

Also put carbon receptors in these wells for sampling on 12/28/10:

MW-2PI

MW-13PI

MW-19PI

MW-2PD

MW-5PD

MW-13PD

MW-1PD

(duplicate will be collected 12/28)

12:30 - 13:00 Representative from Poll Corp. on-site sitting around in his car. Not sure why he was there.

15:30 Opened drums that were left on-site with p decon water from dye injection. Took one composite sample of decon water to submit to lab for VOC analysis. Drums contained water with bleach and traces of dye.

16:15 Heather Hallett off site to Albany

~~17:17~~ 12/6/10

Location Pail/Clon Cove, NYDate 12/30/10Project / Client Pail/NYSDEC

Carbon receptor change-out for dye test

14:30 Heather Hallett (CDM) on-site to change out carbon receptors in monitoring wells used for dye receptor test.

Weather: sunny ~45°F, no wind, snowed over the weekend about 20 in. half of the site near August Thompson was plowed, other parts of site not plowed, had put sticks in well covers previously, so was able to locate them and dig them out of the snow.

14:30 Started changing out carbon

receptors

MW-5PD

MW-5PI - DUP-2

MW-11PD

MW-11PI

MW-2AI

MW-2AD

MW-10PI

MW-10PD

MW-4PI

MW-6PI

17:00 Heather Hallett off-site will continue tomorrow

Location Clon Cove, NYDate 12/30/10Project / Client Pail/NYSDEC

Carbon receptor change-out for dye test

0730 Heather Hallett on-site Carbon receptor change-out continued

MW-13PI

MW-13PD - DUP-5

MW-18PI

MW-17PI

MW-1PD

MW-19PI

MW-8PI

MW-12PI

MW-12PD - DUP-2

MW-4PI - DUP-3

MW-6PI - DUP-4

Weather: sunny ~35°F, no wind, site still covered with snow

Collected duplicate carbon receptors deployed during last visit

Deployed more duplicates for next sampling in these wells:

MW-11PI

MW-5PD

MW-12PI

MW-10PI

MW-2AI

Location Belmont, NY

Date 12/30/10

Project / Client fall / NYSDC

Carbon sequestration for deep-sea

13:30 Heater Heloff off site. Drove back to Latham, NY and took carbon samples to FedEx.

12/30/18

Glenn Cove, NY

Date 1/19/11

111

Project / Client PAW/MSDC

Carbon receptor change-out for dyestuffs

10:30 Heather Hallett, CDM, arrived on site to change out carbon receptors in monitoring wells for dye tracer test. Drove from Albany.

Weather: $\sim 40^{\circ}\text{F}$, sunny, no wind, misty rain about 6 inches of snow left on unplowed portion of site. Rained heavily yesterday and portion of site on north end flooded with $\sim 3\text{ in}$ of water near MW2. A area and MW5P area.

10/15 Started changing out carbon receptors in monitoring wells on north side of site first.

11/15-11/30 Self Dyder, NY DEC project manager on-site. Showed him how I change out carbon receptors in wells.

Changed out carbon receptors listed on next page.

24/3

Location Glen Cove, NY Date 11/19/11
 Project / Client Poll / NY SDEC

Change out carbon receptors continued

Changed out these carbon receptors

and submitted carbon receptors and
 water vial to lab with two duplicates

MW-2AI 11:00

MW-5PI 11:15

MW-4PI 12:15

MW-6PI 13:10

MW-8PI 13:25

MW-10PI 11:05

MW-11PI 11:40

MW-12PI 10:45

MW-13PI 12:40

MW-17PI 13:00

MW-18PI 13:25

MW-19PI 13:45

MW-2AI 11:10

MW-5PI 11:25

MW-10PI 10:55

MW-11PI 11:30

MW-12PI 10:50

MW-13PI 12:50

MW-1PI 14:20

Set duplicates in MW-2AI + MW-5PI
 for next time.

14:30 Hallett off site, drove back to Albany

Location Glen Cove, NY Date 2/7/11
 Project / Client Poll / NY SDEC

Change out Carbon Receptors

1230 E Rosenzweig & K.

Reepmeyer on site

from CDM to change

out Carbon Receptors

- Weather: Clear ~ 45°

MW-19PI 12:30

MW-8PI 12:35

MW-18PI 12:40

MW-6PI 12:45

MW-17PI 12:50

MW-13PI 12:55

MW-13PI 13:00

MW-4PI 13:05

MW-12PI 13:10

MW-12PI 13:15

MW-11PI 13:20

MW-11PI 13:25

MW-5PI 13:30

MW-5PI 13:35

MW-10PI 13:40

MW-10PI 13:50

MW-2AI 13:55

MW-2AI 14:00

MW-2AI 14:15

- Showing artesian
 characteristics

DUP-9

Location Calen Cove, NY Date 2/23/11
 Project / Client Pall Corp / NYS DEC
Carbon Receptor Change

E Rosenzweig on Site
 from CDM to Change
 out the Carbon
 Receptors.

- Weather: Sunny to 35°F
- Reviewed & Signed HASP,
- Changed out of the following
 Carbon Receptors & collected
 1 vial of water per
 location. Also, collected

2 duplicate samples.

well id

Sample time

MU-2AI

1210

MU-5PI

1135

MU-9PI

1105

MU-6PI

1045

MU-8PI

1035

MU-10PI

7155

MU-11PI

1145

MU-13PI

1115

MU-17PI

1055

MU-18PI

1050

MU-19PI

1040

1030

Location Calen Cove, NY Date 2/23/11
 Project / Client Pall Corp / NYS DEC
Carbon Receptor Change

well id

Sample time

MU-2AI

1215

MU-5PI

1130

MU-10PI

1200

MU-11PI

1150

MU-13PI

1100

MU-19PI

1230

MU-12PI

1120

DUP-10

—

DUP-11

—

- Deployed Carbon Receptor
 and Glass vial to be
 retrieved @ the next
 event at MU-11PI.

- Set Dups at =

MU-10PI (DUP-12)

MU-2AI (DUP-13)

Location

Glen Cove NY

Date

3/16/11

Project / Client

Full / UPS DEC

Carbon Receptor Change

& Resurveying on site
 from CDM to pull
 & Replace Carbon Receptors.
 - Weather: Overcast & Rainy
 - Collected & Deployed
 Carbon Receptors + 2 Dips
 at the following locations
 well id

Sample	Time
MW-341	1350
MW-5P1	1310
MW-4P1	1210
MW-6P1	1130
MW-8P1	1110
MW-10P1	1330
MW-11P1	1250
MW-12P1	1230
MW-13P1	1150
MW-17P1	1140
MW-18P1	1120
MW-19P1	1100
MW-24D	1410
MW-5PD	1320
MW-4PD	1220
MW-10PD	1340

Location

Glen Cove NY

Date

3/16/11

Project / Client

Full / Carbon Receptor Change

Carbon Receptor Change

Sample	Time
MW-11PD	1300
MW-12PD	1240
MW-13PD	1200
MW-17PD	1420
Deployed	
Dip - 14 - MW-18P1	
Dip - 15 - MW-19P1	

Dip submitted should be

Dip	Time
12	1012
13	242

Location Green Cove NY Date 4/8/11
 Project / Client Pall 11/15 DEC

Carbon Receptor Change

1130 E Rosenzweig on Site
 + some CDM

Weather: Overcast & 45-55

Sample time

Well: 11
 MUD-241 1445
 MUD-5P1 1320
 MUD-4P1 1230
 MUD-6P1 1200
 MUD-8P1 1150
 MUD-10P1 1340
 MUD-11P1 1300
 MUD-12P1 1245
 MUD-13P1 1215
 MUD-17P1 1210
 MUD-18P1 1155
 MUD-19P1 1145
 MUD-22AD 1405
 MUD-5PD 1325
 MUD-4PD 1235
 MUD-10PD 1345
 MUD-11PD 1305
 MUD-12PD 1250
 MUD-13PD 1220
 MUD-14PD 1420

Location Green Cove NY Date 4/8/11
 Project / Client Pall 11/15 DEC

Carbon Receptor Change

Dup 1 = MUD-10P1
 Dup 2 = MUD-17P1

1130

Collected Dups from
 following wells:
 Dup 14 = MUD-18P1
 Dup 15 = MUD-17P1

Location

Glen Cove NY

Date

4/27/11

Project / Client

Fall / 11/30/10

Carbon Receptor Change

1100 E Rossmore on site
from CDM to change
out Carbon Receptors.
- Weather overcast / Rain.
- Pulled & Replaced Carbon
Receptors from the following
Locations.

Well id	Sample time
MWD-241	1350
MWD-5P1	1310
MWD-4P1	1210
MWD-6P1	1140
MWD-8P1	1120
MWD-11P1	1250
MWD-12P1	1230
MWD-13P1	1150
MWD-17P1	1140
MWD-18P1	1130
MWD-19P1	1115
MWD-24D	1400
MWD-5PD	1320
MWD-4PD	1280
MWD-10PD	1340
MWD-11PD	1300

Location

Glen Cove NY

Date

4/27/11

Project / Client

Fall / 11/30/10

Carbon Receptor Change

Carbon Receptor Change Cont.
Well id Sample time

MWD-12PD	1240
MWD-13PD	1200
MWD-1PD	1420
MWD-10P1	1330

- Pulled Duplicate Samples
from the following
2 locations:

Dep 16 - MWD-6P1
Dep 17 - MWD-5P1
- Deployed duplicates in
the following locations
Dep-18 ⇒ MWD-5PD
Dep-19 ⇒ MWD-11PD

Location Calen Cove, NY Date 5/14/11
 Project / Client Pall WSDC

Carbon Receptor Change

1000 E. Rosenzweig on site
 from CDM to change
 out Carbon Receptor.

- Weather: Overcast 65°
 Well: id

MU-241	1310
MU-501	1210
MU-401	1130
MU-601	1050
MU-801	1030
MU-1101	1110
MU-1201	1150
MU-1301	1110
MU-1701	1100
MU-1801	1040
MU-1901	1020
MU-3 AD	1320
MU-5 AD	1220
MU-400	1140
MU-1000	1300
MU-1100	1120 1240
MU-1200	1200
MU-1300	1120
MU-1400	1340
MU-1500	1250

Location Calen Cove, NY Date 5/14/11
 Project / Client Pall WSDC

Carbon Receptor Change

Retrieved Dup Samples
 from:

MU-501 → Dup 18
 MU-1001 → Dup 19

Deployed Duplicate Samples
 in the following cells

Dup-20 → MU-501
 Dup-21 →

Location Glenn Cove NP Date 7/14/11
 Project / Client NYS DEC / Pall
Carbon Change

6 Rosemeyer on site
 from EDM to change
 out Carbon Receptors
 and Deploy new ones,
 - Weather Clear to 85°C
 Well id time

MUS-241	1445
MUS-5P1	1345
MUS-4P1	1215
MUS-6P1	1115
MUS-8P1	1045
MUS-11P1	1315
MUS-12P1	1245
MUS-13P1	1145
MUS-17P1	1130
MUS-18P1	1100
MUS-19P1	1030
MUS-20AD	1515 1500
MUS-50P1	1400
MUS-4P1	1230
MUS-10P1	1430
MUS-11P1	1330
MUS-18P1	1300
MUS-13P1	1200

Project / Client NYS DEC
Receptor Change

MUS-18P1 1515
 MUS-10P1 1415
 Retrieved Dups from following
 locations

Dup-20 ⇒ MUS-5P1

Dup-21 ⇒ MUS-10P1

Deployed Dups in the following
 wells:

Dup-22 ⇒ MUS-12P1

Dup-23 ⇒ MUS-20P1

Additional wells Carbon
 Receptors deployed in:

MUS-1P1

MUS-6P1

Location Pall/Glen Cove, NY Date 8/18/11
 Project / Client Pall / NYSDC

Carbon Receptor Change-out, dyetest

1045 Heather Hallett on site to change out carbon receptors in MWs for dyetest

weather: overcast 70°F, light wind off on rain earlier in the AM

Well 1D Discollected Time

• MW-6PD 11:00

• MW-6PI 11:10

• MW-18PI (Dup22) 11:15

• MW-8PI 11:25

• MW-19PI 11:30

• MW-17PI 11:35

• MW-13PI 11:40

• MW-13PD 11:45

• MW-12PI 11:55

• MW-12PD 12:00

• MW-11PI 12:25

~~MW-11PD inaccessible 12:30~~

~~due to swampy flooded conditions~~

• MW-5PI 12:40

• MW-5PD 12:45

• MW-10PI 12:55

• MW-10PD 13:00

Location Pall/Glen Cove, NY Date 8/18/11

Project / Client Pall Corp / NYSDC

Carbon receptor change-out, dyetest

Well Discollected Time

• MW-2AI 13:20

• MW-2AD 13:40

• MW-4PI 13:55

• MW-4PD 13:55

• MW-1PI 14:20

• MW-1PD 14:30

• MW-11PD 14:45

Swampy conditions in areas of MW-5P, MW-11P, and MW-2A clusters. MW-11PD, MW-2AD, MW-2AI were leaking when I got to the site, caps had popped off. I secured them as well as possible after sampling.

15:10 Heather Hallett off site

Location Pall/Glen Cove, NYDate 9/22/2011Project / Client PALL / NYSDCCarbon Receptor Retrieval, Dye test1350 Katelyn Reepmeyer on site to remove

Carbon receptors in MW from 8/18/11.

Weather: Overcast. 70° humid.

Well

Time

MW 5 PD

✓

1217

~~DW 22 4PI~~ 25

1343

MW 13 PI

1315

MW 5 PI

1141

MW 6 PI

1330

MW 13 PD

1320

MW 17 PI

1325

MW 12 PI

1215

MW 11 PI

1245

MW 12 PD ~~skipped~~

1230

MW 18 PI

1330

MW 19 PI

1340

MW 8 PI

~~1330~~ 1330

MW 2 AD

1105

MW 2 AI

✓

1110

DW 23 ~~5 PI~~ 24

1333

MW 11 PD

1250

MW 6 PD

1335

MW 4 PD

1340

MW 1 PI

1345

Location Pall/Glen Cove, NYDate 9/22/2011Project / Client PALL / NYSDCCarbon Receptor Retrieval, Dye Test

Well

Time

MW 10 PI

1155

MW 1 PD

1350

MW 10 PD

1150

MW 4 PI

1305

Wells 2 AI, 2 AD, 5 PD, 5 PI were

sumpny. Wells 2 AI and 2 AD were

under water with vegetation growing

on top. Wells 5 PD and 5 PI had water

inside the casing that had to be

scooped out. All rubber caps were

secured on the wells after sampling.

1450: Katelyn Reepmeyer left site.

Temp

9/22/11

Duplicate key for Pall dye tracer test carbon receptors

	Well	Date
DUP-1	MW-5PI	12/29-30/2010
DUP-2	MW-12PD	12/29-30/2010
DUP-3	MW-4PI	12/29-30/2010
DUP-4	MW-6PI	12/29-30/2010
DUP-5	MW-13PD	12/29-30/2010
DUP-6	MW-12PI	1/19/2011
DUP-7	MW-10PI	1/19/2011
DUP-8	MW-5PD	2/7/2011
DUP-9	MW-2AD	2/7/2011
DUP-10	MW-10PD	2/23/2011
DUP-11	MW-1PD	2/23/2011
DUP-12	MW-10PI	3/16/2011
DUP-13	MW-2AI	3/16/2011
DUP-14	MW-18PI	4/8/2011
DUP-15	MW-17PI	4/8/2011
DUP-16	MW-6PI	4/27/2011
DUP-17	MW-5PI	4/27/2011
DUP-18	MW-5PI	5/19/2011
DUP-19	MW-10PI	5/19/2011
DUP-20	MW-5PD	7/14/2011
DUP-21	MW-10PD	7/14/2011
DUP-22	MW-18PI	8/18/2011
DUP-23	MW-2PD	8/18/2011

DUP-24 MW-8PI Sept 2011
DUP-25 MW-1PI Sept 2011