

## FPL Turkey Point Monitoring Plan

## Audit Checklist

### Field Documentation Universal Documentation Requirements

To use this field audit checklist effectively, the auditor must be familiar with FD 1000 (Documentation Procedures) in "DEP Standard Operating Procedures for Field Activities", February 1, 2004 (DEP-SOP-001/01) Page 26 of 78 Revision Date: March 31, 2008 (Effective 12/3/08)

#	Audit Element	Acceptable (Y / N / NA)	Comments
	<b>Universal Documentation Requirements</b>		
1	Waterproof ink was used for all paper documentation		
2	Errors in documentation were corrected without obliteration		
3	All cleaning procedures associated with the project were documented		
4	All instrument calibrations were properly documented		
5	Names of all sampling personnel were recorded		
6	The type(s) of sampling equipment used to collect all samples was recorded in the field record		
7	Where applicable to the analyte groups collected, the location and use of fuel-powered vehicles or equipment during the sampling project was recorded		
8	Date of sample collection was recorded for all samples		
9	Time of sample collection was recorded for all samples having maximum holding times of <24 hours		
10	Ambient field conditions were recorded for all samples		
11	A specific description of all sampling locations (sources) was recorded		
12	Where applicable, latitude and longitude were recorded for all sampling locations		
13	Where applicable, sampling locations were designated on scaled maps and drawings		
14	The matrix collected was recorded for all samples		
15	For composite samples, the number of subsamples, the amount collected for each subsample and the location of collection (sampling point or source) and, where applicable, the time of collection for each subsample was recorded		
16	The types, number, collection location and collection sequence of all field quality control samples was recorded in the field record		
17	Preservation information and verification was recorded for each sample, as applicable		
18	Ancillary records such as photographs, videotapes and maps were archived and linked to the sample unique field identification codes and the date of the sampling project		
19	Each sample container or group of containers was tagged or labeled with a unique field identification code that distinguishes the sample from all other samples		
20	Sample containers and labels were attached so as to prevent contact between the sample and the label or tag when pouring or dispensing from the container		
21	The unique identification codes for samples were recorded in a manner that linked the codes to all other field records associated with the samples		

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**Field Documentation  
Universal Documentation Requirements**

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**FPL Turkey Point Monitoring Plan****Audit Checklist****Health and Safety**

To use this field audit checklist effectively, the auditor must be familiar with FD 1000 (Documentation Procedures) in "DEP Standard Operating Procedures for Field Activities", February 1, 2004 (DEP-SOP-001/01) Page 26 of 78 Revision Date: March 31, 2008 (Effective 12/3/08)

#	Audit Element	Acceptable (Y / N / NA)	Comments
1	Health & Safety meeting conducted daily before commencing activities		
2	Are work zones clearly defined?		
3	Are support trailers located to minimize exposure from a potential release?		
4	Are support trailers accessible for approach by emergency vehicles?		
5	Is the site properly secured during and after work-hours?		
6	Are adequate communications (telephones, radios) available on site?		
7	Is drinking water available?		
8	Are adequate toilet facilities available on site?		
9	Are eating and food storage areas clean and maintained?		
11	Is there adequate lighting?		
12	Is a HASP accessible to all employees?		
13	Has the HASP been briefed to employees on site?		
14	Are the MSDSs available for review by employees on site?		
15	Is there a designated Site Safety Officer (SSO) on site?		
16	Do the employees understand the results of exposure?		
17	Are emergency telephone numbers posted or available in HASP?		
18	Have emergency escape routes been designated?		
19	Are employees familiar with the emergency signals?		
20	Is the hospital route posted or available in HASP?		
21	Are employees familiar with emergency procedures?		
22	Are emergency contact numbers posted at the site?		
23	Are First Aid Kits accessible and identified?		
24	Are emergency eye washes available?		
25	Is the eyewash within the expiration date?		
26	Are emergency showers available?		
27	Are there First Aid/CPR trained personnel available?		
28	Is heat/cold stress monitoring being conducted?		
29	Are first aid supplies easily accessible?		

30	Are first aid supplies checked weekly to ensure that expended items are replaced?		
31	Is a communication system available for contacting ambulance?		
	<b>Notes</b>		

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**FPL Turkey Point Monitoring Plan****Audit Checklist****Ecological Sampling**

#	Audit Element	Acceptable (Y / N / NA)	Comments
1	Are all the datasheets/databooks present and accounted for?		
2	Was all field information, datasheets, and chain-of-custody information recorded properly?		
3	Did all the automated equipment used pass the daily calibrations?		
4	Were all the automated equipment verifications (where applicable) within expected ranges?		
5	Was all instrumentation cleaned/decontaminated according to QA/QC specifications?		
6	Were all samples collected labeled appropriately for future identification?		
7	Are the proper 5% QC data checks being conducted?		
	<b>Notes</b>		

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**FPL Turkey Point Monitoring Plan****Audit Checklist****Laboratory  
(NELAC Accredited)**

#	Item	Audit Element	Acceptable (Y / N / NA)	Comments
<b>Method Reviews</b>				
	Method SOP	Is SOP approved and current version available to analyst - Is SOP compliant with current method procedures - Are method deviations documented -		
	Project-specific procedures	How do they incorporate project requirements into SOP and/or documentation available to analyst -		
	Blanks	What is the water source - How often is it tested - How are trip blanks prepared - What are contaminant levels are allowed in blank - Are there any ongoing blank problems - What actions have been taken -		
	Calibration	What are the calibration procedures - Do they meet method requirements - How do they know a calibration is valid - What actions do they take if calibration is outside control limits - Are calibrations verified with a second source standard - Review a current calibration report -		
	Control Limits and Control Charts	Are there control limits for all parameters - How often are they determined - Are points plotted on control charts - How do are trends determined - What actions are taken when samples are outside control limits - Who approves corrective actions - How is that documented - Review current charts		
	Interferences - Instrument and Matrix	What are the common interferences for the method - What actions are taken to eliminate them - What clean-ups or actions are taken to address matrix interferences - Are the analyst aware of project-specific clean-up criteria or DQOs - What actions are taken if elevated PQLs exceed client limits -		
	Standard and reagent traceability	How standards are traceable to NIST - What records are linked to the specific samples - How are standard expiration times determined - How does the analyst know they are using only valid standards		
	Data Review Procedures and Checklists	How are data reviews documented - Who reviews analysts data - What percent is reviewed - What records are reviewed - Are raw data verified - What are the procedures for checking manual integrations		
	Documentation and Data Records	How are calibration, QC and sample records stored - How are manual integrations documented - How are transcription and data entry records checked - Are electronic data transfers checked		
<b>Sample Handling and Waste</b>				
	Sample Receipt	How are cooler temperature and chemical preservation verified - How are problems documented and communicated to the client		

	Rush Samples	What are procedures for rush sample analysis		
	Storage and Coolers	Does the lab have adequate storage space - Are VOC samples stored separately - Are areas monitored with storage blanks - How is temperature monitored		
	Project-specific Requirements	How are samples logged into the LIMS - How are project requirements incorporated		
	High hazard samples	What procedures does the laboratory use for high hazard samples - Are these samples stored separately - What are analyst training procedures for these samples		
	Sample Storage	How long are samples stored - How is the client notified - Once samples are scheduled for disposal what happens to the soil and water - Are samples composited to dilute higher concentration samples		
	Sample Disposal	What procedures are used to determine how samples are disposed - How are sample containers disposed - Are they cleaned or labels removed or jars crushed - How do we know our jars are not in a landfill		
	Waste Storage	What are procedures for waste disposal - Who is responsible - Where is waste stored - Do they have RCRA permit - How do they select waste disposal vendors - Are they acceptable - What happens to PCB and mercury waste and high hazard samples		
	Bottle Procurement	Who supplies bottles - Where are they stored - How are they tested - What are the traceability records for lots and shipments - What containers are used for VOCs in soils -		
	Chemical Preservatives	Who supplies preservatives and are they pre-added - What records are kept for traceability of preservatives with shipped for samples		
	Waste Disposal and Health/Safety Records	Does the laboratory have Chemical Hygiene Plan updated annually - Are there written waste disposal and high hazard sample SOPs - How are staffed trained in procedures - Review training records		
	Violations	Has the laboratory every been reported for RCRA or OSHA waste related violation - What corrective actions are in place		

#### QA Systems

	QA Manual	Does the lab have current QA Manual - Is it written to NELAC/ISO Guide 25 standards - Has it been reviewed and approved by government agencies - Review any written comments and responses		
	QA Coordinator	Is QA Coordinator independent of operations - Do they perform an independent review function - What percentage - How is documented - Evaluate any QA reviews of E & E reports		
	External Audits	Review the list of external audits for last year - Review any recent government audit reports and follow-up on major corrective actions		



	Internal Audits	Do they do annual systems and routine performance audits - What is the schedule - Review applicable reports/method audits - Note any areas with potential impacts to E & E samples		
	Certifications	What certifications are maintained - Are they NELAC certified - Get a current list - Are they certified in states covered by E & E projects		
	Performance Evaluation Samples	What external PE programs does lab participate - Review last two sets of results - For parameters outside PE limits what was the corrective actions - List any potential concerns for E & E samples - Are there follow-up tests		
	Training Records and Internal Proficiency Testing	What documentation is available to verify that analysts performing tests on E & E samples are trained in procedure and tested as proficient - Randomly pick several analysts from example data packages and look at training and PE testing records		
	Control Charts and Control Limits	Who maintains and reviews control charts - How often are control limits set for all parameters - Who approves limits - What is policy for establishing wider limits - Are trends evaluated for potential problems with methodology		
	MDL Studies	How often are MDL studies completed - Are they done on each instrument - Do they follow 40 CFR requirements - How do they determine spiking levels - Who approves studies - Review or copy MDL studies for applicable E & E methods - What if PQL exceeds MDL		
	Corrective Action Procedures	Who approves corrective actions - Is there a tracking mechanism to ensure follow-up - How are systematic problems identified/corrected		

#### Project Management and Records

	Procurement Process	Are E & E project requirements for QA and reporting clear in procurement process - How are requirements documented for analysts - When samples arrived, how are they associated to the correct procurement		
	Corrective Action Procedures	Does the PM review and approve corrective actions affected their client samples - When are we notified prior to the report		
	Data Review	Do managers perform a data review function - What percentage - How is documented - What actions are taken if project requirements are not met - Evaluate any PM reviews of E & E reports		
	Data File Storage	What records are stored in the data file - Are additional records stored in secured area - What precautions are taken in event of major catastrophe		
	Electronic Data	What systems are used for electronic data - What are back-up procedures - What procedures are used for validating calculations and data processing routines - How are changes to these routines controlled, documented and tested - How is the final EDD verified to the report and raw data		

	Document Control	What procedures are used to ensure analysts are using the latest version of SOPs and other documents - How are logbooks issued, controlled and archived - How long after report submission are records maintained such that a complete evidence record can be generated - Is the client notified when records are destroyed		
	Data Package Reviews	What procedures are used when E & E data reviewers identified a QA problem on a report - Is there a mechanism to track client concerns and identify and correct systematic QA problems - How are client concerns documented		
	<b>Notes</b>			

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**FPL Turkey Point Monitoring Plan****Audit Checklist****Field Documentation  
Chain of Custody Documentation**

*To use this field audit checklist effectively, the auditor must be familiar with FD 1000 (Documentation Procedures) in "DEP Standard Operating Procedures for Field Activities", February 1, 2004 (DEP-SOP-001/01) Page 26 of 78 Revision Date: March 31, 2008 (Effective 12/3/08)*

#	Audit Element	Acceptable (Y / N / NA)	Comments
1	Site name and address		
2	Client code substituted for but linked to site name and address, where applicable		
3	Date and time of sample collection		
4	Name of sampler responsible for sample transmittal		
5	Unique field identification code for each sample container or group of containers  MMDDYY – Sample location; or MMDDYY – Sample location – Depth; or MMDDYY – Sample location – Split ; or MMDDYY – Sample location – Depth – Split. MMDDYY – Field QA/QC Designation (DUP, EB, FCEB) – Discrete Number		
6	Total number of samples transmitted		
7	Required analyses for each sample container or group of containers		
8	Sample preservation used for each container or group of containers		
9	Comments about samples, sample sources or other relevant field conditions		
10	Identification of common carrier used to transport the samples, when applicable		
11	Shipping invoices and related records from common carriers were archived with the field records, when applicable.		

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**Field Documentation  
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**FPL Turkey Point Monitoring Plan****Audit Checklist****Data Management**

#	Item	Audit Element	Acceptable (Y / N / NA)	Comments
1	Document Control	Document control is used; revision and effective date on the cover; listing of changes and revisions kept as part of the QAPP		
2	Distribution	This QAPP, the Monitoring Plan, and all pertinent project documents are required reading for all staff participating in the project.		
3	Distribution	Appropriate portions of the QAPP will be in the possession of all project team members, contractors, and laboratories performing work for the project.		
4	Distribution	All contractors and subcontractors will be required to comply with the procedures documented in this QAPP and the Monitoring Plan to ensure comparability and representativeness of the data produced is maintained.		
5	Distribution	All contractors and subcontractors operating under this QAPP have the responsibility of notifying FPL of potential inconsistencies between the above identified procedures and procedures to be conducted under this QAPP or procedures conducted in the lab or field.		
6	Photodocumentation	Field team members reviewed the photos in the file against the photo log ensure notes correspond to the appropriate photographs		
7	Photodocumentation	Photos and the log were uploaded into the project database		
8	Photodocumentation	File names for the photo files in the database do correspond to the picture names/numbers given in the photo log.		
9	Automated Data	The data was checked for completeness and adherence to expected values.		
10	Automated Data	The automated data was validated, and qualified using the QA/QC procedures as stated in this QAPP		
11	Geo-referenced / Secondary Data	Outside data will be checked prior to use to verify that current values are used and that geo-referenced data area accurate. The checks will include spatial data validation of points using high resolution 1-foot ground pixel orthophotography of the area. At least 95% of coordinate points should fall within National Map Accuracy Standards when overlaid on known quality map features of similar accuracy.		
12	Laboratory Data	Did lab review and agree to all elements in the QAPP?		
13	Laboratory Data	All laboratory process sample analysis by standard methods for water quality parameters must be NELAC certified.		

14	Laboratory Data	Was a project library for ADaPT developed for the project? Did the library contain all analyses and analytes in the QAPP (for standard analysis deliverables)		
15	Laboratory Data	Were the EDD's run through ADaPT? Were comments added where necessary in the ADaPT Error Log?		
16	Laboratory Data	Were the deliverables complete? Were signed copies of the report and the EDD provided?		
17	Laboratory Data	Was data reviewed by the QA officer; Was data validated according to the QAPP, do DVR's address all necessary elements described in the QAPP?		
18	Data Storage	All electronic data results, including laboratory data results, will be maintained in their original form in the database.		
19	Data Storage / Custody	Data changes such as unit adjustments, changes in reporting limits based on data validation and rejection of data will be maintained in separate fields or records with specific meta-data acknowledging how and why data were modified and specific party authorizing the data change.		
20	Data Storage	An electronic data backup procedure to recover from disaster or hardware failures must be identified		
21	Data Storage	Data migrations and changes in information technology infrastructure must be documented.		
22	Data Security	Once data is finalized, validated, and transferred to the database, further changes may only be made upon approval from the FPL PM (or their designee).		
23	Access	Data access is password-protected; Security system sufficient to properly preserve the project data		
24	Archiving	The database server will be backed up and archived nightly to minimize the risk of data loss; data that is backed up will be stored in an off-site vault in order to provide further physical protection.		
25	Archiving	All records in the FPL Project database, file system, or Document Management System, as well as CDs and tape back-ups, must be retained indefinitely.		
26	Archiving	All raw data records, including laboratory and sample collection documentation, will be kept for a minimum of 5years beyond the end of the project.		

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**FPL Turkey Point Monitoring Plan****Audit Checklist****Field Documentation  
Decontamination**

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#	Audit Element	Acceptable (Y / N / NA)	Comments
1	Cleaning steps in all procedures used for decontamination were documented either by description or reference to an SOP (DEP SOP or internal SOP).		
2	Certificates of cleanliness provided by vendors supplying cleaned equipment or sample containers were archived and linked to the date of the sampling project and the types of equipment or sample containers used for the project.		
3	For equipment decontaminated on-site in the field, the date and time of the cleaning procedure associated with the affected equipment was recorded in the field records.		
4	If sampling kits (sample containers, sampling equipment and ancillary supplies) were provided to another party, the following information was recorded for the kit:		

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## FPL Turkey Point Monitoring Plan

## Audit Checklist

### General Field Calibration Requirements

To use this field audit checklist effectively, the auditor must be familiar with FT 1000 to FT 2200 (Field Testing and Measurement) in "DEP Standard Operating Procedures for Field Activities", February 1, 2004 (DEP-SOP-001/01) Page 34 of 78 Revision Date: March 31, 2008 (Effective 12/3/08) **General Requirements for Calibration Activities (FT 1000)**

#	Audit Element	Acceptable (Y / N / NA)	Comments
1	All field-testing equipment and instruments brought to the field appeared to function properly.		
2	The concentration or other assay value, the vendor catalog number and the description of the standard or reagent were recorded for all preformulated solutions, neat liquids and powders.		
3	Expiration dates for all calibration standards and reagents used on the sampling project were recorded.		
4	Manufacturer-certified calibration specifications were retained for all factory-calibrated instruments used for the sampling project.		
5	Certificates of assay, grade and other vendor specifications for all standards and reagents were retained and recorded for the standards and reagents linked to the sampling project.		
6	All sample measurements were chronologically bracketed between acceptable calibration verifications.		
7	All sample measurements were quantitatively bracketed with an appropriate choice of calibration standards for calibrations or verifications.		
8	Historical, instrument-specific data justified calibration verification intervals of greater than 24-hours.		
9	Instruments failing to meet calibration verification acceptance criteria were recalibrated or removed from service.		
10	Sample measurements were qualified as estimated ("J" data qualifier code) when the instrument calibration could not be verified.		
11	An explanatory narrative was provided in the field record for all sample "J" values.		
12	The time interval between calibration verifications did not exceed one month, or, if less, the life of the sampling project (except for temperature measurements).		
13	All acceptable initial calibrations and calibration verifications were documented and linked to the field measurements for the sampling project.		
14	For each instrument unit used for the sampling project, the following information was recorded for all calibrations:		
15	• Unique identification (designation code) for the instrument calibrated		
16	• Date and time of each calibration or calibration verification		
17	• Instrument reading or result (display value) for all calibration verifications, with appropriate measurement units		
18	• Names of analysts performing each calibration for the instrument		
19	• Designation of each calibration standard used to calibrate or verify the instrument, linked to the associated records for the calibration standard		
20	• The acceptance criteria for each calibration and verification used to accept the instrument calibration or verification		

21	• The assay specifications or acceptance criteria for any QC standard or sample used to independently verify the calibration of the instrument		
22	• Positive indication in the record of acceptable (successful) initial calibration and acceptable initial and continuing calibration verifications		
23	• Positive indication of all failed calibrations or verifications		
24	• All corrective actions performed on the instrument prior to attempting re-verification or recalibration of the instrument are linked to the records required for preventive maintenance		
25	• Any instances of discontinuation of use of the instrument due to calibration or verification failures		
26	• A description or citation of the specific calibration and verification procedures used for the instrument (DEP SOP or internal SOP)		

#### pH (FT 1100)

27	The pH meter and electrode system met DEP SOP specifications for accuracy, reproducibility and design.		
28	All measurements were corrected for temperature (manual or automatic).		
29	The temperature sensor calibration was verified according to FT 1400.		
30	A pH 7 buffer was used as the first calibration standard for the initial calibration.		
31	All sample measurements were chronologically bracketed with acceptable calibration verifications.		
32	All sample measurements were quantitatively bracketed with an appropriate choice of at least two calibration buffers for calibrations or verifications.		
33	All calibration verifications met the acceptance criteria of + 0.2 standard pH units.		
34	The pH electrode was rinsed with deionized or distilled water between buffer solutions and between sample measurements.		
35	The instrument pH readings stabilized before pH values were recorded.		

#### Conductivity (FT 1200)

36	The specific conductance meter and electrode system met DEP SOP specifications for accuracy, reproducibility and design. DEP-SOP-001/01 FA 1000 Regulatory Scope and Administrative Procedures for Use of DEP SOPs		
37	All sample measurements were quantitatively bracketed with an appropriate choice of calibration standards for calibrations or verifications.		
38	All calibration verifications met the acceptance criteria of + 5% of the verification standard value.		
39	All continuing calibration verifications were performed using standards within the range of sample measurements.		
40	The instrument conductivity readings stabilized before measurement values were recorded.		
41	All measurements were corrected for temperature (manual or automatic).		
42	The conductivity electrode was rinsed with deionized or distilled water between standard solutions and between sample measurements.		

#### Temperature (FT 1400)

43	The temperature sensor calibration was verified according to FT 1400.		
44	The temperature measurement device met DEP SOP specifications for design and measurement resolution.		
45	All sample measurements were chronologically bracketed with acceptable calibration verifications.		
46	The temperature device readings stabilized before measurement values were recorded.		
47	All sample measurements were quantitatively bracketed with calibration verifications of the temperature measurement device at a minimum of two temperatures using the NIST-traceable thermometer.		
48	Historical, device-specific data justified calibration verification intervals of greater than one month (extended chronological calibration bracket).		

#### **Dissolved Oxygen (FT 1500)**

49	Groundwater samples were measured in situ (downhole) or by using a flow-through container.		
50	All sample measurements were chronologically bracketed with acceptable calibration verifications.		
51	All measurements were corrected for temperature (manual or automatic).		
52	All measurements were corrected for salinity, where applicable (manual or automatic).		
53	The dissolved oxygen electrode was rinsed with deionized or distilled water between sample measurements.		
54	The dissolved oxygen meter and electrode system met DEP SOP specifications for accuracy, reproducibility and design.		
55	All calibration verifications met the acceptance criteria of + 0.3 mg/L dissolved oxygen when compared to the table of theoretical values for water-saturated air.		
56	The temperature sensor calibration was verified according to FT 1400.		
57	The instrument dissolved oxygen readings stabilized before measurement values were recorded.		
58	The dissolved oxygen electrode was stored in a water-saturated air environment when not in use.		

#### **Turbidity (FT 1600)**

59	The turbidimeter met DEP SOP design specifications.		
60	All sample measurements were chronologically bracketed with acceptable calibration verifications.		
61	Initial calibration of the turbidimeter was performed using formazin or styrene divinylbenzene primary standards, whichever was required by the manufacturer of the instrument.		
62	Alternative design turbidimeters used for groundwater stabilization measurements met DEP performance criteria.		
63	All sample measurements were quantitatively bracketed with an appropriate choice of calibration standards for calibrations and verifications.		
64	All calibration verifications met the DEP SOP acceptance criteria applicable to the NTU ranges associated with the verification standard values. FT 1600 section 3.2		
65	The sample cells (optical cuvettes) were inspected for scratches and discarded or coated with a silicone oil mask, as necessary.		

66	The sample cells (optical cuvettes) were cleaned with deionized or distilled water between standard solutions and between sample measurements, as applicable.		
67	The sample cells (optical cuvettes) were rinsed with sample prior to filling with sample for measurement.		
68	The sample cells (optical cuvettes) were optically matched for calibrations and sample measurements.		
69	The exterior of the sample cell (optical cuvette) was kept free of fingerprints and dried with a lint-free wipe prior to insertion in the turbidimeter.		

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## FPL Turkey Point Monitoring Plan

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### Field Quality Control

To use this field audit checklist effectively, the auditor must be familiar with FQ 1000 (Field QC) in "DEP Standard Operating Procedures for Field Activities", February 1, 2004 (DEP-SOP-001/01) Page 26 of 78 Revision Date: March 31, 2008 (Effective 12/3/08)

#	Audit Element	Acceptable (Y / N / NA)	Comments
1	Equipment blanks or field blanks were collected at a rate of 5% of the number of field samples collected over the life of the project for each reported test result and matrix combination.		
2	At least one equipment blank or field blank was collected for each test result and matrix combination for each year of the project.		
3	Field-cleaned equipment blanks were collected if equipment was decontaminated in the field.		
4	Precleaned equipment blanks were collected if equipment was cleaned by the sampling organization or if equipment vendors did not certify cleanliness of equipment for the specific uses for the project.		
5	Field blanks were collected if no equipment was cleaned by the sampling organization.		
6	Field blanks were collected when the sample containers were used as the sampling device.		
7	Where applicable to the project, one trip blank was transported in each storage container, shipping container or ice chest containing empty, clean VOC sample containers or VOC samples.		
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**FPL Turkey Point Monitoring Plan****Audit Checklist****Field Documentation  
Maintenance**

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#	Audit Element	Acceptable (Y / N / NA)	Comments
1	Each applicable instrument or equipment unit (inventory item) was identified with a unique designation or identification code that distinguishes the unit from all others.		
	The following information was recorded for all equipment associated with the sampling project:		
2	Maintenance and repair procedures for equipment or instrument unit		
3	Routine cleaning procedures for each unit		
4	Filling solution replacement for probes		
5	Parts replacement for instruments or probes		
6	Calendar date for each procedure performed on each unit		
7	Names of personnel performing maintenance and repair tasks for each unit		
8	Description of malfunctions associated with any maintenance and repair for each unit		
9	Vendor service records were retained for all affected equipment or instruments associated with the sampling project.		
10	The inclusive rental dates, types and unique descriptions of rental equipment associated with the sampling project were recorded.		
11	Manufacturers' operation & maintenance manuals and instructions were retained for all equipment and instruments associated with the sampling project.		
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# FPL Turkey Point Monitoring Plan

# Audit Checklist

## Groundwater Sampling

Site/Location: \_\_\_\_\_

To use this field audit checklist effectively, the auditor must be familiar with FS 2200 (Groundwater Sampling) in "DEP Standard Operating Procedures for Field Activities", February 1, 2004 (DEP-SOP-001/01) Page 26 of 78 Revision Date: March 31, 2008 (Effective 12/3/08)

#	Audit Element	Acceptable (Y / N / NA)	Comments
	Information about the following topics (-) was recorded for each sample, as applicable:		
1	·Purging equipment		
2	·Purging procedure		
3	·Well diameter		
4	·Water table depth		
5	·Depth of well		
6	·Volume of water in the well		
7	·Equipment dimensions and volumes for pumps, tubing and flow containers (flow cells)		
8	·Purge volume calculations		
9	·Total volume of water purged		
10	·Total well volumes or equipment volumes purged		
11	·Date of purging		
12	·Starting and ending times for purging		
13	·Purging rate (pumping or flow rate) and associated calculations		
14	·Flow meter readings		
15	·Stabilization measurements for purge completion criteria		
16	·Elapsed time for one well volume or equipment volume purge at stabilized flow rate		
17	·Water level drawdown measurements during purging (depth to water table)		
18	A flow cell was used to measure stabilization parameters during pumping.		
19	Downhole measurements were used for wells purged by bailing.		
20	If the well was purged from the top of the water column above a <u>fully</u> submerged screen, at least one well volume was purged prior to commencing purge stabilization measurements and at least ¼ well volume was purged at the stabilized pumping rate between consecutive purge stabilization measurements.		
21	If the well was purged from the top of the water column in a <u>partially</u> submerged screen interval, at least one well volume was purged prior to commencing purge stabilization measurements and at least 2 minutes of continuous purging at the stabilized pumping rate elapsed between consecutive purge stabilization measurements.		
22	If the well was purged from the middle of a <u>fully</u> submerged screen interval, at least one <u>equipment</u> volume was purged prior to commencing purge stabilization measurements and at least 2 minutes of continuous purging at the stabilized		



	pumping rate elapsed between consecutive purge stabilization measurements.		
<b>Determination of purging completion</b>			
23	Three (3) consecutive measurements of the three parameters listed below were within stated limits		
24	• Temperature: $\pm 0.2^{\circ}\text{C}$		
25	• pH: $\pm 0.2$ standard pH units		
26	• Specific Conductance: $\pm 5.0\%$ of reading		
27	Measured dissolved oxygen and turbidity were below the following thresholds.		
28	• DO $< 20\%$ saturation at the measured temperature		
29	• Turbidity $< 20$ NTU		
30	For wells where DO and turbidity thresholds could not be met for justified reasons, consecutive measurements were within the above stated limits for pH, conductivity and temperature; and, DO and turbidity measurements were within the following stated limits.		
31	• DO: $\pm 0.2$ mg/L or 10%, whichever is greater		
32	• Turbidity: $\pm 5$ NTUs or 10%, whichever is greater		
33	For wells failing to meet stabilization criteria after five (5) well volumes, testing instrumentation, calibrations, purging flow rate, flowcells and all tubing connections were determined to be functional and acceptable for measuring stabilization parameters.		
<b>Purging Low Permeability Wells</b>			
34	Dry-purged wells were purged only once according to FS 2212, section 3.4.1		
35	The well was known to purge dry due to low formation permeability and the samplers determined that the well could not be purged according to FS 2212 and FS 2213.		
36	Very small diameter Teflon, PE or PP tubing and the smallest possible pump chamber and flow cell volumes were used.		
37	The pump tubing wall was thick enough to minimize oxygen transfer.		
38	The pump or tubing intake was placed within the well screen interval.		
39	The purging flow rate was $< 100$ mL/min.		
40	Pump rate was adjusted to minimize drawdown.		
41	A minimum total of at least 2 equipment volumes was purged before stabilization parameters were measured and samples were collected.		
42	Temperature, pH, conductivity, DO and turbidity were measured once immediately prior to collecting the samples during stabilized pumping after at least 2 equipment volumes were purged.		
43	The same pump was used to purge and collect the samples.		

**Collecting samples from Low Permeability Wells**

44	The same pump and tubing was used to purge and collect the samples.		
45	The purge position of the pump or tubing intake was maintained throughout sample collection.		
46	The stabilized purge pumping rate was maintained throughout sample collection unless pumping was ceased to allow formation recharge.		
47	Samples were collected immediately after purging was completed while continuing a stabilized pumping rate or as soon as sufficient recharged sample water was available.		
48	<b>Maximum elapsed times between purging and sampling</b>		
49	Stabilization parameters were re-measured if the start of sample collection began more than one hour after completion of purging.		
50	The well was re-purged if the second set of stabilization measurements exceeded the original measurements by more than + 10%.		
51	Dry-purged wells were allowed to recharge after one purge before measuring stabilization parameters and collecting samples.		
52	Samples were collected within 6 hours of purging completion.		
53	<b>General Requirements for Sample Collection Equipment</b>		
54	Pumps were decontaminated or replaced between wells.		
55	Pump tubing was decontaminated or replaced between wells.		
56	Reusable bailers were decontaminated between wells.		
57	Material construction of pumps, tubing and bailers conformed to requirements of Tables FS 1000-1 through FS 1000-3 and Table FS 2200-1 for the analytes collected.		

**Purging and sampling wells with in-place plumbing, air strippers or other plumbed remedial systems**

58	The purging and sampling point was located upstream of storage or pressure tanks where possible.		
59	Hoses, aerators and filters removed were removed prior to purging and sampling where possible.		
60	The plumbed system was purged at the selected purge point (valve or spigot) until the purge completion criteria listed in FS 2212 section 3 were met.		
61	Air strippers and other remedial systems were purged for a minimum of one minute.		
62	The flow rate was reduced to less than 500 mL/minute (1/8" stream) or approximately 0.1 gal/minute before collecting samples.		

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Auditor

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Date

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Organization

**Groundwater Sampling**

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**Groundwater Sampling**

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Organization

# FPL Turkey Point Monitoring Plan

# Audit Checklist

## Surface Water Sampling

Site/Location: \_\_\_\_\_

To use this field audit checklist effectively, the auditor must be familiar with Fs 2100 (Surface Water Sampling) in "DEP Standard Operating Procedures for Field Activities", February 1, 2004 (DEP-SOP-001/01) Page 26 of 78 Revision Date: March 31, 2008 (Effective 12/3/08)

#	Audit Element	Acceptable (Y / N / NA)	Comments
1	Information about the following topics was recorded for each sample, as applicable:		
2	• Depth of all samples and subsamples		
3	• Beginning and ending times for all timed composites		
4	• Type of composite sample		
5	When wading, were samples collected upstream from the body?		
6	Was sediment disturbed in the immediate area of sample collection?		
7	Were water samples taken before sediment samples when obtaining both from the same area (site)?		

### Surface Grab Samples

8	Were surface grab samples collected within the top 12 inches of the water column? Was skimming avoided?		
9	If preservatives have been added, was the container inverted several times to ensure sufficient mixing of sample and preservatives.		
10	Check Was preservation of the sample checked and pH adjusted with additional preservative, if necessary. When a pH adjustment is made and a prepreserved container was used to collect the sample, always check all containers for proper preservation.		
11	If sampling with an intermediate container, was it rinsed with site water before collection?		
12	When pumps are used for sampling, were several tubing volumes pumped through the system to flush the tubing prior to collecting the first sample?		

### Depth Grab Samples

13	Was the water column measured to determine maximum depth and sampling depth prior to lowering the sampling device?		
14	Was the line attached to the sampler marked with depth increments so that the sampling depth can be accurately recorded?		
15	Was the sampler slowly lowered to the appropriate sampling depth, taking care not to disturb the sediments?		
16	When pumps and tubing are used for sampling, was tubing tied to a stiff pole or weighted down so the tubing placement will be secure? Do not use a lead or metallic weight if collecting metals samples.		
17	Were several tubing volumes pumped through the system to flush the tubing prior to collecting the first sample?		

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Auditor

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Date

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Organization

**Surface Water Sampling**

Site/Location: \_\_\_\_\_

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Auditor

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Date

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Organization

## FPL Turkey Point Monitoring Plan

## Audit Checklist

### Micrometeorological, Flowmeter and Rain Gauges

To use this field audit checklist effectively, the auditor must be familiar with FQ 1000 (Field QC) in "DEP Standard Operating Procedures for Field Activities", February 1, 2004 (DEP-SOP-001/01) Page 26 of 78 Revision Date: March 31, 2008 (Effective 12/3/08)

#	Audit Element	Acceptable (Y / N / NA)	Comments
1	All sensors are clean and functional i.e. no physical obstruction to operation. a) Meteorological station (1 unit) b) Flowmeters (3 units) c) Rain gauges (5 units) d) Rainfall collectors (7 units)		
2	Sensors are performing to specifications: a) Light sensor—reads zero when light is completely blocked out. Reads $>1000 \mu\text{mols W m}^{-2}$ in midday sunlight b) Humidity sensor—Reads less than ambient humidity when placed in a bag with a drying agent (e.g. drierite). c) Ultrasonic anemometer—Ensure that it is aligned vertically and reading zero when bag is placed over sensor. Should read zero when placed in a wind-free shield. d) Flowmeter—there are no obstructions of organic plants in the acoustic sensor path. Ensure that all the plants are removed. e) Tipping bucket rain gauge—can tip freely and there is no obstruction to rain funnel. f) Rainfall collectors—not overflowing and there is sufficient mineral oil overlying container		
3	Sensors and probes are cleaned on a regular basis and cleaning records maintained.		
4	Sensors and probes are calibrated by the manufacturer on a regular basis and records available for review.		
5			
	<b>Notes</b>		

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