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January 16, 2009

Mr. Scott Miller **VIA EMAIL**
U.S. Environmental Protection Agency, Region IV
4WD-SRTMB
61 Forsyth Street, S.W.
Atlanta, Georgia 30303-3104

Subject: Responses to Comments on the *Surficial Aquifer Interim Remedial Measure (IRM) and Soil Solidification/Stabilization Pilot Test Work Plan*
Koppers portion of the Cabot Carbon/Koppers Superfund Site, Gainesville, Florida

Dear Mr. Miller:

On behalf of Beazer East, Inc. (Beazer), we are providing responses to comments on the September 25, 2008 *Surficial Aquifer Interim Remedial Measure (IRM) and Soil Solidification/Stabilization Pilot Test Work Plan*. Also, we are providing a revised (January 16, 2009) version of the work plan to address the comments.

The USEPA comments, provided in your letter of October 31, 2008, are repeated below along with Beazer responses. Also, as you requested, we have provided responses to other non-duplicative comments you received from stakeholders in separate letters:

- October 21, 2008 comments from the Alachua County Environmental Protection Department (ACEPD), as transmitted in a letter from John Mousa;
- October 22, 2008 comments from the Gainesville Regional Utilities (GRU), attached to a letter from Rick Hutton; and
- October 22, 2008 comments from Florida Department of Environmental Protection (FDEP), as transmitted in a letter from Kelsey A. Helton.

Responses to USEPA Comments

1. *On page 2 of the report, text in the next to last paragraph of Section 1.1 refers to four potential source areas. Given results of ground-water monitoring, among other factors, the word "potential" needs to be removed from the sentence. This comment has applicability to other sections of this report. Areas where wording changes are needed can partially be found by using the search function in Adobe Acrobat to scan the PDF file, but additional instances where changes are required include one or more figures in the report (e.g. Figure 2, Site Map).*

Response: The work plan has been updated per this suggestion.

2. *In the third paragraph of Section 1.2, the text needs to state, in the fifth sentence, that the Hawthorn Group is an effective upper confining unit for the underlying Floridan aquifer, or alternatively, the Hawthorn is an effective confining unit separating the unconfined surficial aquifer from the underlying, confined Floridan aquifer.*

Response: The work plan text has been updated per this suggestion.

3. *The proposed extraction trench locations apparently capture all, or most of the most highly contaminated ground water within the Koppers property (compare Figure 5 to Figure 4). However, the proposed placement of the extraction trenches requires that some highly contaminated ground water at the base of the surficial aquifer near the South Lagoon must migrate approximately 375 feet eastward before being captured by the nearest trench (contamination at MW-21BR). There is some potential for vertical movement of this contaminated ground water across the clay at the top of the Hawthorn Group, despite the apparent demonstration that plume capture is complete to the bottom of the surficial aquifer for particles released in the vicinity of the northern end of the South Lagoon (December 22, 2006 report on the surficial aquifer hydraulic containment; Figure 16; a portion of this figure is reproduced below* [in the comment letter]*).*

   Note from this figure that the northern end of the South Lagoon (the y-shaped area shown near the bottom of the figure) is near the margin between areas where modeling has predicted that particles would or would not be captured by a drain located near the former process area. Figure 5 in the IRM proposal indicates that capture would be further to the west than indicated by the 2006 modeling effort. The IRM plan does not document how the modeling analysis has been changed to account for the expanded area of capture, relative to the capture zone projected earlier for the area around the South Lagoon. Sufficient documentation is needed in the IRM plan to explain how the area of capture has expanded to include a much larger area to the west of the South Lagoon than was indicated in the December 2006 report.

Response: The reason for the difference in the capture zone depictions has to do with the vertical release point of particles. Figure 16 of the December 22, 2006 memo shows capture of particles released one foot above the top of the Hawthorn Group upper clay; Figure 5 of the September 25, 2008 (original) work plan shows capture of particles released one fourth of the way between the top of the upper clay and land surface (roughly six feet above the top of the upper clay).

In order to respond to the ideas in this comment, a new drain configuration was simulated that replaces the two drains west of the Former Process Area with one drain just north and east of the Former South Lagoon and one drain to the north-northwest of the Former Process Area. This configuration resulted in full capture from source areas and required shorter travel distances from known contamination areas to the drain locations. This configuration also resulted in slightly larger capture zones and so was judged to be more reliable. The revised work plan presents this modified configuration as the design.

Also, additional plots are provided in the revised work plan to show simulated capture of particles at different vertical release points: (a) one-foot above the top of the Hawthorn Group upper clay (Figure 8), (b) one-fourth of the way between the top of the upper clay and land surface (Figure 5), and (c) at the water table surface (Figure 7).

4. *Related to the previous comment is a concern about how the upper Hawthorn clay has been considered in the modeling analysis. An April 2008 letter report addressed to Scott Miller from Jim Erickson of GeoTrans, Inc., provided the latest documented update regarding the clay thickness in the upper Hawthorn Group. The clay thickness is an important consideration, because it affects the potential velocity and flux of ground-water movement across that confining or semiconfining layer. In the original modeling analysis performed by GeoTrans ("Addendum 6: Groundwater Flow and Transport Model, 2004), the Hawthorn Group thickness in the northern part of the South Lagoon was 3 feet per day* [sic]. *In the April 2008 update, the Hawthorn Group thickness in the northern part of the South Lagoon is approximately 1 to 2 feet (Figure 4 in that document), but the projected thickness is based on sparse data from that area. The closest two points to the northern end of the South Lagoon with posted elevations of the bottom of the upper Hawthorn clay give elevations of 161.3 feet above mean sea level (amsl) and 158.4 ft amsl (Figure 3, April 2008 update). Top of clay*

elevations (Figure 2, 2008 update) show a variety of values. For example, in the vicinity of the 158.4-foot amsl bottom clay elevation, there are several posted top of clay elevations that range from 160.9 feet amsl to 163.49 ft amsl. Thus, it is reasonable to conclude that in this area, the clay thickness is probably between about 2.5 and 5 feet. Near the posted bottom of clay elevation of 161.3 feet, there are top of clay elevations that range from 160.79 feet to 164.9 feet. In the general area of the South Lagoon, there are data indicating that the top of the upper Hawthorn clay ranges in elevation from 159.99 feet to 167.58 feet. There are data points in extremely close proximity to each other in the South Lagoon area where the reported clay surface varies by more than 2 feet. Elsewhere across the Koppers property, in areas where there are nearby posted elevations for the lower elevation of the upper Hawthorn clay, there are several instances where the lower elevation of the clay varies by more than 2 feet for locations within 50 feet of one another.

The point of the clay thickness discussion in the previous paragraph is to indicate there is some potential for the clay thickness in the South Lagoon area to locally be thinner than the value that may have been used in the model, presumably either 3 feet (no change to the 2004 assumed thickness) or some alternate value based on clay thickness contouring presented in the April 2008 letter report. If the clay is locally thinner than projected in the modeling, there will be a greater potential on a localized basis for contamination in the lower surficial aquifer to cross the Hawthorn upper clay than is accounted for by the modeling analysis. The IRM plan needs to indicate the assumed clay thickness in the northern part of the South Lagoon and should also provide assurance that even if the clay is thinner than accounted for by the model, there is a minimal potential for significant contaminant movement from the lower surficial aquifer into the Hawthorn Group in the vicinity of the South Lagoon.

Response: As stated in the response to Comment #3, the new groundwater collection drain configuration in the revised workplan will result in more reliable capture of Surficial Aquifer groundwater at source areas. Also, Beazer will operate the four new drains in the source areas at their maximum sustainable rates to maximize capture and minimize the potential for downward migration from source areas via possible locally thin zones in the Hawthorn Group upper clay. This operation detail has been added to the work plan and addresses the main concern of the comment above.

The MODFLOW groundwater flow model was originally documented in the October 2004 GeoTrans modeling report. The December 2006 report on capture effectiveness describes modifications to that model including: (1) increasing the number of model layers in the Surficial Aquifer and Upper Floridan Aquifer; and (2) updating significant changes in clay thicknesses based on geologic core obtained from monitoring wells FW-10B through FW-23B. Monitoring well FW-19B, located adjacent to the former South Lagoon, had an upper clay thickness of 2.5 feet, and HG-9S in the central portion of the former South Lagoon indicate an upper clay unit thickness of 1.7 feet. This relatively small change in the upper clay unit thickness for this area was not deemed significant for model predictions in this area. Therefore the original model thickness of 3 feet was retained for this area.

Newer interpretations and approximations of Hawthorn Group layer elevations and thicknesses have been made since the report on capture effectiveness (e.g. as presented in the April 2008 letter report) based on more recently obtained data and USEPA requests. A more detailed evaluation of Hawthorn Group clay unit thicknesses performed in 2008 indicates that the Hawthorn Group upper clay unit may range in thickness from 3.5 feet to 1 foot across the former South Lagoon, with an average of approximately 2 feet. These revised clay unit thicknesses are based on subtracting the interpreted upper and lower contoured surfaces for each clay unit and subtracting the two surfaces.

However, in Beazer's view an update to the model would not be worthwhile at this time. Rather, Beazer recognizes that the precise details of layer elevations and thicknesses (and, for that matter, vertical hydraulic conductivities) are unknown. The modeling tool developed and calibrated in 2004, then revised in 2006, is still valid for showing the general benefits of certain actions; for instance, its use in the December 2006 report on capture zone effectiveness clearly shows that adding withdrawals near the source areas helps prevent downward migration.

In Beazer's view it is prudent to move forward with an interim withdrawal plan that will clearly be better than the current one. Using the best predictive tool available at this time (namely, the calibrated Site groundwater model as updated in 2006), it appears that source-area groundwater will be fully contained.

5. *As another comment about the proposed placement of the interceptor trenches 1 and 2 in the vicinity of the western margin of the former process area, this placement results in surficial aquifer contamination in the South Lagoon area having to travel as much as approximately 375 feet eastward to reach the trench location, as noted in comment 3 above. Accounting for some contaminant retardation, this ±375-foot distance probably means that the contaminant travel time from the area of known significant contamination around the north end of the South Lagoon to the proposed trench to the east is approximately 1 year. Capture of contamination from the South Lagoon area may be complete with the proposed layout of interceptor trenches to the east of the South Lagoon, yet it may be very inefficient in terms of mass removal of the ground water contamination originating from the South Lagoon area. The report needs to discuss the potential benefits and disadvantages of adding an additional trench along the eastern or northeastern margin of the South Lagoon in order to more effectively recover surficial aquifer contamination from that area. One alternative to the proposed trench layouts in the IRM plan is to relocate the number 1 and 2 trenches to the east of the former Process Area, cease extraction from EW-16, and construct another trench line to the east of the South Lagoon. This alternative would probably result in more recovery of any surficial aquifer contaminated ground water that may have migrated past the extraction well line into the area east of the Koppers property and would provide greater assurance that contaminated surficial aquifer ground water in the vicinity of the South Lagoon is being efficiently captured, by adding the additional trench.*

Response: As noted in the response to Comment #3, the revised work plan incorporates a drain configuration generally consistent with this comment. Note that installation of a trench to the east of the Process Area was not selected due to the presence of significant underground utilities in that area.

6. *Table 1 needs to be corrected in terms of the total flow reported for the perimeter wells.*

Response: The table has been corrected and revised.

7. *Performance monitoring of the IRM needs to include an additional goal of monitoring the effectiveness of the individual trenches in arresting plume movement away from the identified principal contaminant source areas. The proposed locations of performance monitoring for the IRM are acceptable, but one or two additional monitoring points are needed. Specifically, it would be useful to add a surficial aquifer monitoring well pair somewhat to the east of the proposed trench aligned to the east of the North Lagoon, to monitor contamination that might be moving east of that source area. Currently, there are no monitoring points that provide coverage of that area. Also, if the previous discussion regarding the possibility in adding another trench east of the South Lagoon results in a modification to the recovery system that results in additional recovery of contaminated ground water from that area, then another surficial aquifer monitoring point is needed to the east of that additional recovery zone.*

Response: Two new monitoring locations have been added (MW-12 and MW-32B) and the text has been clarified to state that all four new groundwater collection drains will be included as monitoring points.

8. *The IRM plan needs to include a section to address what steps will be taken should the trenching activities encounter or should the collection drains recover DNAPL. The potential for DNAPL recovery has implications for both water treatment/waste management, and the performance of the recovery drain system.*

Response: These possibilities have been addressed in the revised text.

9. *Several comments regarding statements made in the second paragraph of Section 2.4:*

   a. *Since inception of the drain system will reduce the hydraulic head to the west of the perimeter recovery wells, then one may expect that if current perimeter extraction well flow rates are maintained once the drain system is operational, the perimeter extraction wells would withdraw more ground water from areas to the east of the Koppers property. It is unclear if any such additional withdrawal of ground water from the east of the Koppers property would be significant with respect to recovering contaminated ground water that has managed to migrate past the line of extraction wells, or if the operation of only the extraction drains would allow for additional removal of any contaminated ground water that has migrated east of the Koppers property.*

      If possible, it maybe advantageous to pump extraction wells EW-11, EW-13 and EW-15 at higher rates than indicated in the IRM proposal, in order to increase recovery of potentially contaminated surficial aquifer ground water from areas to the east of the Koppers property. However, there may be a need for maintaining total flow rates at a ceiling of approximately 47 gpm, consistent with the total proposed flow rate (Table 1). Most of the extraction wells that will continue to be operated are located in the northeastern part of the Koppers property, an area that may be outside of any measurable effects from operation of the drains. Several of these northern perimeter extraction wells are in areas where ground-water contamination is apparently relatively minor (based on extraction well and monitoring well data). It may therefore be advantageous to stop pumping these wells at some point and pump the active extraction wells further south at higher withdrawal rates at that time, potentially enhancing recovery of ground water to the east of the Koppers property while maintaining an overall flow below any ceiling amount.

      The purpose of this discussion is to indicate that (1) shutdown of perimeter extraction wells may be most advantageous if it is done at different times, depending upon the effectiveness of the extraction wells at mass removal and plume control, and (2) operation of both extraction wells and drains should be adjusted over time to optimally recover contaminated ground water. The proposal in Section 2.4 makes no distinction between the effectiveness of different extraction wells, nor does it indicate that adjustments to the pumping regime will be made based upon future monitoring data. The plan needs to be more flexible and creative in outlining the possible changes that may occur over time for the recovery of surficial aquifer ground water.

Response: It is agreed that the operation plan should be flexible and adaptable. The revised text of Section 2.4 better explains this flexibility and incorporates the idea of optimizing extraction rates based on monitoring data.

   b. *Point (3) in Section 2.4 states that the perimeter extraction wells will be proposed for shutdown based upon a criterion in which "…Surficial Aquifer groundwater concentrations between the source areas and perimeter wells have reached levels that are likely to be naturally attenuated* *on Site." It is unclear from the remainder of the IRM plan where monitoring to ascertain such a condition will occur, as the only surficial aquifer monitoring proposed outside of the perimeter or near-perimeter monitoring is apparently at MW-3BR and MW-33B (Figure 5). Monitoring of these wells will not provide useful information on when to shut down pumping at any extraction wells to the south of these monitoring points. Either more detail is needed concerning this criterion and how it will be evaluated, or the text should indicate that such details would be developed on an as-needed basis, once additional monitoring data are obtained. Also note that extraction wells that are shut down should be reactivated if additional monitoring data indicate a need for such an action.*

Response: The determination of low concentrations between source areas and perimeter wells will be made using monitoring well and extraction well data, with required data obtained or presented as needed to support the shutdown proposal. Two additional monitoring wells have been added to the list of effectiveness-monitoring points (see response to Comment #7). The revised text also notes that the perimeter wells will be reactivated if needed.

c. *At the close of Section 2.4, there is the statement "This extraction system will remain in effect until the long-term remedy is implemented." It may be advantageous to operate the extraction drain system for some period after the source area remedy is implemented. A decision regarding when to completely cease recovery of contaminated ground water from the surficial aquifer should not be made until certain additional milestones have been met, such as having a sufficient monitoring data set after implementation of the drain system, the specific remedial actions for the source areas have been selected, and other possible factors.*

Response: The long-term remedy design will define if and how the Surficial Aquifer groundwater extraction system should be phased out. This point has been added in the revised text.

10. *It would be useful to an overall understanding of the magnitude of ground-water contamination and the appropriate time for shutdown or adjustment of the drains and possibly the extraction wells if water being extracted from the trenches was periodically tested to determine the concentrations of site COCs. The IRM plan should propose such testing.*

Response: The text has been modified to clarify that the four collection drains will be part of the IRM effectiveness monitoring.

11. *With regard to Section 3, the proposed soil solidification/stabilization pilot test, the placement of soils used in the testing should probably not impede potential future remedial actions that might be taken to directly address contaminated materials in the South Lagoon area. See comment 13 for further discussion on this point.*

Response: See the response to Comment #13.

12. *One of the intentions of soil solidification/stabilization (S/S) is to "fix" soil contaminants, thereby making them less susceptible to leaching. This fixation is a chemical process or suite of processes, although any chemical processes are not independent of reduction in contaminant leaching through reduction in hydraulic conductivity. Section 3, however, proposes no pre-treatment or post-treatment monitoring of any leachate being generated through contact of water with the treated soils. The proposed ASTM D5084 method just considers hydraulic conductivity. The ability of untreated and treated soils to leach contaminants needs to be independently tested using a method that does not require movement of fluid through a volume of soil or treated soil emplaced in a permeameter. ASTM D3987 is an ASTM test method that does this; however, EPA's preferred and acceptable method for this type of evaluation is EPA Method 1312, the Synthetic Precipitation Leaching Procedure. The EPA 1312 method will provide a suitable way of inferring the ability of different S/S*

mixtures to chemically "fix" contaminants, provided that certain additional procedures are followed. Note that in order to have a valid estimation of the effectiveness of the chemical fixation, the total concentrations of contaminants need to be determined on the untreated soil samples that are selected for testing. There are numerous other considerations that go into this type of testing (statistical robustness, loss of organics via volatilization, et cetera). Such considerations need to be addressed in the proposal for testing of this sort. In any case, the chemical leachability factor needs to be included in any S/S testing. At the very least, such testing may provide a qualitative measure of the ability of different soil treatments to impede the migration of certain soil contaminants, even if all contaminants of concern cannot be evaluated in the treated soil.

Response: It is anticipated that physical processes will be more important than chemical processes in immobilizing Site-related constituents in the planned pilot test. A lowering of hydraulic conductivity will do much to limit downward mass transfer of any constituents to groundwater. While Beazer believes that SPLP testing is not critical for evaluation of S/S effectiveness, the work plan has been modified to specify this testing for additional information.

13. Figure 8 shows the three S/S pilot test areas and Section 3.2 discusses the pilot test plots. Yet according to Section 3.2.2, all of the testing will be done on samples retrieved from the laboratory. That is, there is nothing apparently critical in placing the treated soil in the areas shown on Figure 8 versus locating the treated soils in some other part of the Koppers property (clearly, the treated soil should be located outside of active work areas, but beyond that criterion, there is nothing that appears to be inherently advantageous in placement of the treated soil where it is shown, versus placing the treated soil elsewhere). Given that observation and comment 11 above, what is the advantage in placing the treated soils over the South Lagoon footprint, rather than in some alternative area? Comment 11 presents an apparent disadvantage in such placement.

Response: The Former South Lagoon area was chosen for this pilot test because: (1) this will cause relatively low interference with plant operations, (2) this area is relatively close to excavation areas as compared to other unused portions of the Site, (3) tree removal will not be required, and (4) this area is already a delineated source area which eliminates the chance of creating a new source of Site constituents. The stabilized/solidified soil plots can be removed in the future if needed. For instance, if the selected long-term remedy requires removal of this material, then such a removal will be performed.

The above text was added to the revised work plan.

Responses to Other Comments

FDEP and ACEPD raise a concern regarding the ability of an excavator or backhoe to achieve good homogenization in the S/S pilot test. FDEP recommends the use of a pug mill. Beazer has evaluated the potential cost-benefit of a pug mill vs. the proposed excavator/backhoe mixing and has determined that the latter is preferable for this relatively small-scale pilot. Beazer will be diligent in field oversight to ensure that the mixing is thorough.

FDEP asks for clarification of the 50 psi UCS performance criteria. This criterion is taken from USACE guidance (*Engineering and Design: Treatability Studies for Solidification/Stabilization of Contaminated Material*. Technical Letter No. 1110-1-158. February 28, 2005). This strength requirement is appropriate for supporting typical soil covers.

FDEP requests a table of total depths and screen intervals for existing Surficial Aquifer monitoring and extraction wells. Such a table is provided as an attachment to this letter.

ACEPD questions whether installation of the Surficial Aquifer groundwater collection drains as an IRM means that this technology is pre-selected as the final remedy for the Surficial Aquifer. The answer is no.

GRU requests continuous groundwater head monitoring with data loggers. Beazer believes that interpretation of such data would be problematic and that the information would not be very useful for defining capture zones.

Conclusion

Beazer appreciates the thoughtful reviews by USEPA and others. The attached revised work plan represents an improved design for the IRM and pilot test. These actions will be useful in: (1) limiting migration potential for Site-related constituents and (2) providing valuable design information for potential use in the design of the long-term Site remedy. Beazer believes it is prudent to move forward with implementation of this work plan, and respectfully requests approval from USEPA.

Sincerely,

Gregory W. Council, P.E.
Principal Engineer

cc: Mitchell Brourman, Beazer
Mike Slenska, Beazer
Donna Kopach, Beazer
Jim Erickson, GeoTrans
Kelsey Helton, FDEP
John Mousa, ACEPD
Rick Hutton, GRU
Bill O'Steen, USEPA
Jack Spicuzza, Koppers

Surficial Aquifer Well Construction Details (Page 1 of 2)

Well ID	TOC (ftmsl)	Total Depth (ft)	TopScreen Depth (ft)	Bot Screen Depth (ft)
EW-01	180.45	25.00	7.00	23.00
EW-02	178.89	25.00	7.00	23.00
EW-03	175.82	22.50	5.00	20.00
EW-05	171.33	25.00	8.00	23.00
EW-06	173.02	28.00	10.00	26.00
EW-08	174.10	26.00	8.00	24.00
EW-09	176.17	31.00	13.00	29.00
EW-10	177.33	27.00	9.00	25.00
EW-11	178.30	29.50	12.50	28.50
EW-13	179.99	28.50	10.00	26.50
EW-14	181.84	26.50	9.00	24.50
EW-15	182.94	27.00	9.00	25.00
EW-16	184.24	25.00	8.10	22.70
EW-17	184.76	27.00	9.00	25.00
ITW-23	173.06	26.50	21.50	26.50
M-01	184.10	21.00	11.00	21.00
M-03A	182.21	15.00	5.00	15.00
M-03BR	179.60	22.00	17.00	22.00
M-04	177.23	15.00	5.00	15.00
M-05B	182.18	26.50	21.50	26.50
M-06	180.50	15.00	5.00	15.00
M-07A	177.09	13.00	3.00	13.00
M-07B	176.92	21.50	16.50	21.50
M-08R	175.71	15.00	5.00	15.00
M-09AR	173.80	15.00	5.00	15.00
M-09BR	173.22	26.50	21.50	26.50
M-10	173.93	13.00	3.00	13.00
M-11B	187.99	23.50	18.50	23.50
M-12	181.06	13.00	3.00	13.00
M-14	187.16	14.00	4.00	14.00
M-15B	181.89	23.50	18.50	23.50
M-16A	180.96	13.00	3.00	13.00
M-16B	180.56	21.50	16.50	21.50
M-17	182.86	13.00	3.00	13.00
M-18	187.26	13.00	3.00	13.00
M-20A	183.18	13.00	3.00	13.00
M-20B	183.67	22.00	17.00	22.00
M-21A	185.88	13.00	3.00	13.00
M-21BR	185.80	22.50	17.50	22.50
M-22A	184.33	15.00	5.00	15.00
M-22B	184.61	27.00	22.00	27.00
M-23AR	185.15	13.00	3.00	13.00
M-23BR	185.10	23.50	18.50	23.50
M-24A	187.15	15.00	5.00	15.00
M-24B	187.19	25.50	20.50	25.50
M-25A	186.76	13.00	3.00	13.00
M-25B	186.15	23.00	18.00	23.00
M-26	187.31	13.00	3.00	13.00
M-27A	186.44	13.00	3.00	13.00
M-27B	187.06	20.00	15.00	20.00
M-28R	186.62	13.00	3.00	13.00

Surficial Aquifer Well Construction Details (Page 2 of 2)

Well ID	TOC (ftmsl)	Total Depth (ft)	TopScreen Depth (ft)	Bot Screen Depth (ft)
M-29	186.67	13.00	3.00	13.00
M-30A	187.24	13.00	3.00	13.00
M-30B	187.31	23.00	18.00	23.00
M-31	187.50	13.00	3.00	13.00
M-32AR	186.12	13.00	3.00	13.00
M-32B	186.01	23.00	18.00	23.00
M-33B	176.39	27.30	22.30	27.30
OW-01	187.35	23.40	14.50	24.50
OW-02	187.40	25.20	15.00	25.00
PW-01	186.84	24.85	4.30	24.30
PZ-01A	182.44	28.40	15.00	25.00
PZ-01B	182.81	28.00	15.00	25.00
PZ-02A	180.74	27.40	14.00	24.00
PZ-02B	180.59	27.45	14.00	24.00
PZ-03A	177.22	26.25	14.00	24.00
PZ-05A	173.05	27.80	13.00	23.00
PZ-05B	174.07	25.00	15.00	25.00
PZ-06A	174.77	28.10	15.00	25.00
PZ-06B	174.72	28.40	15.00	25.00
PZ-08A	176.16	30.30	17.00	27.00
PZ-08B	175.87	27.60	17.50	27.50
PZ-09A	177.74	31.50	20.00	30.00
PZ-09B	177.26	31.35	20.00	30.00
PZ-10A	179.20	27.10	14.50	24.50
PZ-10B	178.61	27.16	14.50	24.50
PZ-11A	179.82	29.90	17.00	27.00
PZ-11B	179.59	29.75	17.00	27.00
PZ-13A	181.14	27.10	14.50	24.50
PZ-13B	181.67	27.20	14.50	24.50
PZ-14A	183.22	27.50	15.00	25.00
PZ-14B	182.98	26.50	15.00	25.00
PZ-15A	185.03	28.25	15.00	25.00
PZ-15B	184.84	28.25	15.00	25.00
PZ-17A	186.23	29.00	17.00	27.00